



# Carbon Management Plan 2015

## North East Scotland College



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## Executive Summary

North East Scotland College's Carbon Management Plan compliments its existing strategies and policies whilst focussing on the management of the opportunities associated with the reduction of carbon emissions. The College is committed to reducing our carbon emissions whilst continuously improving the learning experience for our students and the working environment for our staff. The Carbon Management Plan will allow the College to build on successes and ensure that we continue to deliver the benefits of this programme over the years. North East Scotland College will reduce the CO<sub>2</sub> emissions from its activities by 15% from the 2010/11 baseline, by July 2020.

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A range of measures have been selected to provide benchmarking data for the College regarding its environmental performance. The measures cover the areas of energy and water use, waste and transport.

The benchmarking measures have been selected for their impact on the environment and the production of CO<sub>2</sub>. An additional consideration has been the availability of reliable and valid recording and record keeping systems.

Targets have been set for the key energy inputs to the College – energy for heating, energy for electrical equipment and cooling and energy for powering vehicles. The main approach to reducing goods input is to set overall targets for reducing overall waste production as well as target related to increasing the proportion of separated waste as a portion of overall waste.

There are projects planned for the duration of the Carbon Management Plan including refurbishment projects and energy efficiency initiatives.

A baseline carbon footprint for 2010/11 was produced using reliable data which is updated on a monthly basis and input into a data sheet. The figures used in the baseline data provide the starting point for all future measurement of reduction.

Breakdown of emissions for the baseline year of 2010/11 and associated financial costs.

	Total	Buildings	Transport	Waste	Water
Baseline CO <sub>2</sub> equivalent	4258	4055	44	149	10
Baseline Cost (£)	831944	788044	8726	35223	49767

In the previous Carbon Management Plan (CMP) published in 2012, Aberdeen College, as it was known prior to the merger, stated its aspiration to achieve a reduction target of 20%, based on the 2010/11 carbon footprint baseline, by July 2016. When Banff and Buchan and Aberdeen College merged this presented the College with a good opportunity to review and revise the original Carbon Management Plan, helping North East Scotland College, as it is now known, move forward constructively. The 2010/11 carbon footprint was calculated to be 4258 tonnes of

carbon dioxide equivalent (tCO<sub>2</sub>e) and covered electricity, natural gas, other fuels, transport (fleet), water and wastewater consumption, and waste disposal to landfill.

North East Scotland College has therefore decided to set a target to reduce its total annual carbon footprint to 3619 tCO<sub>2</sub>e, a 15% reduction from 2010/11 by the end of financial year 2020 (based on current emission factors at the time of writing). Reductions will be achieved through a range of projects including energy, fleet and awareness raising initiatives.

North East Scotland College does not specifically have capital funding approved by the Finance Committee for carbon management projects but this is taken into consideration for every project that is put forward and funds allocated as required. Environmental considerations are taken into full consideration when deciding upon a programme of Capital Works and Minor Works Programme.

This CMP will continue to focus on the following areas:

Upgrade to Efficiency – continuing upgrading inefficient buildings and replacing inefficient appliances.

Build Better – all new buildings should be sustainably designed and resource efficient.

Move to clean power – purchase or generation of electricity from renewable sources.

Expand Transportation Alternatives – making it easy to get around with less fuel.

Implement Green Purchasing – procurement of products that use less energy, last longer and are good for the environment.

Institutional Conservation – create a culture of conservation awareness across the organisation

The Project Sponsor for this CMP is the Environmental and Sustainability Manager, who will be assisted in its delivery by the Facilities Management Team.

This CMP is viewed as a 'live' document and it is envisaged that there may be changes on an annual basis as North East Scotland's estate changes and planning assumptions become a reality. To ensure that it remains 'fit for purpose' to deliver targeted carbon savings, this document will be reviewed on an annual basis. This process will be overseen at Facilities Meetings and coordinated by the Environmental and Sustainability Manager.

The review will examine a number of areas including: progress towards overall carbon reduction target; progress with identified carbon reduction projects; financial savings achieved as a result of carbon reduction projects; programme costs; wider benefits; stakeholder engagement and Risk Register. The review will be presented to the Senior Management Team (SMT) through the Environmental and Sustainability Manager. The SMT will in turn present this to The Board of Management. The annual progress review will be placed on the intranet.

To facilitate the review process, Standard Operating Procedures will be put in place to provide a formal framework for carbon data collection and collation, and reporting on carbon reduction project progress.

## Foreword from the Project Sponsor

North East Scotland College is committed to minimising the environmental impact of the organisation. This is reflected in our early adoption of the Universities and Colleges Climate Commitment for Scotland, in our compliance with Bsi ISO14001, and in our achievement of the EcoCampus Platinum award. Much has been already achieved within the College in terms of, for example, reducing travel, increasing recycling, replacing old boilers with new carbon-efficient ones.

Since merging we have ensured, in a relatively short timescale, that all our campuses are now ISO14001 accredited therefore sharing the same aims and striving to meet the same requirements set out by external bodies.

As we further develop the organisation we know that much remains to be done – in particular in ensuring that, as we develop new premises and refurbish existing ones, we consistently reduce the carbon footprint of the organisation. The Carbon Management Plan compliments existing strategies and policies whilst focusing on the management of the opportunities associated with the reduction of carbon emissions. The College is committed to reducing carbon emissions whilst continuously improving the learning experience for staff.

The Carbon Management Plan will allow North East Scotland College to build on successes and ensure we continue to deliver the benefits of this programme over the years.

## **Foreword from Resource Efficient Scotland**

Resource Efficient Scotland are pleased that North East Scotland have committed to improving their resource efficiency throughout their operations demonstrated in this Carbon Management Plan. There is an opportunity to save energy, water and money, increase recycling and use fewer resources. Resource Efficient Scotland will be able to provide assistance to implement and deliver on these improved resource efficiency measures through technical support and guidance.

# 1 Introduction

## 1. General

North East Scotland College began their Carbon Management Programme in 2015. A review undertaken indicates that the following were reasonably well established: the original carbon footprint; the process for managing carbon emissions, and project list to achieve carbon savings. However, the review also acknowledged that, strengthening of progress tracking and further project opportunity development would support ongoing efforts.

North East Scotland College therefore recognises that it has reached a point in its carbon management maturity where the decisions it makes in this current plan period with respect to future funding of carbon management reduction measures will have a significant impact on the organisation's ability to meet its stated reduction targets.

## 2. Background to the Organisation

This document represents North East Scotland College's commitment to the environment, with particular reference to reducing carbon emissions over a 5 year period.

The Carbon Management Programme outlined in this document complements the College's accreditation through ISO 14001 and its obligation under the Universities and Colleges Climate Commitment for Scotland (UCCCFs).

Baseline data on carbon emissions was established for academic year 2010-11 and the College has set a target of a 15% reduction in these baseline figures by academic year 2018/19.

North East Scotland College has already achieved a notable reduction in carbon emissions since the development of its Environmental Management System in 2008, and the further reduction will be achieved through a number of projects, centred on changes to the College's estates and raising the awareness of staff and students.

As an institution North East Scotland College has increasingly focused on environmental sustainability over recent years, examples of this progression can be seen below.

- At present an £8 million project currently underway at Fraserburgh Campus is taking environmental matters into full consideration and is aiming for a BREEAM Award.
- In November 2014 City Campus completed an over cladding project including double Glazing to its main building.
- Environmental and Sustainability Manager appointed in July 2008
- ISO14001 accreditation for all operations at all sites awarded in June 2009 and in July 2014 for Fraserburgh Campus.
- The first College or University in the UK to achieve EcoCampus Platinum Status – Aberdeen College achieved EcoCampus Platinum status in November 2009.
- New Build has been certified a BREEAM excellent rating for its environmental performance. Features of 'green' construction include solar panels and a 25KW wind turbine which allow the College to use renewable energy to help power the building. Other carbon friendly features include natural ventilation and insulation levels higher than required by insulations. Rain water is also collected from the roof for use in the toilet cisterns.
- 24 fully established Environmental Management System Procedures
- Register of Environmental Legislation and other Compliance has now been established.
- Aspects and Impacts Register fully established.
- Waste Segregation – All College waste that can be recycled is now segregated
- Waste Areas - All bins and waste areas are now clearly labelled to prevent cross contamination of waste.
- Oils and liquids - All oil's and liquids are now clearly labelled and stored internally in bunded areas
- Site Plans - Full site plans have been drawn up for all sites highlighting drainage routes, interceptor capacities and gases stored on site in line with legislation.



- Interceptors – All interceptor capacities are now known in line with legislation. Interceptors all relined where necessary
- Multiple Occupancy Parking Spaces launched
- New cycle lockers purchased for staff
- Centralised Monthly Special Waste Uplifts arranged
- Carbon Trust Report – A building feasibility study has been undertaken at Gallowgate with the aim of identifying potential energy savings through infrastructure improvements. The assessment was performed in conjunction with the carbon trust and has identified a number of potential improvements, the capital costs and estimated pay-back times. These include boiler replacement, building fabric and glazing options and optimal heating control.
- Food recycling launched
- Redundant IT equipment reused and recycled
- Travel Plan produced
- Video Conferencing
- Student Environmental Placement Programme was created with the remit of “developing and promoting sustainable attitudes by staff and students.
- Universities and Colleges Climate Change Commitment for Scotland/ Environmental Management System and Climate Change Action Plan – The College has become a signatory to the Universities and Colleges Climate Change Commitment for Scotland and has set targets against waste minimisation, energy consumption and travel in line with ISO14001 objectives. An Action Plan has been produced.
- Carbon Ambassador Project – Project was undertaken in November 2010. Students undertook Carbon Audits in a variety of areas throughout the College identifying possible carbon savings, most of which have been included in the Climate Change Action Plan.
- Contractor Information – Information for all contractors can now be found in the Health, Safety and Environmental Procedures for Contractors leaflet.

In November 2013 Aberdeen College and Banff and Buchan College merged to form North East Scotland College. Prior to this much work had been carried out at both College's and both were at very different stages as far as recording and reporting data. Due to this it has proved difficult to capture and highlight a carbon savings for the work that was undertaken at Fraserburgh including a complete refurbishment of the existing campus resulting in a BREEAM Excellent rating.

North East Scotland College is now made up of the following Campuses:

- Aberdeen City Centre Campus
- Aberdeen Altens Campus
- Aberdeen Craibstone Campus
- Fraserburgh Campus
- Ellon Learning Centre
- Inverurie Learning Centre
- MacDuff Learning Centre

### 3. North East Scotland College's Performance on Carbon Management

Although North East Scotland College began their Carbon Management Programme in 2015, Aberdeen College, as it was, have been implementing energy saving measures since 2009. There is already a reasonably well established process for measuring and monitoring carbon emissions and project list to achieve carbon savings.

The key issues facing the organisation comprise the changes to the built estate and two colleges at very different stages with regards to monitoring and reporting merging together. Increasing energy consuming equipment and facilities all of which will have significant impacts on future carbon emissions. North East Scotland College's Carbon Management Committee will continue to take measures to adapt the CMP to any potentially significant impacts on achieving Carbon Management Plan targets.

One of the key issues in setting a reduction target is the ability to forecast future footprints to enable the setting of a target which is both realistic and achievable. As an example, a 10% reduction on a year 1 footprint of 10,000 tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) (1,000 tCO<sub>2</sub>e saved to achieve the target figure of 9,000 tCO<sub>2</sub>e) is equivalent to a 25% reduction on a year 5 footprint of 12,000 tCO<sub>2</sub>e (3,000 tCO<sub>2</sub>e saved to achieve the target figure of 9,000 tCO<sub>2</sub>e).

As noted, any future footprint forecast needs to reflect anticipated changes in the estate itself (e.g. increases in energy consumption due to refurbished offices) and its use. This Business as Usual (BAU) scenario then provides a clearer picture to allow forecast of a realistic target figure (and hence target) that is achievable, based on a practical project list. Misinterpretation of the BAU case can mask the savings achieved as savings are hidden by an increasing footprint.

The organisation, including senior management, staff and contractors, recognises the true value of the carbon management process and hence the development of an accurate BAU and annual carbon footprints that reveal the true savings being achieved and how these are mitigating against a constant flux.

In the previous Carbon Management Plan published in 2012, the organisation set a reduction target of 20% based on a 2010/11 carbon footprint baseline of 4258 tCO<sub>2</sub>e and emission factors available at the time; this equated to a target footprint of 3406tCO<sub>2</sub>e and an overall cumulative reduction of 852 tCO<sub>2</sub>e across the 5 year period to 20/1516. The 2010/11 footprint included emissions from: electricity, gas and oil consumption; transport (fleet and business, including air travel); waste to landfill, and water consumption.

A number of factors have made this a challenging target. In common with their peers and many other public sector organisations at that time, the complexities associated with delivering a comprehensive carbon management programme were new and not fully understood. Despite the organisation's good history of implementing energy efficiency measures, the increasing demands on staff associated with the identification, planning, resourcing and tracking of carbon reduction projects/initiatives have meant that they were effectively developing new skill sets and increasing their knowledge base whilst still continuing to perform existing duties.

Furthermore, the changing legislative and policy framework has meant that the drive to meet the stated CMP carbon reduction target has often been overshadowed. Finally, energy intensiveness within buildings is increasing, estate is changing and there is a constant drive to increase service delivery.

These factors have combined to suggest that a review and revision of the original Carbon Management Plan, including targets, would help the organisation move forward constructively.

#### 4. Plan Structure

This Carbon Management Plan details the College's strategy for reducing carbon emissions over the next five years and sets out a clear timetable as well as identifying the responsibilities and internal resources required to deliver the programme. The main objectives of the plan are:

- To continue to take a whole business approach so that carbon management is adopted as a key objective. Key stakeholders will continue to be appointed to ensure that carbon reduction is fully integrated into the organisation's culture.
- To adopt revised targets for the measurable reduction of carbon emissions and to deliver these reductions.

In order to ensure that there is effective and ongoing ownership of the programme, it is important to define a governance structure. The Environmental and Sustainability Manager, as Project Sponsor, will be responsible for implementation of the plan and reporting to the Senior Management Team. The CMP will be regularly reviewed and updated, and information on the organisation's environmental performance will be published on an annual basis.

This Plan contains the following Sections:

The Carbon Management Strategy sets out the context and drivers for carbon management in North East Scotland College, including the organisation's own vision and strategic themes.

Emissions Baseline and Projections discusses the results from the revised carbon footprint baseline and includes clear definition on the organisation and operational boundaries applied, and data sources and availability. It also discusses the BAU scenario and Value at Stake.

Carbon Management Projects outlines the carbon reduction projects currently implemented (and thus captured in the most recent carbon footprint) and those planned future projects, and evaluates likely success in achieving the revised targets set out.

Carbon Management Plan Financing describes the financial support available for carbon management within the organisation whilst Management and Delivery of the CMP defines the management structure in place to ensure the Plan's success.

The final chapter on Progress Reporting outlines how the carbon management progress will be monitored measured and communicated both internally and externally.

## 2 Carbon Management Strategy

### 5. Context and Drivers for Carbon Management

The organisation faces a complex set of drivers which set the context for carbon management. Crucially, the organisation recognises that these cannot and should not be viewed in isolation from each other or the principle goal of continuously minimising its environmental impact whilst maximising its contribution to society and the economy.

The following represent the key carbon drivers for North East Scotland College:

- Scottish Government targets
- UK & European targets
- Climate of reducing financial allocations
- Rising energy costs
- Principle that investments in carbon reduction are generally associated with commensurate reductions in future expenditure
- The need to eliminate waste of resources and to increase efficiency
- The organisation's own carbon management targets
- Depletion of the world's finite resources

#### 2.1.1 Climate change

Greenhouse gases (GHGs) produced by human activity, also referred to as carbon emissions, are a major cause of climate change due to their effect on global temperatures. The scientific evidence for climate change is well established. The Intergovernmental Panel on Climate Change, the leading international body for the assessment of climate change published an updated assessment of the current state of scientific knowledge relevant to climate change in 2013 and concluded that climate change is unequivocal and that human influence is clear<sup>1</sup>.

The Scottish and UK government have led the European and international community in the creation of legislation to reduce carbon emissions.

The Climate Change (Scotland) Act<sup>2</sup> set out a statutory framework for GHG emissions reductions in Scotland with a reduction target of at least 80% for 2050 and an interim 42% reduction target by 2020, both based upon the 1990 base year. In 2011, Scottish GHG emissions, including international aviation and shipping, were 51.3 million tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e), 9.9% lower than in 2010 and exceeding the annual target for 2011 of 53.4 MtCO<sub>2</sub>e. However, continuing to meet these targets in the future will require all organisations to continue to find new ways to reduce their carbon emissions.

#### 2.1.2 Resources

With material scarcity and energy security becoming increasingly important priorities, a circular economy is an alternative to a traditional linear economy of make, use and dispose. In a circular economy we keep resources in use for as long as possible, extract the maximum value

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<sup>1</sup> IPCC (2013) Fifth Assessment Report <http://www.ipcc.ch/>

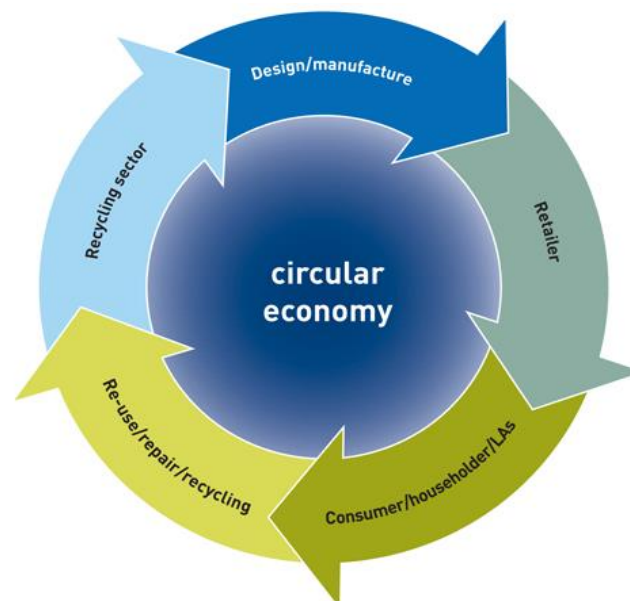
<sup>2</sup> Climate Change (Scotland) Act, 2009

from them whilst in use, then recover and regenerate products and materials at the end of each service life.

This model however is not simple to achieve - it requires product life-cycle thinking across supply chains, production processes and consumers. But by turning the challenges identified into opportunities and then actions, a circular economy can be developed that delivers significant cost and environmental savings.

The most significant circular economic outcomes in each Product Loop involve:

- Keeping products in use for longer (through design for longer life, redeployment, reconditioning etc.).
- Ensuring that unwanted products are returned to the economy for re-use.
- Developing opportunities for closed-loop recycling of materials for high value applications.



### 2.1.3 Legislative drivers for carbon management

There has been increasing amounts of legislation introduced in the UK and Scottish Parliaments which aim to address the issue of climate change, greenhouse gas emissions, and sustainability.

The UK Climate Change Programme (launched in 2000) set a target of 20% reduction by 2010 and 60% reduction by 2050. The Climate Change (Scotland) Act 2009 set legally binding targets to reduce Scotland's GHG emissions by 42% by the year 2020 and by 80% by the year 2050, both based on 1990 emissions. Significant carbon savings will be required across all sectors in Scotland including the public sector. The Scottish Climate Change Act created duties for public sector organisations in Scotland to report and reduce their carbon emissions. Scottish Ministers are also committed to the promotion of renewable energy in Scotland. They set a target that the equivalent of 100% of Scotland's electricity needs are met from renewable sources by 2020, with an interim target of 50% by 2015. Several of the schemes aim to promote the uptake of smaller scale renewable energy generating technologies.

The UK Government has placed an emphasis on the public sector setting a leading example. Public sector leadership will be critical to the achievement of the Government's climate change objectives.

In addition to the EU's Emissions Trading System (EU ETS), a number of legislative instruments such as the Climate Change Levy (CCL) and Carbon Reduction Commitment – Energy Efficiency Scheme (CRC EES) have been introduced by the UK Government, designed to encourage organisations to reduce emissions. The CRC EES introduces carbon trading to energy intensive organisations who are not part of the EU ETS. The EU Energy Performance of Buildings Directive (EPBD) was transposed into Scottish law in 2008 and has placed an obligation to evaluate energy usage for inclusion in Energy Performance Certificates to be displayed in all public buildings meeting certain criteria. The 2010 recast Directive also includes provisions to include nearly zero energy requirements for new public buildings within 8 years or less while Scottish and UK Sustainable Construction strategies aim for zero energy buildings in the same time-frame. This, allied to recent changes in Buildings Regulations, will require the organisation to be proactive in terms of building design, construction and use.

Legislative drivers for carbon management can take the form of targets (e.g. from UK or Scottish Government), incentive systems, charging schemes, or regulatory compliance requirements.

In addition, all campuses of North East Scotland College are ISO14001 accredited committing them to continual improvement and six monthly external audits.

This present strategy document will aid the delivery of key sustainability and estate management programmes in a carbon efficient and sustainable manner.

The College has its own Register of Environmental Legislation from which it works to.

#### 2.1.4 Other drivers for carbon management

While reducing the financial and legal risks posed by various legislative requirements is a significant driver behind the College's carbon management programme there are other factors supporting the need for improving energy efficiency and reducing carbon emissions.

Cost saving: The Stern Review<sup>3</sup> estimated that if no action is taken, the overall costs and risks of climate change will be equivalent to losing at least 5% of global GDP each year, now and forever. If a wider range of risks and impacts is taken into account, the estimates of damage could rise to 20% of GDP or more. In contrast, the costs of action – reducing greenhouse gas emissions to avoid the worst impacts of climate change – can be limited to around 1% of global GDP each year.

The case for carbon reduction is strengthened by the financial constraints facing all organisations. Funding cuts provide significant incentive to reduce resource consumption and therefore carbon emissions. A sensitive world economy, limitations on energy supply and a more challenging regime in terms of carbon taxation will drive energy prices above general inflation for the foreseeable future. This is particularly significant given the large proportion of the College's carbon emissions that are derived from gas and electricity usage demonstrated below as Building.

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3 The Stern Review: The economics of Climate Change (2006). N Stern  
[www.hm-treasury.gov.uk/sternreview\\_index.htm](http://www.hm-treasury.gov.uk/sternreview_index.htm)

Sum of tonnes CO2	Year				
	2009/10	2010/11	2011/12	2012/13	2013/14
Water	9.12	8.55	12.17	16.26	12.90
Building	4,441.50	3,864.65	4,254.33	4,231.24	4,413.96
Transport	48.75	43.11	34.05	24.24	31.31
Waste	77.62	83.93	54.56	49.27	45.42
<b>Grand Total</b>	<b>4,577.00</b>	<b>4,000.23</b>	<b>4,355.11</b>	<b>4,321.02</b>	<b>4,503.60</b>

Reputational benefit: Reducing North East Scotland College's carbon emissions will demonstrate its commitment to good carbon management and sustainability and will enable the organisation to act as an exemplar to encourage others. In addition, a commitment to sustainability is increasingly linked to an organisation's reputation with better sustainability credentials and good carbon management enhancing the organisation's reputation.

Improved staff satisfaction: A number of studies have identified a correlation between a focus on sustainability and staff satisfaction (particularly where staff are fully involved) and this can lead to improved 'productivity' or morale.

Improved engagement with key stakeholders: The organisation's key stakeholders, including staff, students and the local community, are increasingly focusing on sustainability. The organisation's engagement and enhanced commitment and leadership with this agenda will improve its relationship with these stakeholders. The College will seek to become an exemplar of good practice and so engage others in making a positive contribution to sustainable development.

## 6. North East Scotland College's Low Carbon Vision

Aberdeen College, as it was, began its commitment to sustainability in the 2008 when the Environmental and Sustainability Manager was appointed. This early investment allowed the College to become ISO14001 accredited in 2009 and this status has been renewed in 2012 and the next assessment of the full system is scheduled for 2015.

The organisation has developed a comprehensive Carbon Management Plan with targets and timetables for substantially reducing greenhouse gas emissions and improving its impact on the environment. The core themes within the CMP include:

- Upgrade to Efficiency – continuing upgrading inefficient buildings and replacing inefficient appliances.
- Build Better – all new buildings should be high performance and energy efficient.
- Move to clean power – purchase or generation of electricity from renewable sources.
- Expand Transportation Alternatives – making it easy to get around with less fuel.
- Implement Green Purchasing – procurement of products that use less energy, last longer and are good for the environment.

- Institutional Conservation – create a culture of conservation awareness across the organisation.

The objectives listed create a number of opportunities and challenges. Critical to the success of the Carbon Management Plan is the understanding and buy-in of staff across the organisation. An effective communication plan will facilitate this, and is important to maintaining the profile of the CMP throughout the five year lifecycle. The following objectives have been set for this strategy:

- To raise awareness of the CMP.
- To obtain buy-in to the plan from stakeholders.
- To inform staff of progress and key milestones.
- To ensure there is an opportunity to contribute to the project through consultation and feedback.
- To champion a low-carbon approach to the wider community by publicising successes.

A range of communication channels have been defined and will be used as appropriate for the audience/message. The channels used and overall effectiveness of the communications strategy will be reviewed regularly during the project to determine whether the objectives are being attained.

## 7. Strategic Themes

There are two primary objectives of the Carbon Management Plan: to achieve a reduction in carbon emissions and to embed carbon management within the culture of the organisation. In order to achieve these objectives, the College will continue to build on the key themes identified in the 2012 Plan. The organisation's strategy and implementation plan will therefore need to address the following specific areas.

### 2.1.5 Energy

Energy use in buildings is by far the most significant source for carbon emissions, contributing 98% of the organisation's total footprint, as calculated. Rising fuel costs and legislative drivers such as the CRC EES combine to make this a priority area for action.

The College will continue to focus on increasing the energy efficiency of the estate by installing up-to-date technologies, including renewables where practicable, and engaging with staff and other stakeholders.

Strategic Target:

- To reduce energy consumption by 15% by 2020.

### 2.1.6 Travel/Transport

The organisation continues to strive to reduce carbon emissions arising from transport and travel. In 2012 the organisation released its Strategic Travel Plan, the focus of which is the promotion of active travel (walking & cycling) and reduction in business and fleet travel activity.

Strategic Targets:

- Reduce the % of business miles by 15% by 2020.



- Increase the use of video conferencing by 15% by 2020.
- Reduce the CO2e associated with Fleet vehicles by 15% by 2020.

#### 2.1.7 Waste

The organisation continues its commitment to reducing the quantity of waste going to landfill. At all campuses, recycling facilities are available for the diversion of these materials from landfill into the recycling stream.

Strategic Targets:

- To comply with the Scottish Government's targets for recycling and waste reduction strategies.
- To increase our overall figure for waste diverted from landfill to 80% by 2020.

#### 2.1.8 Water

In addition to Planned Preventive Maintenance which ensures water loss from infrastructure is minimised, the organisation continues to invest in water conservation measures which reduce both consumption and waste water production.

Strategic Target:

- To reduce water use by 15% by 2020

#### 2.1.9 Procurement

The prudent use of natural resources is still a cornerstone of carbon management in the organisation although 100% of the organisation's power is drawn from its utility suppliers Green Source renewable energy.

Resource efficiency is further supported by the SHEFC requirements for all new builds and refurbishment projects to meet BREEAM 'excellent' and 'very good' standards respectively.

On the wider procurement front, North East Scotland College accesses contracts negotiated by Procurement Scotland<sup>4</sup> and other external bodies for a wide range of goods and services procured on a collaborative basis. All of these bodies have sustainability as a central focus of their procurement process, and increasingly environmental factors are featuring within the evaluation criteria applied in awarding contracts. Further guidance on sustainable procurement in Scotland is available from Zero Waste Scotland<sup>5</sup>.

"One off" purchases for equipment and tangible goods always takes account of the whole life cost of the goods which ensure a healthy evaluation weighting is given to long warranty and maintenance contracts, ongoing running costs and the use of consumables.

Strategic Targets:

- To continue to procure 100% of electricity supplies from green sources
- All new build to aim for a BREEAM Excellent and very good standards where financially possible.
- To aim to bring all buildings up to Energy Performance Certificate 'C' standard with 'B+' the target for all new builds.

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<sup>4</sup> <http://www.scotland.gov.uk/Topics/Government/Procurement>

<sup>5</sup> [www.zerowastescotland.org.uk/scotlandprocurement](http://www.zerowastescotland.org.uk/scotlandprocurement)

#### 2.1.10 Carbon data management

Good data recording and data management enable the monitoring of progress against targets. Energy management software is used to collect and collate data for monitoring and targeting in relation to energy and water consumption, and provides analysis and reporting facilities. It is proposed to use this as a single platform for handling all energy and water data such as utility invoices, manual reads and smart meters.

In addition, Standard Operating Procedures (SOPs) are being developed to provide a standardised and formalised process for the collection, analyses and reporting of carbon emissions data.

#### 2.1.11 Communication

The Carbon Management Awareness Campaign (CMAC) is designed to drive awareness of the benefits of carbon reduction; with the objective of changing the behaviour of all staff. This will be launched in April 2015. The branded campaign will use print and electronic media, as well as talks, to promote the message across the organisation. It is anticipated that the CMAC will contribute by addressing the following:

- Awareness raising amongst staff in relation to basic energy-saving practices in daily life.
- Use of equipment in a sustainable way, preserving the lifespan of our current facilities, reducing our expenditure.
- Concurrent financial benefits of energy saving; financial benefits will further allow improvement of facilities, enhancing the organisation's reputation.
- Creation of an enduring culture changes such that good practice will be easily adopted by all new staff.
- Promote staff feedback about energy saving to widen the debate around carbon management.

### 8. Carbon Reduction: Targets and Objectives

The crux of the review process is the setting off a carbon reduction target for the lifespan of this CMP.

**North East Scotland College will reduce its calculated 2010/11 baseline carbon footprint by 638720.85 tonnes of carbon dioxide equivalent by the end of 2020.**

This represents a reduction of 15% based on the total carbon footprint of 4,000.23 tCO<sub>2</sub>e emissions for the year 2010/11 and emission factors at the time of writing. This 2010/11 carbon footprint baseline covers consumption of electricity, gas and other fuels, transport (fleet), water and waste water consumption and waste disposal to landfill. The 15% target will be based on a range of projects including energy, fleet and awareness raising initiatives.

### 9. Measuring Success

As this CMP currently stands, North East Scotland College will exceed the 2010/11 target within the prescribed timeframe. This prediction is dependent on a number of key factors outlined below

#### 2.1.12 Business as Usual (BAU) – Estate Changes: (Look into Programme of works)

Building closures and commissioning: Detail possible impacts of delays/bringing forward any proposed estate changes.

Building type: Detail the impact of new buildings coming on stream and the operation/utilisation of the plant and technologies contained within the buildings e.g. manner of use, time periods of use in relation to original design spec.

Population: Detail relevant possible population changes that would impact on the organisation's service delivery e.g. increased utilisation of services, again population.

#### 2.1.13 BAU - Grid emission factors:

In line with national plans to move towards decarbonisation of the Grid, the BAU scenario modelled within this CMP bases carbon emissions associated with electricity consumption on best current predictions reflecting e.g. likely fuel mixes. These suggest a gradual reduction in kg CO<sub>2</sub>e per kWh.

If the reduction in emissions per kWh are not realised as expected, this will decrease the emission reductions achieved through the planned projects focused on reduction in electricity consumption. However, as things stand, these savings will be significantly smaller than the concomitant increase in emissions associated with the general consumption of electricity across the organisation.

#### 2.1.14 Project funding and implementation

Detail contingency for and commitment to continuing the further identification, timely funding and implementation of new projects on an ongoing basis.

#### 2.1.15 Key Performance Indicators

The issues outlined above demonstrate how real progress being made towards reducing carbon emissions can be lost if viewed out with the context of real world changes. One potential approach to ensure that positive progress is recognised, recorded and reported is through the use of Key Performance Indicators (KPIs), using metrics related to those variables outlined above.

Potential KPIs could include:

Gross Internal Area (GIA): Relating carbon emissions to GIA to determine and demonstrate whether, whilst total GIA was increasing resulting in a reduced downward trend in total emissions, the actual 'carbon efficiency' per square metre was improving.

Turnover: Carbon emissions reporting could be linked in with existing financial reporting; this would also reflect the significant economic role of carbon management within the organisation's structure.

Project Implementation: To ensure momentum is maintained in timely and successful project implementation, progress can be tracked using a Project Register.

### 3 Emissions Baseline and Projections

The first step in developing a Carbon Management Plan is to determine the organisation's current emissions; their 'carbon footprint', facilitating the setting of a realistic reduction target.

The resources to be included in the footprint must be decided (Section 3.1: Scope and Section 3.2: Boundaries) at the outset. The Scope and Boundaries of the carbon footprint will be determined by the extent of the estate, goods and services over which the organisation has operational control, and the availability of good quality data.

Once the scope has been set, a baseline year can be selected and the baseline footprint determined (Section 3.3: Data sources and Section 3.4: Baseline).

The next stage in setting carbon reduction targets is the estimation of projected emissions/ costs if no action were taken (known as Business As Usual or BAU) in conjunction with determination of potential savings with the implementation of carbon management projects identified as achievable and fundable.

Projections for a range of future scenarios can be evaluated. The 'gap' between the future BAU emissions and the projected emissions with carbon management projects implemented is known as the Value at Stake (Section 3.5 Projections and Value at Stake). The organisation's target emissions reduction will be based on this difference (Section 3.6).

## 10. Scope

### 3.1.1 Emissions sources

The GHG Protocol<sup>6</sup> categorises carbon emissions as scope 1, 2 or 3 emissions, as defined below:

**Scope 1 Emissions:** Direct GHG emissions occur from sources that are owned or controlled by the organisation, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.; emissions from chemical production in owned or controlled process equipment.

**Scope 2 Emissions:** Electricity indirect GHG emissions arise from the generation of purchased electricity consumed by the organisation. Emissions from electricity generated on-site are also classed as Scope 2.

**Scope 3 Emissions:** An optional reporting category that allows for the treatment of all other indirect emissions. Scope 3 emissions are a consequence of the activities of the organisation, but occur from sources not owned or controlled by the company. Examples of scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels, including electricity; and use of sold products and services. Scope 3 also includes the Transmission and Distribution (T&D) losses for purchased electricity supplied through the Grid.

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<sup>6</sup> The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard Revised Edition, World Resources Institute; World Business Council for Sustainable Development, 2004.

Three Scopes of Emissions					
CO <sub>2</sub>	SF <sub>6</sub>	CG <sub>4</sub>	N <sub>2</sub> O	HFCs	PFCs
↑		↑		↑	
<b>Scope 1: Direct</b>		<b>Scope 2: Energy Indirect</b>		<b>Scope 3: Other Indirect</b>	
<b>Fuels Combustion:</b> e.g. gas, oil burnt in boilers, furnaces or turbines		<b>Purchased Electricity:</b> purchased direct from generating suppliers		<b>Business Travel:</b> via transport not owned by the organisation	
<b>Owned Transport:</b> e.g. cars, vans, trains, ships		<b>Purchased Heat, Steam and cooling (e.g. CHP) purchased direct from suppliers</b>		<b>Delivery and Distribution:</b> via transport not owned by the organisation	
<b>Physical or chemical processing:</b> e.g. from organisation's own production or from waste disposal		<b>Scottish Public Sector Reporting Requirements – Key:</b>  <b>Minimum Reporting</b>  <b>Best Practice</b>		<b>Use of Purchased Materials &amp; Consumables:</b> e.g. water, aggregates, metals, wood, paper	
<b>Fugitive Emissions:</b> e.g. air con & refrigeration emissions, methane leaks from pipelines				<ul style="list-style-type: none"> <li>- Use of Owned &amp; Leased Assets;</li> <li>- Contracted-Out Activity;</li> <li>- Waste Disposal</li> </ul>	

Source: Public Sector Sustainability Reporting - Guidance on the preparation of Annual Sustainability Reports, Financial Year\_2012-2013

OR

North East Scotland College's carbon reduction target will be set against a 2010/11 carbon footprint baseline covering direct and indirect emissions as set out below.

### 11. Boundaries

Carbon footprints are generally defined in relation to two boundaries: the organisational boundary and the operational boundary

#### 3.1.2 Organisational Boundary

In line with the WRI Greenhouse Gas Protocol, the organisational boundary sets out which assets are to be included in the footprint and how any shared assets will be accounted for. The organisational boundaries used for the production of the carbon footprint outlined below.

#### 3.1.3 Operational Boundary

The operational boundary essentially sets out the emission sources included in the footprint. In keeping with good practice, and, in particular, the WRI Guidance for Public Sector Organisations, this should include all Scope 1 and Scope 2 emissions (e.g. on-site fuel

combustion, company owned vehicles and purchased electricity consumption). As noted above, Scope 3 emissions (e.g. waste, water, commuting and business travel) are considered discretionary but the following are recommended for inclusion by the above noted guidance, with the exception of emissions associated 'Purchased Electricity (T&D losses)' which should be reported:

**Travel/Transport:** Specifically transport in non-owned vehicles, such as employee business travel, commuting or transportation of purchased materials/goods and waste. Travel by air, ferry, bus, rail and in employees own vehicles are all classed as Scope 3.

**Waste:** Unless waste is treated on-site, waste management falls under Scope 3. This may cover the treatment of waste generated in the delivery of organisational services or disposal of waste generated in the production of purchased materials and fuels. Waste treatment activities can include disposal in landfill, incineration and composting. Emission factors associated with waste to landfill include transportation and methane emissions<sup>7</sup> whilst emissions from composting/recycling include transportation and minimal preparation emissions<sup>8</sup>.

**Water:** Defra reports different emission factors associated with water supply and wastewater treatment, therefore it is recommended that both are reported.

**Other:** This may include emissions associated with the procurement of goods and services purchased by the organisation. This category includes all upstream (i.e., well to tank) emissions from the production of products purchased or acquired by the reporting company in the reporting year. Products include both goods (tangible products) and services (intangible products).

The operational boundaries used for the production of the carbon footprint outlined below. Whilst every effort has been made to aggregate full data sets for each category, some data gaps have been identified in the process.

3.1.4 Summary of boundaries in this Carbon Management Plan

The categories included and excluded from the 2015 carbon footprint baseline for the organisation are shown below.

Scopes included in North East Scotland's carbon footprint 2015

Scope	Included in North East Scotland College's carbon footprint	Excluded from North East Scotland College's carbon footprint
One (direct)	<ul style="list-style-type: none"> <li>■ Fuel combustion - natural gas consumption in buildings</li> <li>■ Fuel combustion – gas oil</li> <li>■ Fleet transport – owned vehicles</li> </ul>	<ul style="list-style-type: none"> <li>■ Fugitive emissions - refrigerant gas</li> </ul>
Two (indirect)	<ul style="list-style-type: none"> <li>■ Purchased electricity (generation) – energy consumption in buildings</li> </ul>	

<sup>7</sup> Transportation distances are based on UK average assuming a 50% loading; CH4 emissions from landfill take into consideration a 75% capture rate and 10% oxidisation at cap.

<sup>8</sup> Defra/DECC 2013 Government GHG Conversion factors for Company reporting methodology paper for Emission Factors states: "Under the Scope 3 standard, emissions associated with recycling and energy recovery are attributed to the organisation which uses the recycled material or which uses the waste to generate energy. The emissions attributed to the company which generates the waste cover only the collection of waste from their site."

Three (indirect)	<ul style="list-style-type: none"> <li>■ Purchased electricity (T&amp;D losses) – energy consumption in buildings</li> <li>■ Waste to landfill</li> <li>■ Water &amp; wastewater</li> <li>■ Waste Recycling</li> <li>■ Business Travel in staff owned vehicles</li> <li>■ Business travel in College cars.</li> </ul>	<ul style="list-style-type: none"> <li>■ Business travel in public transport (see Section 3.3.1 below)</li> <li>■ Staff commuting</li> </ul>
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## 12. Data Sources

Data required for estimation of the organisation's carbon footprint comprises, in effect, an inventory of the consumption of goods and services outlined in the table above. This information can generally be obtained from the organisation's own records (Section 3.3.1). These data are then converted to tonnes carbon dioxide equivalent (tCO<sub>2</sub>e) by the application of emission factors (EFs) which allocate an emissions output per unit of goods/service (Section 3.3.2). A complete set of relevant emission factors are sourced and published annually by the UK Government<sup>9</sup>.

### 3.1.5 Organisational data sources

Like all public sector bodies, North East Scotland College routinely collects data for and reports performance via a number of mechanisms, both mandatory and voluntary. To calculate the total carbon footprint for North East Scotland College, data for the year 2009/10 was assembled.

Data sources for North East Scotland College's carbon footprint 2015

Category	Subcategory	Main Source/s
Buildings Energy Use	Electricity Natural Gas Other Fuel	Meter Readings
Travel/Transport	Fleet	Mileage Sheets/ Mileage Claims
Waste	Landfill Recycling	Tonnage Reports
Water	Supply	Meter Readings/ Billing Information
Waste water	Treatment	Meter Readings/ Billing Information

The following challenges were experienced with the collection of data for the emission sources included in the 2015 footprint. There was some difficulty in obtaining complete data sets for the same time period for all categories as detailed below.

<sup>9</sup> 2013 Government GHG Conversion Factors for Company Reporting.  
[www.ukconversionfactorscarbonsmart.co.uk/](http://www.ukconversionfactorscarbonsmart.co.uk/)

Energy: electricity, gas and oil data is collated on a monthly basis. . However, due to metering infrastructure, it was only possible to allocate energy consumption values to metered sites, not to the individual departments. In addition, the metering and sub-metering system made the matching of consumption data to Gross Internal Areas (GIAs) complex.

Travel/Transport: We do not currently have business mileage for any journeys made by public transport; we currently record private and College vehicle mileage on a monthly basis.

Waste: Waste data was collated on a monthly basis and is largely comprehensive.

Water: Largely comprehensive but we are aware we have issues at one site which have still not been rectified despite various attempts.

### 3.1.6 Emission factor sources

Data on energy use, travel and transport, water supply, wastewater treatment and waste to landfill have been converted into carbon emissions using recognised GHG Protocol consistent emission factors provided by Defra in the 2013 Guidelines to Defra/DECC's Greenhouse Gas Conversion Factors for Company Reporting.

Carbon factors, particularly the factor for electricity, change over time and this can have a significant impact on the carbon footprint calculation.

For future reporting, SOPs are being developed to formalise the carbon footprinting calculation process and provide signposting to key sources for current carbon emission factors.

## 13. Baseline

The baseline has been calculated using information from four key areas, stationary sources, including natural gas, electricity and burning oil, transport, including the use of pool cars, minibuses, fleet vans and claimed miles in private vehicles, waste including both recyclables and disposal that ends up in landfill. Water consumption has also been included for each site.

### Categorised emissions

Scope 1 refers to direct GHG emissions occurring from sources that are owned or controlled by the institution including on site combustion of fossil fuels in boilers and mobile combustion of fossil fuels by the institution its vehicles owned by it. Scope 1 also includes fugitive emissions resulting from intentional and unintentional release of GHGs including leakage of HFCs from refrigeration and air conditioning.

Scope 2 refers to energy indirect emissions being released into the atmosphere associated with the College's consumption of electricity. These are indirect emissions that are a consequence of the College's activities but occur at sources we don't own or control.

Scope 3 emissions relates to all other indirect emissions – those that are a consequence of the activities of the institution, but occur from a source not owned or controlled by the organisation. These include – waste disposal embodied emissions from extraction, production and transportation of purchased goods, outsourced activities, and contractor owned vehicles and line loss from electricity transmission and distribution. Within the calculation the College has included the following scope 3 emissions:

The scope of this plan does not include staff and student commuting although a number of initiatives to encourage increased bike travel by staff have been implemented including the bike to work scheme and the installation on secure bike lockers.



## Baseline

The baseline data used is from 2010 / 2011 academic year which runs from 1st August until 31st July. North East Scotland's Facilities department collects this data on a monthly basis and it is populated within the Environmental Management System data spread sheet. The data was based on 552 employees.

The data is based on the buildings and sites in the table below:

Building or site	Energy User	Category (for graphs)	Gross Internal Area (m2)
Altens	Higher Education - lecture room, science	A	9,014
Altens M Block	Higher Education - lecture room, science	B	7,322
ASET - Minto Avenue	Higher Education - lecture room, science	C	3,572
Clinterty	Higher Education - lecture room, arts	D	4,238
Gallowgate	Higher Education - lecture room, arts	E	30,577
Gordon Centre	Higher Education - lecture room, arts	F	3,360

## Baseline year 2010 - Energy

Site/group	Energy Source		
	Electricity Grid kwh	Natural Gas kwh	Burning oil
Altens	1,297,106	2,589,039	
Altens M Block	611,341	1,284,315	
ASET – Minto Avenue	289,014		13,001
Clinterty	264,654		101,973
Gallowgate	3,050,257	64,565	453,243
Gordon Centre	217,784	597,573	
2010 Total	5,730,156	4,535,492	568,217
	CO2 Emissions kg		
	30,77,094	838,930	139,389
2010 Total	4,055,413		
	Cost (£)		
	578,764	165,545	43,753
2010 Total	788,062		

## Baseline year 2010 - Transport

Site or Group	Transport Type (by distance or fuel)	Category (for graphs)	Journey Type	Units	Distance travelled or fuel used	CO2 emission (kg)
Fleet Vehicles	Small diesel car, up to 1.7 litre or under	Car	Fleet	km	71,887	10,877
Fleet Vehicles	Small petrol car, up to 1.4 litre engine	Car	Fleet	km	28,488	5,153
Fleet Minibuses	Medium/large diesel van (>1.25 ≤3.5t)	Car	Fleet	km	45,311	12,403
Delivery Vans	Small diesel van (≤1.25t)	Car	Business	km	44,661	7,947
Claimed Mileage	Average petrol car	Claimed Mileage	Business	km	38,251	7,918
						44,298

#### Baseline year 2010 - Waste

Site/group	Emission type	Amount	CO2 emission (kg)	Cost (£)
ASET	Black stream - Domestic - Landfill	45	19,967	4,727
ASET	Black stream - Domestic - Recycling	6	-	70
Altens	Black stream - Domestic - Landfill	69	30,691	7,266
Altens	Black stream - Domestic - Recycling	70	-	873
Clinterty	Black stream - Domestic - Landfill	39	17,330	4,103
Clinterty	Black stream - Domestic - Recycling	4	-	55
Gallowgate	Black stream - Domestic - Landfill	169	75,744	17,933
Gallowgate	Black stream - Domestic - Recycling	75	-	942
Gordon Centre	Black stream - Domestic - Landfill	11	5,042	1,194
Gordon Centre	Black stream - Domestic - Recycling	3	-	41
2010 Total		491	148,775	£ 37,204

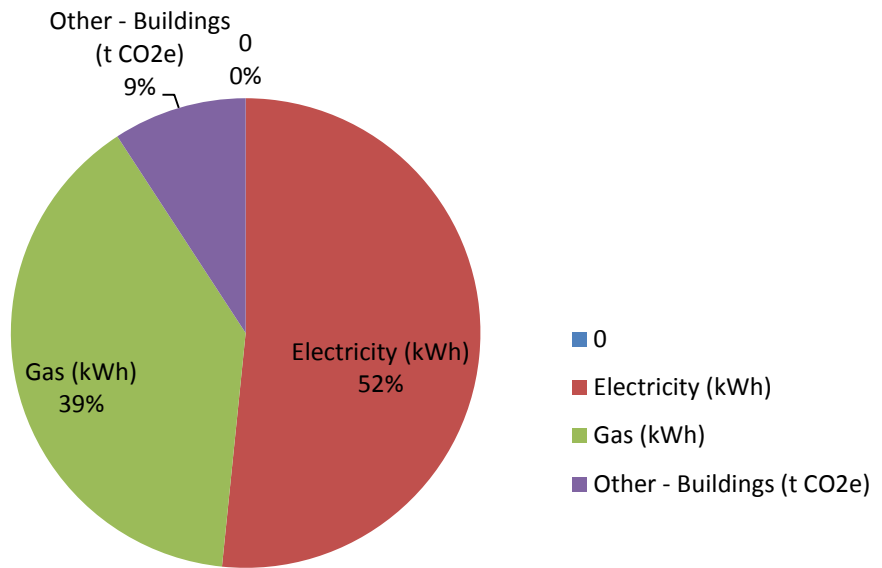
#### Baseline year 2010 - Water

Site/group	Emission type	Category (for graphs)	Amount	CO2 emission (kg)	Cost (£)
ASET	Water consumed (m3)	Water	1,826	738	3,652
Altens	Water consumed (m3)	Water	3,644	1,472	7,288
Clinterty	Water consumed (m3)	Water	1,737	702	3,473
Gordon Centre	Water consumed (m3)	Water	1,387	560	2,774
Gallowgate	Water consumed (m3)	Water	15,299	6,181	30,598
2010 Total			23,893	9,653	£47,786

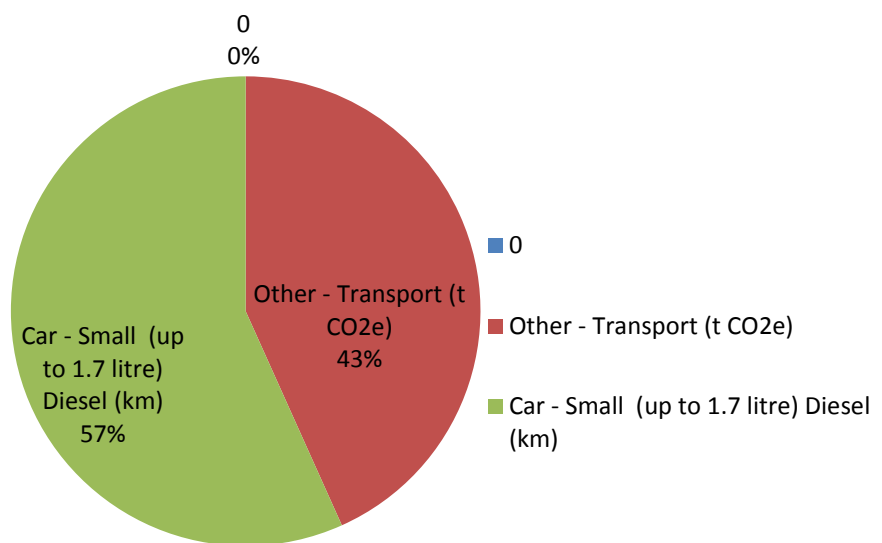
Breakdown of emissions for the baseline year of 2010/11 and associated financial costs.

	Total Co2 emissions tonnes	Buildings	Transport	Waste	Water
Baseline CO2 equivalent	4258	4055	44	149	10
Baseline Cost (£)	831944	788044	8726	35223	49767

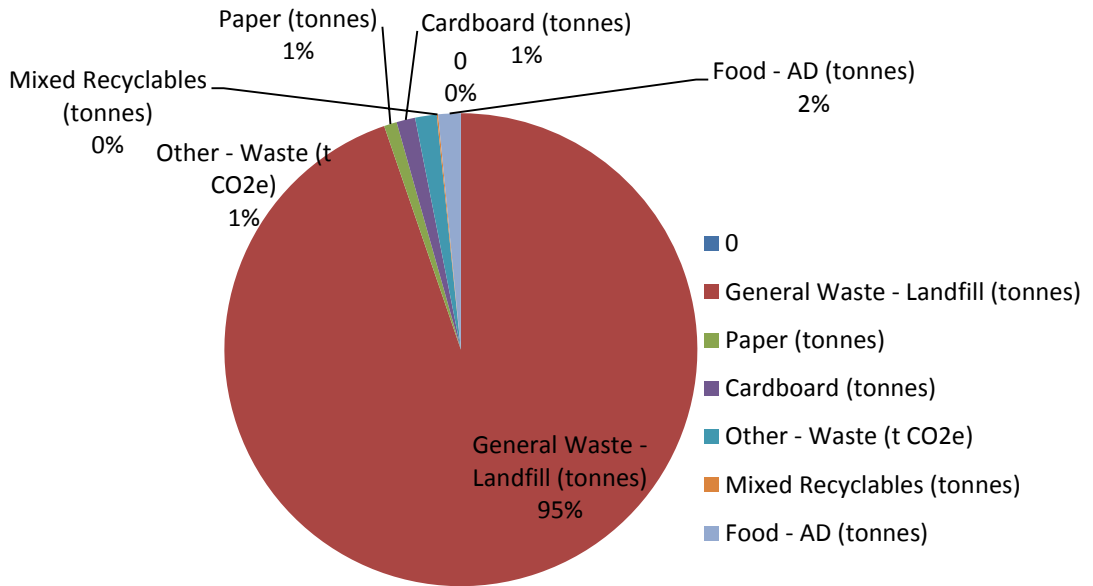
## Baseline Carbon Footprint by Emissions Type - Buildings



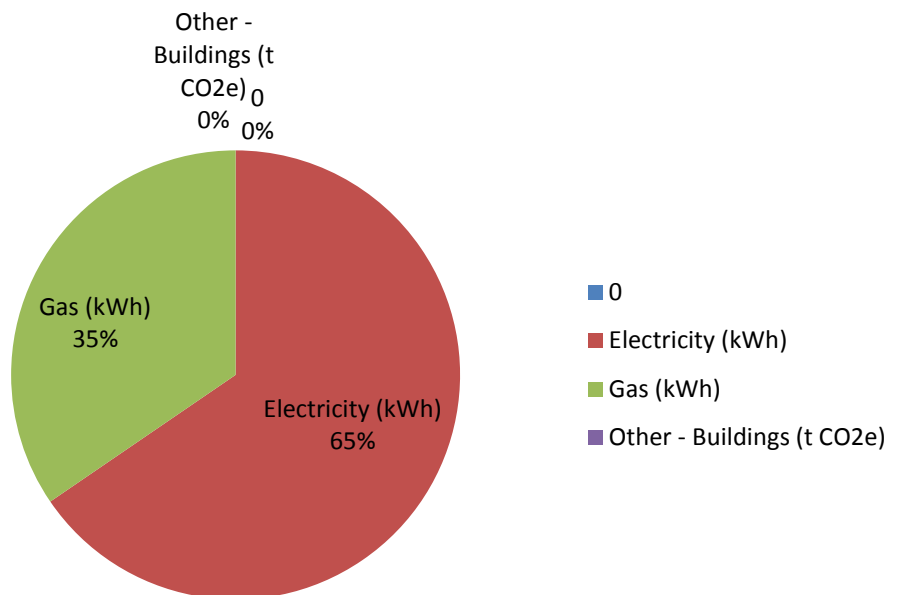
## Baseline Carbon Footprint by Emissions Type - Transport



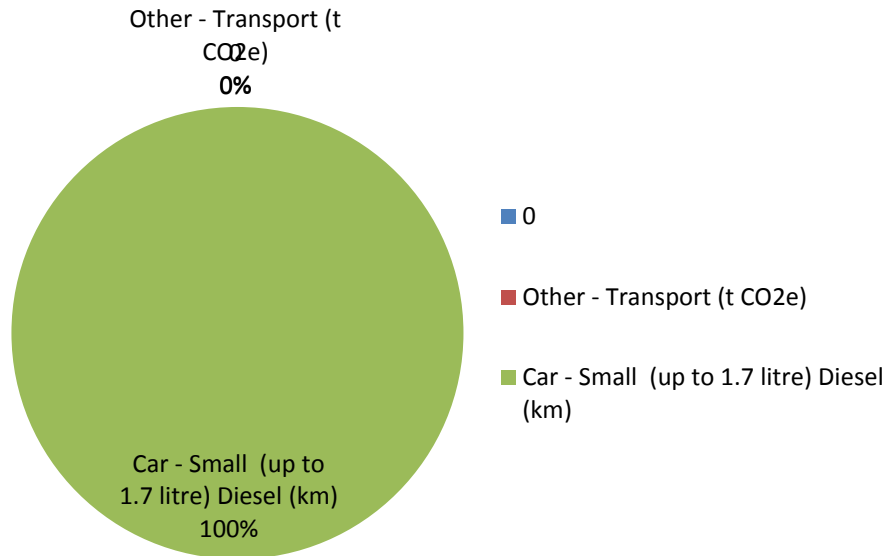
## Baseline Carbon Footprint by Emissions Type - Waste



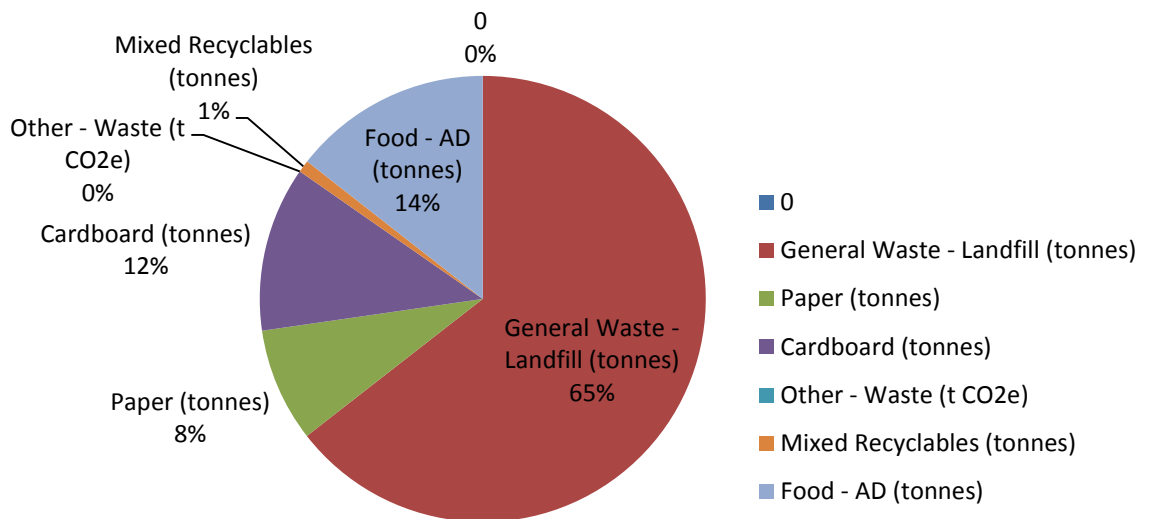
## Baseline Cost by Emissions Type - Buildings



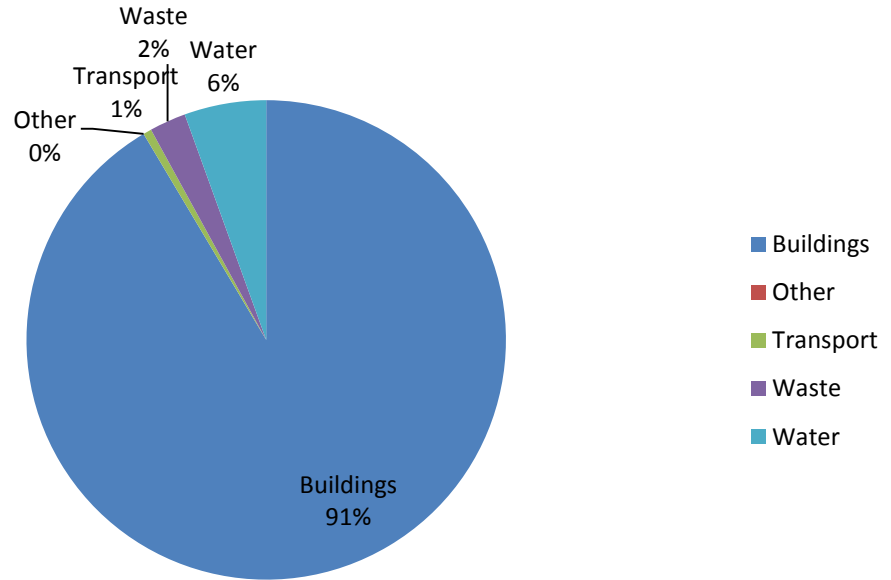
## Baseline Cost by Emissions Type - Transport



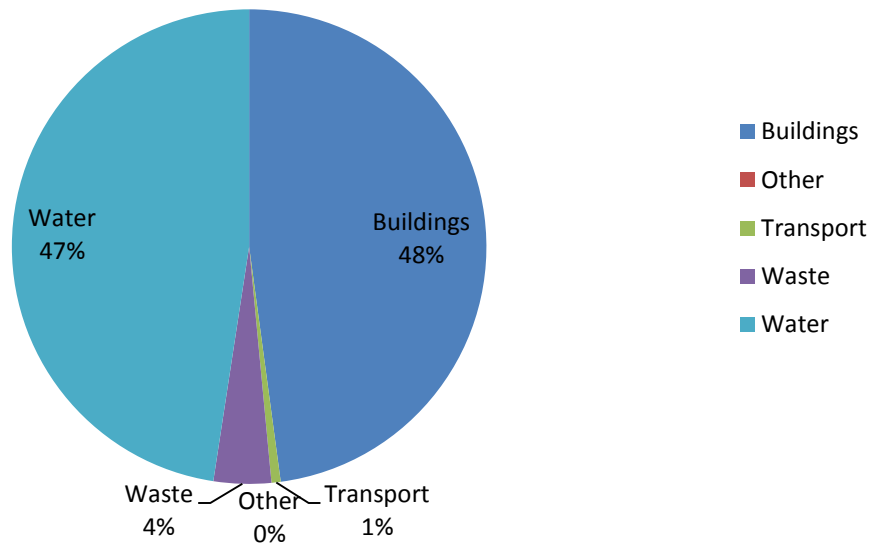
## Baseline Cost by Emissions Type - Waste

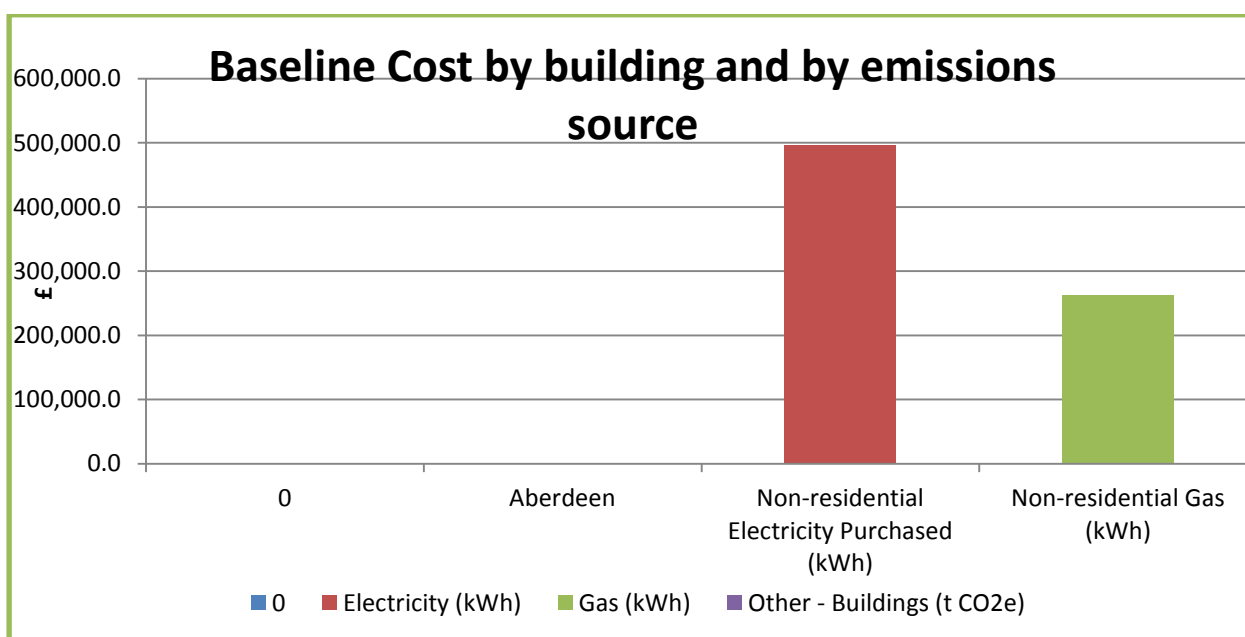
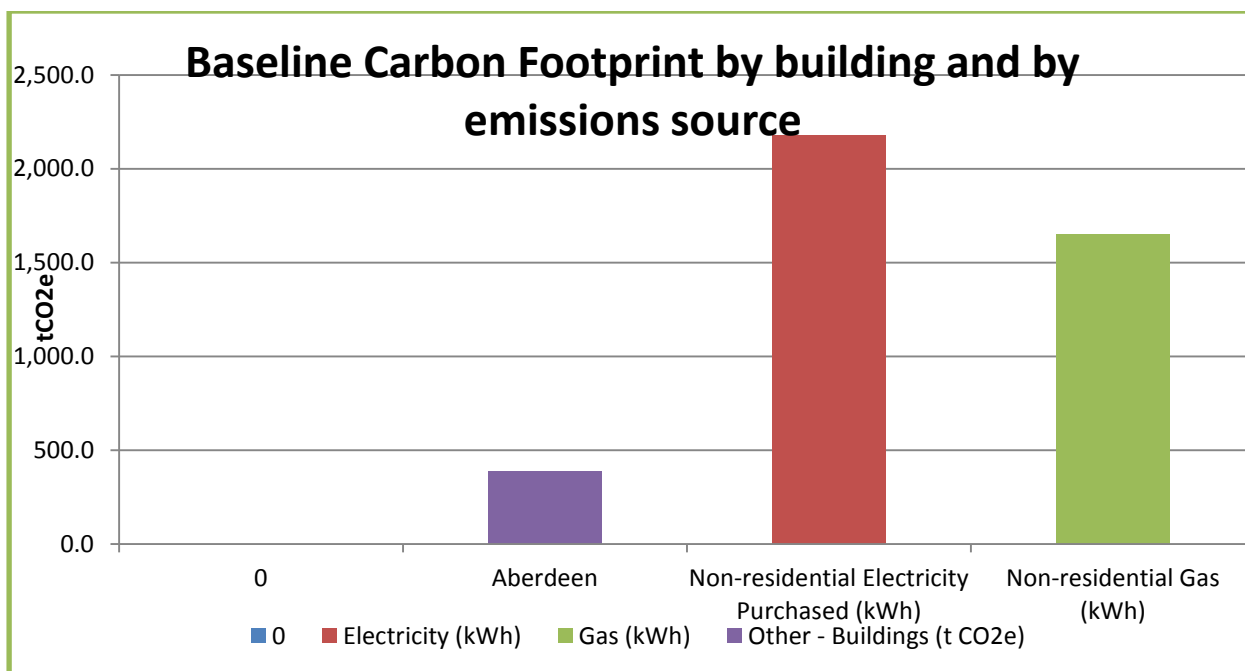


### Baseline Split by Emissions Source - Baseline Carbon Footprint



### Baseline Split by Emissions Source - Baseline Cost





Base Line Emissions 2010/11 kg CO2-e	% reduction	Projected Emissions AY2019/2020 kg CO2-e
4,258,139	15	3,619,818.2

By far the greatest contributor to the organisation's carbon footprint is electricity, this is followed by natural gas. Emissions from energy from gas oil, fleet transport, waste to landfill and water consumption together account for less than 2% of the total footprint. Therefore reducing energy consumption in buildings should be seen as a priority area for action. However, reductions achieved in all categories will contribute to an overall decrease in North East Scotland College's total carbon footprint.



The table below compares the breakdown of the total carbon footprint by category of emission source between the 2009/10 and the 2012/13 footprints.

Comparison between 2009/10 and 2013/14 carbon footprints

Category	2010/11 carbon footprint (tCO <sub>2</sub> e)	2012/13 carbon footprint (tCO <sub>2</sub> e)
Water	9.12 (0.2%)	12.90 (0.3%)
Building	4,441.50 (97%)	4,413.96(98%)
Transport	48.75 (1.1%)	31.31 (0.7%)
Waste	77.62 (1.7%)	45.42 (1%)
<b>TOTAL</b>	<b>4,577.00</b>	<b>4,503.60</b>

### 3.1.7 Future carbon foot printing

#### 3.1.7.1 Organisational processes

North East Scotland College aims to expand the operational boundary of the carbon footprint in the future to include emission sources currently excluded such as Business Travel using public transport. This will further improve the accuracy of the calculated footprint and enable better measurement of progress in emission reduction. Currently, any progress made by the organisation in reducing emissions from excluded sources will not be reflected in a reduced carbon footprint.

As a College we believe that one of the keys to the successful attainment of its carbon reduction target is recognition of the different drivers and needs that impact on the component parts of the organisation's carbon footprint. Transparency of responsibility and accountability at a departmental level for the ongoing delivery and monitoring of core activities and carbon reduction projects will be necessary to deliver the targets within this CMP.

The College will utilise and work alongside its current EMS ISO14001 accreditation to ensure that progress monitoring will be both streamlined and consistent, with key responsibilities for data reporting clearly defined; where required, corrective actions will be implemented in a timely manner.

#### 3.1.7.2 Carbon and Waste: the Carbon Metric

The carbon footprint in this CMP has been produced using the inventory or territorial methodology for calculating the carbon emissions associated with the organisation's activities as recommended in the 2013 Defra/DECC guidelines. This means the emissions included are those arising within a defined boundary; for waste these comprise the onward transportation of the waste and some processing/process emissions.

However, carbon emissions can also be calculated using a consumption based approach. This is the method used in the Scottish Government's Carbon Metric. Based on life cycle analysis or life cycle thinking, this assigns all the life cycle emissions associated with a product to its consumer regardless of where those emissions arise. This means that the emissions associated

with the products production as well as those from its disposal are included. Because the whole life cycle is looked at, the disposal method may increase the total emissions (e.g. landfill) or reduce them (e.g. recycling).

Whilst here is currently no mandatory requirement for measuring the carbon impact of waste, the Scottish Government will be using the Carbon Metric tool to provide the carbon factors for reporting waste in future Scottish Government's Public Sector Sustainability Reporting.

**14. Projections and BAU**

Analysis of projected emissions and the expected impact of BAU allow an evaluation of how the organisation's carbon emissions will change over time in terms of tCO2e emitted and cost.

The results of the BAU analysis help to explain what is happening in the short and long term, what is happening to different parts of the footprint e.g. gas and electricity, and the current importance of the grid emission factor forecast, including the level of uncertainty in relation to this beyond a certain point.

**Value at Stake Analysis**

**Carbon Footprint (tonnes of CO2e)**

**Business as Usual Scenario**

	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
BAU Scenario Total	4,610	4,858	4,858	4,858	4,858	4,858
Cumulative Total	4,610	9,468	14,325	19,183	24,041	29,898

**Value at Stake Analysis**

**Carbon Footprint (tonnes of CO2e)**

**Reduced Emissions Scenario**

	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
RES Scenario Total	4,610	4,514	4,420	4,328	4,238	4,149
Cumulative Total	4,601	9,124	13,544	17,872	22,110	26,259

Figure 1 below shows the expected BAU from 2013/14 against an ongoing target reduction of 15% over 5 years to 2018/19. The area under the two lines ('BAU' and 'target') represents the savings to be achieved and is called the Value at Stake (VAS); in this CMP, the carbon VAS is approximately 3,639 tCO2e.

**Carbon Value at Stake**

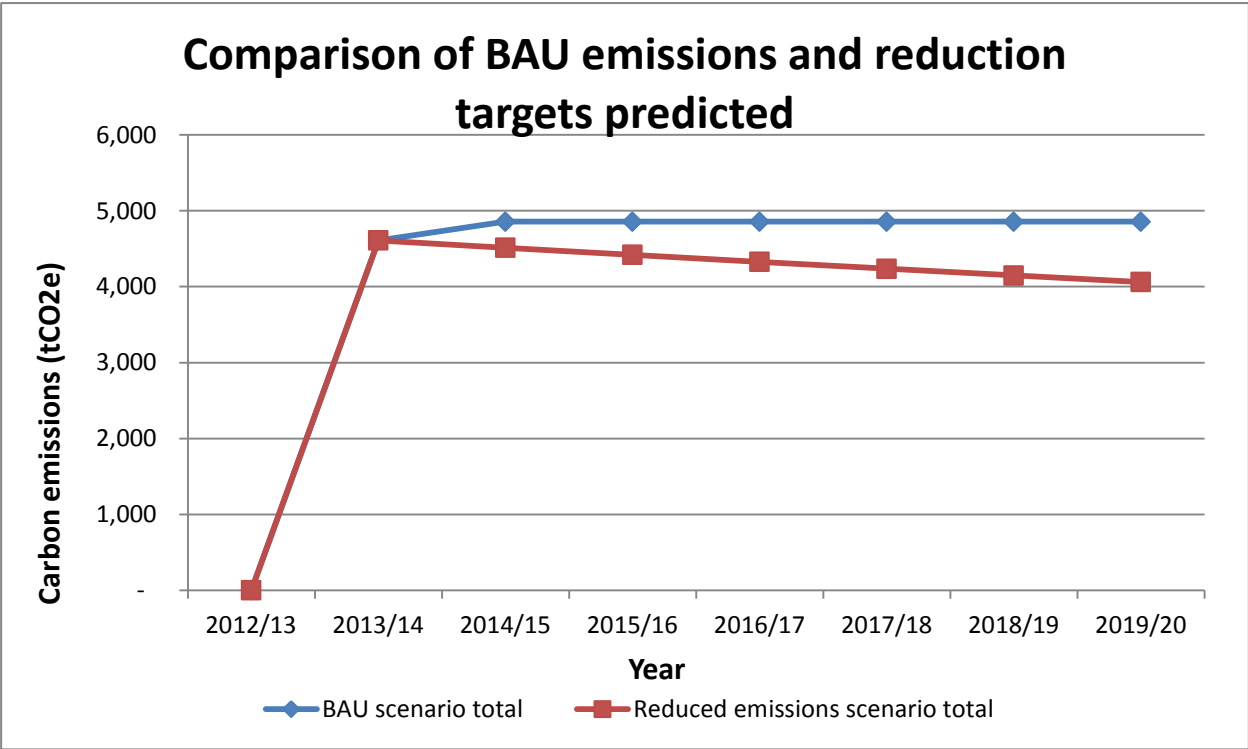


Figure 1: Value at Stake - carbon emissions against target

**Value at Stake Analysis**

**Cost (£)**

**Business as Usual Scenario**

	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
BAU Scenario Total	1,585,262	1,637,578	1,692,315	1,749,606	1,809,591	1,872,421
Cumulative Total	1,585,262	3,222,841	4,915,156	6,664,761	8,474,535	10,346,774

## Value at Stake Analysis

### Cost (£)

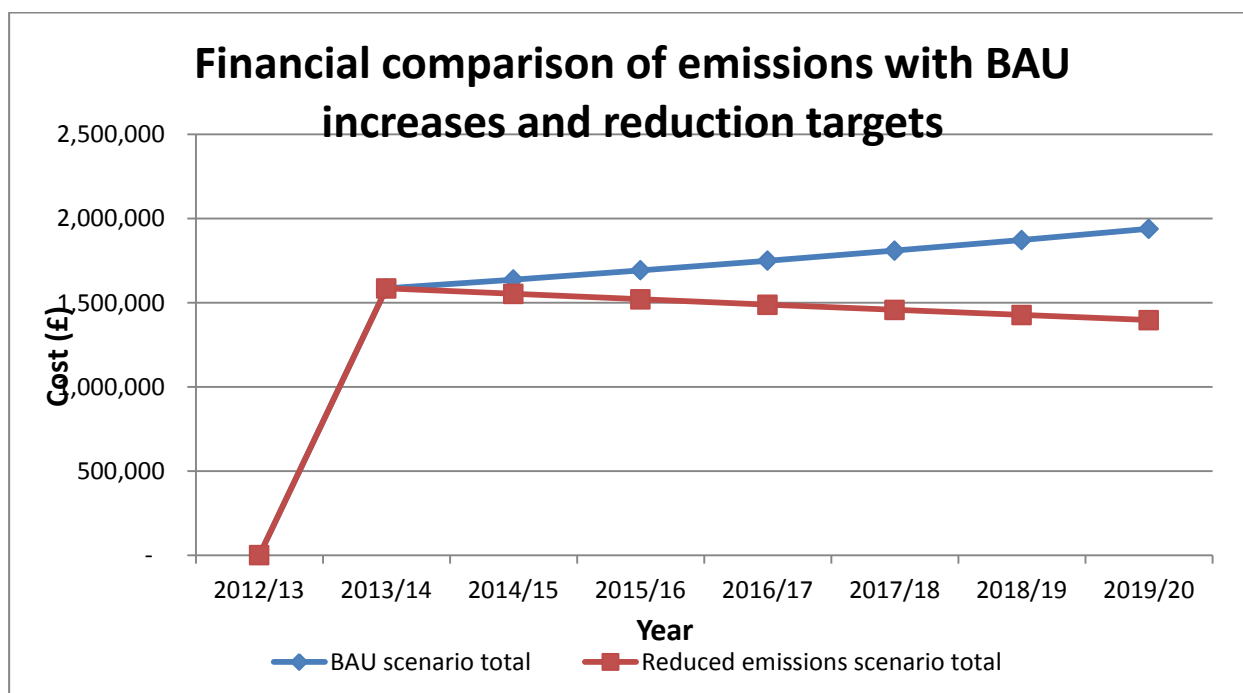
#### Reduced Emissions Scenario

	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
RES Scenario Total	1,585,262	1,552,207	1,519,841	1,488,150	1,457,120	1,426,736
Cumulative Total	1,585,262	3,137,470	4,657,311	6,145,460	7,602,580	9,029,316

The prediction shows that the five year Business as Usual (BAU) cumulative cost to North East Scotland College is £8,474,535 compared to a Reduced Emissions Scenario of £7,602,580, hence, carbon reduction initiatives must become a key priority for the College.

A year on year breakdown is also provided below.

#### Financial Value at Stake



The lifespan of the CMP is 5 years with the aim of reducing our CO<sub>2</sub> emissions by 15% by July 2020. The additional benefits of the CMP are that we will be managing our energy usage and moving towards more sustainable energy sources.

The baseline tool helps show the difference between carrying on in the way we worked in our baseline year 2010/11 (Business as Usual BAU) for the next five years compared with the projected outcome of the CMP. This difference is referred to as the "Value at Stake".

The projections are a useful tool to explain why the CMP is important as they show not just the savings made each year, but the "Value at Stake" both in terms of CO<sub>2</sub> emissions and finance.

Projections and Value at Stake figures are used to highlight the difference between the 'Business as Usual' scenario and the target of reducing our carbon emissions by 15% by 2020.

With predicted changes in the Grid emission factor, even if the organisation does not take action to reduce carbon emissions, they will still gradually fall over time; this is particularly pertinent for North East Scotland College as a significant proportion of the footprint results from electricity consumption. Changes in estate bring on stream new energy-intensive buildings and replace old stock, however the trend is still an overall reduction in emissions.

Altens:

October 2010 - Opening of M Block

2011 – Further major upgrade of M Block to rectify the heating problems and add additional heating.

July 2011 - ASET transfers from Minto Avenue to Altens; Abcol Platform refurbished, extended and recommissioned. ASET now included in consumption readings for all utilities.

Gallowgate:

December 2011 – Changed from oil boilers to gas boilers; oil no longer used at Gallowgate therefore impacting on gas usage.

August 2011 – Basement Refurbishment. Plant designed to meet requirements of studios with additional heating controls, lighting and major air conditioning system.

Gordon Centre:

2011 – Closed and mothballed and provision transferred to Gallowgate and Aberdeen Sports Village

Clinterty:

August 2012 – oil supplies run down preparing for closure. Animal care courses transferred to Craibstone

September 2012 – further oil required to maintain minimal heating throughout buildings

August 2013 - ASET and B-Solutions move into Clinterty requiring recommissioning of workshops, classrooms and offices and general upgrade of building. All building now require to be heated with no Building Management System (BSM) in place no controls are in place and therefore optimal usage and targets will not be achieved.

These, and other, changes, coupled with work to overclad the Gallowgate Tower and East Blocks have a complex and compounded impact on energy and other resource usage which it is not possible (or at least not feasible) to disentangle.

A further complication has been the difficulty in establishing accurate readings for some variables. For example after investigation and comparison with itemised billing it was discovered the energy company had wrongly advised the college on what meter to take readings of gas usage at Gallowgate from for environmental monitoring purposes when the meters were updated in August 2013. This issue has now been rectified and the new figure will be used to go forward with benchmarking targets.

Taken with the fact that we now have to develop plans for the whole of North East Scotland College, combining data from the Fraserburgh and Peterhead campuses (as it becomes available), it is clear that it is an appropriate time to make a fresh start: to establish new baseline

data, to set new achievable targets and to establish comprehensive and robust data collection mechanisms.

Despite this, it is still predicted that, if all carbon reduction projects are implemented as planned, the organisation will potentially see a reduction in their carbon footprint.

## Carbon Management Projects

### 15. Introduction

This section will summarise projects which will help us meet our carbon reduction targets over the lifetime of the Carbon Management Plan. Some of the projects and initiatives have no introductory costs other than those which are already funded. The Carbon Management Plan is a live document so will be updated as and when necessary taking into consideration new projects coming on board.

North East Scotland College  
Carbon Management Plan 2015

16. Project List

Project Description	Location	Capital Spend Year	Commissioning Year	First Full Year of CO2e savings	Capital Cost (£)
oil to gas conversion - Gallowgate	gallowgate	2012/13	2012/13	2013/14	500,00
T5 Lighting - Gallowgate (IT/Library)	gallowgate	2012/13	2012/13	2013/14	22,000
Cavity Wall Insulation - Altens		2012/13	2012/13	2013/14	3,000
Replacement of Boilers - Altens		2013/14	2013/14	2014/15	63,700
Replacement of Roof -Altens		2013/14	2013/14	2014/15	300,000
Replacement of Chillers in IT Centre	gallowgate	2012/13	2012/13	2013/14	60,000
Insulation of Gallowgate, Tower Basement Roof	gallowgate	2012/13	2012/13	2013/14	250,000
Double Glazing Gallowgate	gallowgate	2014/15	2014/15	2015/16	1,000,000
Recladding Project - Gallowgate	gallowgate	2014/15	2014/15	2015/16	3,000,000
Refurbishment and Upgrading of Heating Control Systems	gallowgate	2013/14	2013/14	2014/15	20,000
Air Conditioning/Lighting Upgrade FG13/14	altens	2013/14	2013/14	2014/15	7,900
Art and Design Development - Fraserburgh - Lighting	Fraserburgh	2013/14	2013/14	2014/15	8,550
Art and Design Development - Fraserburgh - Heating	Fraserburgh	2013/14	2013/14	2014/15	10,000
Boardroom Lighting	Gallowgate	2013/14	2013/14	2014/15	2,050
Fitness Suite Development - lighting	Fraserburgh	2013/14	2013/14	2014/15	1,900

February 2015

Version 1

Prepared by Gillian Forshaw, Environmental and Sustainability Manager

Lighting upgrade Blocks D and E Altens	Altens	2013/14	2013/14	2014/15	17,000
Lighting Upgrade Clinterty Workshop	Clinterty	2013/14	2013/14	2014/15	21,935
Motor Vehicle Workshop - lighting	altens	2013/14	2013/14	2014/15	4,000
Fraserburgh Air Conditioning Upgrade	Fraserburgh	2012/13	2012/13	2013/14	10,000
4th Floor Hardware labs - lighting upgrade	Gallowgate	2012/13	2012/13	2013/14	2,000
4Th Floor Hardware labs - heating upgrade	Gallowgate	2012/13	2012/13	2013/14	4,000
Gallowgate Basement Roof Refurb	Gallowgate	2012/13	2012/13	2013/14	200,000
Gallowgate Basement Phase 2 Main - Lighting Upgrade	Gallowgate	2012/13	2012/13	2013/14	40,000
Gallowgate Basement Phase 2 Main - Heating Upgrade	Gallowgate	2012/13	2012/13	2013/14	100,000
Gallowgate Basement Phase 2 - Air Conditioning Units	Gallowgate	2012/13	2012/13	2013/14	3,000
Gallowgate Kitchen refurb - lighting upgrade	Gallowgate	2012/13	2012/13	2013/14	5,000
Gallowgate kitchen refurb - energy efficient appliances	Gallowgate	2012/13	2012/13	2013/14	2,000
Altens B +C Block refurb - lighting upgrade	Altens	2013/14	2013/14	2014/15	40,000
Tool workshop Fraserburgh - lighting upgrade	Fraserburgh	2013/14	2013/14	2014/15	50,000
Tool Workshop Fraserburgh - heating upgrade	Fraserburgh	2014/15	2014/15	2015/16	70,000
Boiler Replacement Fraserburgh/peterhead	Fraserburgh	2014/15	2014/15	2015/16	50,000
Roofing replaced Clinterty	Clinterty	2015/16	2015/16	2016/17	170,000
Fraserburgh master plan (BREEAM)	Fraserburgh	2015/16	2015/16	2017/18	100,000
Energy Monitoring system	Gallowgate/Altens	2015/16	2015/16	2016/17	5,000
Upgrade of spray booths /lighting	Altens	2015/16	2015/16	2016/17	20,000
Energy Monitoring system	Altens	2015/16	2015/16	2016/17	50,000
Upgrade of spray booths /lighting	Altens	2015/16	2015/16	2016/17	20,000
Fraserburgh master plan (BREEAM)	Fraserburgh	2015/16	2015/16	2017/18	100,000



# North East Scotland College Carbon Management Plan 2015

In order to continue achieving emissions reductions North East Scotland College is committed to identifying and implementing carbon saving projects.

Base Line Emissions 2010/11 kg CO2-e	% reduction	Projected Emissions AY2019/2020 kg CO2-e
4,258,139	15	3,619,818.2

North East Scotland College recognises that successful attainment of its carbon reduction targets is contingent upon the following key elements being in place:

- An organisational framework within the organisation that is sufficiently robust to support the financing, delivery and monitoring of carbon reduction projects.
- Clearly identified responsibility and accountability for delivery against carbon reduction targets from the CMP outset.
- Identification of a realistic suite of carbon reduction projects across a range of areas relevant to the carbon footprint; this list must be regularly reviewed and flexible to adapt to emerging needs and opportunities for funding.
- A data collection and collation system that is integrated sufficiently to inform both an annual progress update on the CMP and other Government and associated returns.

In this Section, the term "activities" is applied to the full range of interventions that contribute to emissions reductions. These may include traditional 'projects' such as the installation of voltage optimisation units or low energy lighting. For projects of this nature it is generally easier to predict and subsequently quantify the carbon savings that will be/have been achieved. However, activities may also include interventions such as staff energy awareness training where carbon savings are much harder to predict and subsequently quantify accurately.

## 17. Completed Projects

The following initiatives and projects have already been completed or implemented since the organisation's initial baseline carbon footprint was calculated. The carbon emission savings achieved by these schemes will therefore have already contributed towards North East Scotland College's initial reduction target and corresponding savings are therefore included in the baseline carbon footprint.

### 3.1.8 Energy

Aspect	Action	Responsibility
All sites: - Energy Policy and Management System.	Develop an Energy Policy and associated Energy Management System.	E&S Manager
All sites: - Reduce power consumption of IT systems.	Install power management software to PC. Reduce server numbers through virtualisation Reduce printer power consumption.	IT - MIM
All Sites - Green Energy.	Ensure minimum of 10% Green Energy from supplier.	E&S Manager
All sites: - Halogen Spotlights.	Install halogen spotlights with CFL equivalent where feasible.	E&S Manager
All Sites – Energy Efficiency	Segregate ventilation from lighting circuits in toilets to allow lighting to be switched off if sufficient natural light is present.	E&S Manager
All Sites – Energy Efficiency	Lighting schemes throughout the sites could be investigated to see if extra switching would give added flexibility allowing part rooms to be lit if under occupied.	E&S Manager
Gallowgate - boiler efficiency.	Install optimum start – stop and weather compensation controls.	E&S Manager
Gallowgate - Boiler Efficiency.	Install gas boilers.	E&S Manager
Gallowgate - Presence Detectors.	Install presence detectors in an additional 20 classrooms.	E&S Manager
Gallowgate - Mercury lamps in reception.	Replace mercury lamps in reception with T5 suspended luminaries.	E&S Manager

Gallowgate - T12 Bulbs.	Replace T12 and T8 bulbs to T5 through routine replacement.	E&S Manager
Clinterty - Boiler Efficiency.	Investigate replacing boiler with a high efficiency lower capacity boilers.	E&S Manager
Clinterty - Insulation on hot water storage.	Improve insulation of hot water storage.	E&S Manager
Clinterty - Cavity Walls.	Investigate installation of cavity wall Insulation.	E&S Manager
Clinterty - Roof Insulation.	Investigate improvements in roof insulation.	E&S Manager
Altens - Boiler replacement.	Replace existing gas boilers with new efficient boilers.	E&S Manager
Altens - Heating efficiency.	Investigate installation insulation of external walls where feasible.	E&S Manager
Altens - Improve heating efficiency.	Investigate replacing the Powermatic oil heater with gas radiant heaters.	E&S Manager
Altens - Improve lighting efficiency.	Install T8 lamps with retrofit T5 conversion kit.	E&S Manager
Altens - Improve efficiency of windows.	Investigate replacing/improving glazing and/or frames.	E&S Manager
Altens F Block - Fan Speed.	Investigate adding variable speed drives to fans.	E&S Manager
Altens F Block - Ventilation Systems	Investigate adding heat recovery to supply and extract ventilation systems.	E&S Manager
Altens F Block - Ductwork leakage is high.	Inspect and seal ductwork.	E&S Manager

Workshop Areas	Where feasible fit clear plastic drapes to large roller doors to prevent heat loss in workshops when doors left open.	E&S Manager
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### 3.1.9 Travel/Transport

Aspect	Action	Responsibility
All Sites - Video Conferencing.	Encourage video conferencing between centres.	Technical Manager All Managers
All Sites - Travel Plans.	Develop site specific Travel Plans for all College sites in conjunction with NESTRANS.	E&S Manager
All Sites - Cycle Storage.	Install cycle lockers for pilot scheme at Gallowgate Centre.	E&S Manager

### 3.1.10 Waste

Aspect	Action	Responsibility
All Sites - Reuse of current items before new ones are procured.	Create a store next to the Mailroom where items which can be advertised internally for reuse e.g. stationery, office furniture etc. Before and stationery orders can be raised the store must first be checked.	E&S Manager
All Sites - Printers.	Set printers to double side printing where possible. Restrict printer purchase to duplex models.	IT - MIM
All Sites - Photocopiers.	Set photocopiers to print double sided where possible. Review existing photocopiers.	E&S Manager
All sites - Printing Limitations.	Allocate printing limits to each department.	E&S Manager
All Sites - Use of scanners.	Encourage staff to scan documents where appropriate if no electronic copy is available and if copyright permits.	IT - MIM

Aspect	Action	Responsibility
All Sites - Recycling.	Install Separation Stations and advertise.	E&S Manager
All Sites - Management of skips.	Ensure all skips are clearly labelled.	E&S Manager
All Sites - Office recycling.	Install separation bins in all offices.	E&S Manager

## 18. Project Register

The Project Register is a tool used to support North East Scotland College with the recording of carbon reduction project data, calculation, and the analysis and reporting of progress against the carbon reduction target.

The tool was populated with North East Scotland College's 2009/10 footprint figure, reduction target and project information in order to identify whether the organisation will meet its reduction targets and where applicable the quantity of additional emission savings required to enable reduction targets to be met.

The project register is a 'live' tool for the organisation to retain ownership of and continue to update regularly to allow tracking of progress of carbon emission reductions.

## 19. Projected Achievement towards Target

### 20. Implementation

The Carbon Management Plan will be implemented from February 2015 with some of the current and on-going projects being taken into consideration in the overall carbon reduction goal.

#### 5.1 Financing

The financing of environmental initiatives will be based on the principle of "spend to save". For each initiative a business case must be produced which demonstrates an acceptable return on the investment made based on a whole lifecycle approach. The two key financial measures that help form the business case will be the payback period and the discounted net present value. Initiatives will be prioritised based on these financial measures and the funding available. Funding will be self-financing. Initial funding will be made available in the financial year 2014/15 for investment; future funding will be generated by the cash savings from these initial investments. Senior management has pledged that savings gleaned from such initiatives shall be ring-fenced. This will allow cashable savings to be gathered in the form of a spend-to-save rotating fund, where the savings from funded projects will pay back into the fund, thus enabling future initiatives to receive the funds required for implementation.

Assumptions made include:

- The cost of gas/electricity ratio will remain as a constant.
- The College's current capital funding mechanisms remain in place.
- The plan shall be self-financing, early initiatives must be self-funded within the same financial year or have no cost attached, i.e. car sharing.

- It is assumed that energy costs will rise significantly above inflation over the life of the plan.
- Initiatives shall be risk-assessed prior to implementation; in relation to finance this shall prevent any unexpected adverse effect on budgets.
- North East Scotland College purchases gas and electricity through national suppliers. This arrangement is contractual and a premium would have to be paid to move all of our buildings over to renewable electricity. This plan assumes no change to this arrangement over the next five years.
- The plan and certain of the figures in the plan depend upon the calculations provided by the Carbon Trust.

#### 20.1.1 Benefits / savings – quantified and un-quantified

The benefits are listed in the Implementation Plan. The un-quantified benefits may be described as follows:

- Meeting the requirements of the Climate Change (Scotland) Act 2009
- Demonstrating our commitment towards protecting the environment to our staff, the public & our partners.
- Widening our appeal to potential employees
- Demonstrating the organisation as a sustainable employer
- Reducing overhead costs
- Management of climate change risk within the organisation

#### 20.1.2 Risks and issues

The College has considered and evaluated the risks and issues which need to be considered in relation to the CMP. We have looked at the probability and carried out an impact assessment to identify the necessary risks and the subsequent actions which can be taken to mitigate them. We have prioritised these risks and identified the actions which must be taken throughout the implementation of the CMP. The table below highlights these risks:

Description	Impact	Probability	Mitigating Actions
1.The Project Lead has insufficient time, resulting in tasks slipping and the project not being completed on schedule	H	M	Resource for PL to be supported by line management, and Ensure a deputy PL is engaged from the start.
2.There is insufficient funding for the project	H	M	Value at stake figures should be presented as soon as possible To Senior Management Team
3.Project sponsor has insufficient time to lead project	H	M	Meet with PS to discuss role Ensure CMP review meetings are in PS's calendar, and Seek Carbon Trust support, if required.
4. Key parts of organisation to not actively participate in	M	M	PS to engage formally with Senior Management Team Seek Carbon Trust support, if required.

Description: A text description of the potential problem [or the existing problem in the case of an issue] and what the result would be  
 Impact: A subjective evaluation of the scale of the impact of the risk, should it happen - high [H], medium [M] or low [L]

Probability: A subjective evaluation of how likely the risk is to occur - high [H], medium [M] or low [L], or I if it is a current issue

Mitigating actions: Who will take what action and by when, to manage the risk.

## **20.2 Governance for Implementation**

### **20.2.1 Embedding Carbon Management**

In order to build upon the commitment which Aberdeen College have already demonstrated to help meet our aim we intend to:

- Further embed carbon management into our performance management process
- Report quarterly energy usage figures for our buildings on public screens
- Implement a training and awareness programme on Carbon Management.
- Make use of our intranet to raise the profile of carbon reduction within the College
- Further embed carbon management into our strategic planning and priorities
- Set departmental targets and appraise progress against them with sector managers

### **20.2.2 Data Management – measuring the difference, measuring the benefit**

The Environmental and Sustainability Manager (ESM) has developed a data sheet which is completed monthly by the Facilities department capturing the College's key carbon performance indicators. This data is analysed monthly at Climate Change Action Plan (CCAP) meetings. The data gathered will be used to plot progress against set targets. The benchmark data is shown as whole year data. Monthly data was used to compile the annual figures. This data provides monthly benchmarking data to more effectively monitor progress towards target and measure the impact of projects and initiatives. To support the monitoring of performance against target a system of monthly recordings and readings has been put in place to support the process of improving the environmental performance of the College.

## **20.3 Resource commitment**

The overall leadership within North East Scotland College in relation to the CMP has been allocated to the Environmental and Sustainability Manager.

On an annual basis the Environmental Management System and Climate Change Action Plan will be evaluated by the Management Review Group. The purpose of this evaluation will be to assess progress against the Environmental Performance Benchmarking Data and Targets, recalculate the College's Carbon Footprint and determine changes to the Action Plan in light of performance and changed circumstances.

The College's Environmental Management System within the Roles and Responsibilities statement clearly sets out the responsibility of individuals within the College.

Roles and Responsibilities Document

A clearly defined document has been published defining roles, responsibilities and authorities facilitating effective environmental management.

### **College Board of Management**

Responsibility:

1. Has the ultimate responsibility for Environmental and Sustainability issues in the organisation and is responsible for:
2. Ensuring the establishment and development of an effective Environmental Policy Statement.
3. Ensuring the establishment and operation of an effective organisation to meet the objectives of the Policy.
4. Maintaining individual awareness of the effectiveness and operational organisation of the Environmental Policy at Board meetings.

### **Principal & Chief Executive**

Responsibility:

1. Has responsibility for the day to day application of the Environmental and Sustainability requirements placed by the College Board.
2. Will ensure adequate resources are provided for the effective management of competent Environmental and Sustainability applications in all College activities.
3. Will ensure suitable and efficient procedures are immediately applied to address and rectify any breaches of the Environmental Policy arrangements of the College.
4. Will ensure the College Board is kept aware of Environmental and Sustainability applications within all College activities and competent advice on all environmental requirements is available to the Board as required.
5. Will ensure an annual report on the performance of Environmental and Sustainability applications is provided to the College Board.

### **Vice Principals**

Responsibility:

1. Will ensure that all activities within their designated area of their responsibility are carried out in compliance with the Environmental and Sustainability arrangements as contained within the Environmental Policy Statement.

### **Environmental and Sustainability Manager**

Responsibility:

1. Will have overall responsibility for the implementation and maintenance of the College's Environmental Management System BSI ISO14001 ensuring continual improvement can be demonstrated throughout the process.
2. Will monitor energy use, waste, transport, photocopying and printing and record data on a monthly basis.
3. Will ensure all staff are provided with Environmental and Sustainability information as part of their induction and throughout the year as part of the Colleges mandatory training process.



4. Will oversee all other areas of responsibility and provide guidance and advice as and when required.

### **Heads of School**

Responsibility:

1. Will ensure that appropriate methods are adopted so all their staff know and accept their individual responsibilities as contained in current applicable Environmental Legislation and those specifically detailed in the College Environmental Policy Statement.
2. Will adopt appropriate management techniques to manage Environmental and Sustainability within the school with the same commitment as other management functions i.e. budget management, student retention etc.

### **Faculty Managers**

Responsibility:

1. Will effectively manage the application of Environmental and Sustainability issues within the school/team and ensure that College procedures are adhered to.

### **Curriculum and Quality Managers/ Lecturers/ Instructors**

Responsibility:

1. Will ensure students are given all relevant Environmental and Sustainability information pertaining to their particular location and/ or activity.

### **Human Resources Manager/ Organisational Development**

Responsibility:

1. Will arrange for appropriate staff training in accordance with the requirements of applicable Environmental Legislation.
2. Will support and deliver various methods of training provision in response to recommendations made by the Environmental and Sustainability Manager.
3. Will include appropriate Environmental and Sustainability aspects within the staff induction programme for all new staff.

### **All Line Managers/Supervisors**

Responsibility:

1. Will ensure Environmental and Sustainability application is effectively managed within their relevant functional area and all staff under their control know and accept their responsibilities as contained in the College Environmental Policy Statement.

### **All Employees**

Responsibility:

1. Are required to comply with their responsibilities under Environmental and Sustainability related legislation and College policies and procedures.
2. Will complete mandatory Environmental and Sustainability Training

- Will participate in any further training given to promote Environmental and Sustainability requirements.

## Facilities Management

### Responsibility

- Will adopt appropriate methods to ensure that all staff under their control know and understand their responsibilities regarding Environmental and Sustainability issues.
- Will establish the organisation to ensure all required applicable statutory records are maintained and establish/maintain suitable procedures in line with Environmental and Sustainability matters.
- Will record and maintain all waste transfer notes, waste carrier licences, LEV maintenance checks etc for the required timescales.

**20.3.1** Will record waste tonnages, energy and water use and college vehicles on a monthly basis and make this information available to the Environmental and Sustainability Manager. Implementing the Initiatives

## Resources

The implementation of the plan falls under the following key headings and responsibilities which are linked to main budget headings within the College. The plan will be used to prioritise the spending in those key areas utilising exiting allocated budgets in the main:

Theme	Projects	Responsible Persons	Budget Source
Energy Consumption and Source.	Project 1: Improve efficiency of water use. Project 2: Improve efficiency of energy use.	<ul style="list-style-type: none"> <li>Environmental and Sustainability Manager.</li> </ul>	<ul style="list-style-type: none"> <li>Facilities Management.</li> <li>Capital works and projects.</li> <li>Information Technology.</li> </ul>
Waste Reduction, Separation and Responsible Disposal.	Project 3: Reduce paper consumption Project 4: Increase separation rates.	<ul style="list-style-type: none"> <li>Environment and Sustainability Manager</li> </ul>	
Sustainable Estate and Biodiversity.	Project 5: Ensure sustainable development and environmental management are integral in to the design, construction and occupancy of new and refurbished	<ul style="list-style-type: none"> <li>Environment and Sustainability Manager.</li> </ul>	<ul style="list-style-type: none"> <li>Facilities Management.</li> <li>Capital works and projects.</li> </ul>

	buildings. holding.		
Sustainable Travel Planning.	Project 7: Reduce vehicle mileage	<ul style="list-style-type: none"> <li>• Environment and Sustainability Manager.</li> <li>• All managers.</li> <li>• Technical Manager.</li> </ul>	<ul style="list-style-type: none"> <li>• Multimedia.</li> </ul>
Responsible Procurements of Goods and Services.	Project 8: Review the College's supply chain to establish the environmental performance of suppliers and contractors.	<ul style="list-style-type: none"> <li>• Environment and Sustainability Manager.</li> <li>• Purchasing Manager.</li> <li>• Health and Safety Manager.</li> </ul>	<ul style="list-style-type: none"> <li>• Change of practice and emphasis.</li> </ul>
Learning and Teaching.	Project 9: Sustainable development education. Project 10: Sustainable development education in curriculum areas.	<ul style="list-style-type: none"> <li>• Environment and Sustainability Manager.</li> <li>• Head of Learner Services.</li> <li>• Vice Principal (Human Resources).</li> <li>• Sector/Department Managers.</li> <li>• Sector Manager – Engineering and Construction.</li> </ul>	<ul style="list-style-type: none"> <li>• Change of practice and emphasis.</li> </ul>

### 20.3.2 Maintaining quality over time

There will be a need to maintain and revise the plan, coming up with new initiatives on a regular basis. The Carbon Management Plan will be reviewed every 2 years and shall remain a live document over the 5 year period it is scheduled to run.

The Climate Change Action Plan Group will aim to:

- be a peer group for discussion across college to support the delivery of Carbon Management Plans
- be a focus for dissemination and exchange of information on practical advice to help meet emission targets
- ensure that good practice from projects and activities within college are shared and promoted
- share and discuss how best to achieve targets
- To draw upon the expertise of, and provide objective feedback to, the College

### 20.3.3 Programme Management of the CM Programme

The overall leadership within Aberdeen College in relation to the CM Programme has been allocated to the Environmental and Sustainability Manager and Facilities Manager.

The overall roles and responsibilities are outlined below.

ORGANISATION	RESPONSIBILITY
College Board of Management	<p>Has the ultimate responsibility for Environmental and Sustainability issues in the organisation and is responsible for:</p> <ol style="list-style-type: none"> <li>1. Ensuring the establishment and development of an effective Environmental Policy Statement.</li> <li>2. Ensuring the establishment and operation of an effective organisation to meet the objectives of the Policy.</li> <li>3. Maintaining individual awareness of the effectiveness and operational organisation of the Environmental Policy at Board meeting.</li> </ol>
Principal & Chief Executive	<ol style="list-style-type: none"> <li>1. Has responsibility for the day to day application of the Environmental and Sustainability requirements placed by the College Board.</li> <li>2. Will ensure adequate resources are provided for the effective management of competent Environmental and Sustainability applications in all College activities.</li> <li>3. Will ensure suitable and efficient procedures are immediately applied to address and rectify any breaches of the Environmental Policy arrangements of the College.</li> <li>4. Will ensure the College Board is kept aware of Environmental and Sustainability applications within all College activities and competent advice on all environmental requirements is available to the Board as required.</li> <li>5. Will ensure an annual report on the performance of Environmental and Sustainability applications is provided to the College Board.</li> </ol>
Associate Principals	<ol style="list-style-type: none"> <li>1. Will ensure that all activities within their designated area of their responsibility are carried out in compliance with the Environmental and Sustainability arrangements as contained within the Environmental Policy Statement.</li> </ol>
Sector Managers	<ol style="list-style-type: none"> <li>1. Will ensure that appropriate methods are adopted so as all persons under his/her control know and accept their individual responsibilities as contained in current applicable Environmental legislation and those specifically detailed in the College Environmental Policy Statement.</li> <li>2. Will adopt appropriate management techniques to manage Environmental and Sustainability within the sector with the same commitment as other management functions i.e budget management, student retention etc.</li> </ol>

Team Managers	1. Will effectively manage the application of Environmental and Sustainability issues within the sector/team and ensure that College Environmental and Sustainability procedures are adhered to.
Curriculum Leaders/ Lecturers/ Instructors	1. Will ensure students are given all relevant Environmental and Sustainability information pertaining to their particular location and /or activity.
Staff Development Manager	1. Will arrange for appropriate staff training in accordance with the requirements of applicable Environmental legislation and as individual staff Continuing Professional Development. 2. Will arrange various methods of training provision in response to recommendations made by the Environmental and Sustainability Manager. 3. Will include appropriate Environmental and Sustainability aspects within the staff induction programme for all new staff.
Environmental and Sustainability Manager	1. Will contribute to the establishment, implementation and maintenance of an environmental management and sustainability (EMS) system, which includes monitoring of energy reduction and recycling methods, in line with acceptable standards. 2. Will provide training and advice to staff, and students where appropriate, in relation to environmental and sustainability issues.
All Line Managers/ Supervisors	1. Will ensure Environmental and Sustainability application is effectively managed within their relevant functional area and all staff under their control know and accept their responsibilities as contained within the College Environmental Policy Statement.

#### **20.3.4** The Programme Board– strategic ownership and oversight

The senior management team will act as the project board and have responsibility for the strategic direction and implementation of the CMP.

#### **20.3.5** The Carbon Management Team – delivering the projects

A Climate Change Action Plan (CCAP) Implementation Group will as part of its remit plan and monitor the implementation and assess the impact of the CM Programme, Environmental Management System and Climate Change Action Plan and report to the College's Environmental Sustainability Group on a regular basis. The CCAP will meet on a monthly basis chaired by the Environmental and Sustainability Manager.

To support the monitoring of performance against target a system of monthly recordings and readings has been put in place to support the process of improving the environmental performance of the College.

On an annual basis the Carbon Management Programme, Environmental Management System and Climate Change Action Plan will be evaluated by the Management Review Group. The

purpose of this evaluation will be to assess progress against the Environmental Performance Benchmarking Data and Targets, recalculate the College's Carbon Footprint and determine changes to the Action Plan in light of performance and changed circumstances. All actions will form part of the Climate Change Action Plan (CCAP).

Table 1 below sets out the main individuals and committees that lead, inform and monitor the Carbon Management Plan.

Role in CCAP	Name	Position
CCAP Lead	Ms Gillian Forshaw	Environmental and Sustainability Manager
Management Review Group	Mr Rob Wallen	Principal
	Mr Roddy Scott	Vice Principal, Finance
	Ms Elaine Hart	Vice Principal, Human Resources
	Ms Sandra Walker	Vice Principal, Curriculum
	Mr Paul Sherrington	Deputy Principal
	Mr Neil Cowie	Vice Principal, Organisational Services
	Ms Gillian Forshaw	Environmental and Sustainability Manager
Facilities Management/ Environmental Group	Gillian Forshaw	Environmental and Sustainability Manager
	David Simpson	Facilities Manager
	Colin Beattie	Health and Safety Manager
	Mike Wilde	Facilities Client Services Manager

### 20.3.6 Succession planning for key roles

The College is committed to delivering the CMP, which is a formal deliverable to the Carbon Trust. Therefore, the key roles relate to posts rather than individuals and as such the duties shall be incumbent upon the post holders rather than with individual personnel.

This CMP aims to achieve a 638320.8 tCO<sub>2</sub>e (15%) reduction on the 2010/11 carbon footprint by 2020.

Base Line Emissions 2010/11 kg CO <sub>2</sub> -e	% reduction	Projected Emissions AY2019/2020 kg CO <sub>2</sub> -e
4,258,139	15	3,619,818.2

## 21. Developing Targets

The analysis shows that, with the current projects in place, carbon emissions will decrease throughout the duration of the CMP, although progress is slowed by the commissioning of energy-intensive new buildings.

There are proposed potential major estate changes at Fraserburgh Campus and these could impact on the organisation's ability to achieve its carbon reduction target.

Some carbon reduction projects within the Project Register do not as yet have any carbon savings quantified; the majority of North East Scotland College's significant proposed projects do, however, have a quantified carbon reduction value, thus it is likely that these few projects remaining un-quantified will not significantly alter the outcomes of this CMP.

The associated cost will increase (significantly with CRC if it is continued). Although the organisation has no control over utility, petrol, waste and water costs (limited through procurement choices), it can control the amount of each used. In order to reduce the VAS financial burden, North East Scotland College must reduce the amount of carbon emissions.

## 4 Carbon Management Plan Financing

### 22. Introduction

North East Scotland College does not specifically have capital funding approved by the Finance Committee for carbon management projects but this is taken into consideration for every project that is put forward and funds allocated as required. Environmental considerations are taken into full consideration when deciding upon a programme of Capital Works and Minor Works Programme.

This Section is based on the detailed financial analysis carried out against the projects discussed above and will draw on information input into Project Register.

### 23. Assumptions

**Costs:** Actual costs have been used for projects that have already started and supplier quotes for planned projects. Where supplier quotes were not available, quotes for similar projects have been used (e.g. costs for one boiler replacement based on quote for another boiler replacement).

**Cost saving:** Cost saving were calculated using the utility costs in the organisation's baseline carbon footprint and assumed energy savings.

**Carbon saving:** Calculated carbon savings were derived using assumed energy savings (as outlined above) and Defra's emission factors.

The key assumptions made in calculating the benefits and savings are:

- The unit price of gas and electricity over the next 5 years.
- Project capital requirements and financial and CO2e savings are based on feasibility reports and on consultant design teams.
- Default emission factors were used in converting energy kWh to tonnes CO2e emissions.

Utility unit price assumptions are the most critical in determining the project financial savings. Utility supply markets are very volatile which makes prediction of future prices very difficult.

### 24. Benefits and Savings

The quantified benefits of implementing the carbon reduction projects outlined in this plan are set out below and the BAU line reflects the financial impacts of changes in estate, including energy intensity, whilst the Project Plan Spend line reflects the financial impacts of these changes and the implementation of all carbon reduction projects as planned.



Quantified financial benefits of CMP implementation (in £thousands)

### Value at Stake Analysis

#### Cost (£)

##### Business as Usual Scenario

	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
BAU Scenario Total	1,585,262	1,637,578	1,692,315	1,749,606	1,809,591	1,872,421
Cumulative Total	1,585,262	3,222,841	4,915,156	6,664,761	8,474,535	10,346,774

### Value at Stake Analysis

#### Cost (£)

##### Reduced Emissions Scenario

	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
RES Scenario Total	1,585,262	1,552,207	1,519,841	1,488,150	1,457,120	1,426,736
Cumulative Total	1,585,262	3,137,470	4,657,311	6,145,460	7,602,580	9,029,316

As well as improving efficiency and reducing utility costs, implementation of the CMP reduces the legal and financial risks associated with the various national and international regulatory regimes relating to the organisation's activities and, in particular, the Scottish Government's and Sustainability and energy efficiency agendas.

In addition to quantified benefits, the successful implementation of the identified projects will offer the organisation further benefits including:

- The creation of an improved, more comfortable and more energy efficient built environment for visitors and staff.
- Enhanced reputation from reducing the organisation's carbon footprint.
- Improved platform for providing a lead in carbon management and sustainability to other stakeholders and organisations.
- Consolidation of standing within the CRC EES league table.
- Meeting of Government and other targets.

### 25. Financial Costs, Sources of Funding and Opportunities

The Carbon Management is an integral part of the everyday functioning of estates operations and estates development, with the latter managing all major refurbishment and new-build projects. It is anticipated that the Facilities Management Department/ Environmental and Sustainability Manager will utilise existing resources to carry out these project duties and/ or

employ the services of specialist engineering consultants to design the projects where appropriate.

## Management and Delivery of the Carbon Management Plan

### 26. Introduction

In order to ensure that there is effective and ongoing ownership of the Carbon Management Plan, it is important to have a fully defined governance structure. North East Scotland College will continue to link it with all the targets and objectives outlines in the College's ISO14001 Accreditation and subsequent meetings etc.

## 5 Progress Reporting

### 27. Yearly Updates to the Carbon Management Plan

The Carbon Management Plan is viewed as a 'live' document and it is envisaged this will change on an annual basis as the organisation's estate changes and planning assumptions become reality. To ensure that the CMP remains 'fit for purpose' to deliver targeted carbon savings, the document will be reviewed on an annual basis. This process will be overseen by the CMC and coordinated by the Carbon Manager [or equivalent].

Specifically, the following areas of the CMP will be subject to annual review with production of an Annual Carbon Management Report:

- Progress towards overall carbon reduction target including CO<sub>2</sub>e savings against target and quantifiable benefits
- Progress with identified carbon reduction projects (will also be reported separately to the CMC [or equivalent] on a [monthly/bimonthly/quarterly basis])
- Financial savings achieved as a result of carbon reduction projects
- Costs of the programme
- Wider benefits
- Stakeholder engagement, and
- Risk Register

The review will be presented to the SMT through the Environmental and Sustainability Manager. The SMT will in turn present this to the Board of Management.

The annual progress review will be placed on the intranet.

### 28. Data Collection and Management

Data measuring the progress of the CMP will be collected quarterly and presented to the various relevant levels of governance.

The data collected will include:

- Progress on specific projects
- Details of the performance of the variables contributing to the emissions in the quarter such as utilities, water, fuel, waste generated.

As noted above, an Annual Carbon Management Report will be completed and presented to the SMT.

To formalise a structure for ongoing implementation of the CMP, Standard Operating Procedures will remain in line with ISO14001.

#### 29. Standard Operating Procedures

To ensure the approach to reporting progress with the CMP is clear, consistent and embedded across the organisation, SOPs have been developed in the following areas:

- (i) Annual calculation of North East Scotland College's carbon footprint and subsequent reporting as an ongoing requirement of this CMP
- (ii) Ongoing recording and monitoring of North East Scotland College's carbon reduction projects developed as part of this CMP

The SOPs will require to be endorsed by the SMT and will be reviewed on an annual basis.

#### 30. Other Reporting Requirements

North East Scotland College will continue to fulfil requirements to report on environmental performance through a range of other mechanisms.

All data is gathered and stored within an Environmental Management System Spreadsheet stored within the Facilities Drive.

Data is also currently being gathered using Energy Management Software. The College has now installed an Energy Monitoring and Targeting System at the City Centre and Altens Campus monitoring electricity, water and gas consumption. Daily, weekly and monthly reports can be produced and outside temperature will also be monitored to allow weather compensation of gas consumption figures.

#### 31. Annual Improvement Action Plan

Following each Annual Review, an Annual Improvement Action Plan (AIAP) will be compiled in response ensuring that Carbon Management remains on track. This document will highlight the priorities for the forthcoming year and will become a formal addendum to the CMP.

Subsequent Annual Reviews will thereafter require assessing of progress against both the original CMP and the AIAP.

#### 32. Risk Register

Appendix F contains a Risk Register that identifies potential risks to the successful implementation/delivery of the CMP. This will also be updated annually

## Appendix A

### Carbon Management Drivers

1. Scottish Government Targets
  2. EU Emissions Trading Scheme (EU-ETS)
  3. CRC Energy Efficiency System
  4. Zero Waste Plan
- Key policy drivers - the Waste (Scotland) Regulations and the Safeguarding Scotland's Resources action plan.
  - Reduce the carbon impact of waste by 3MtCO<sub>2</sub>e.

The key points outlined in the new Waste (Scotland) Regulations are as follows:

- All businesses and organisations to present key recyclable material for collection from 1 January 2014 - paper, card, glass, plastic, and metals
- Food waste businesses producing over 50kg of food waste per week to present it for separate collection from 1 January 2014
- Food waste businesses producing over 5kg of food waste per week to present it for separate collection from 1 January 2016
- A ban on the use of macerators to discharge food waste into the public sewer from 1 January 2016
- Local authorities to provide a basic recycling service to all households by 1 January 2014
- Local Authorities to offer a food waste recycling service in non-rural areas from 1 January 2016
- A ban on material collected for recycling going to landfill or incineration
- A ban on municipal biodegradable waste going to landfill by 1 January 2021

### Carbon Metric

- The Carbon Metric is a systematic approach to measuring and reducing the whole life cycle carbon impacts of Scotland's waste. Scotland is the first country to measure the carbon impact of its waste in this way. By giving decision makers a more complete understanding of the impacts of waste, we have a better chance of reducing these impacts.
- In 2011, the carbon impact of Scotland's waste was 13.9 MtCO<sub>2</sub>e. We saved 1.8 MtCO<sub>2</sub>e from recycling our waste in 2011. By 2025, if our current waste policies are implemented, we can reduce the carbon impact of waste by a further 20% or 3 MtCO<sub>2</sub>e.
- Zero Waste Scotland Carbon Metric tool<sup>10</sup> allows organisations to calculate the carbon impact of their waste in a way that is compatible with the national Carbon Metric approach. Data can be entered on the waste they produce and how this is managed. The results show the overall carbon impact of their waste and highlights which materials are contributing the most to this. Organisations can use the results to plan how to reduce their carbon impacts from preventing and more sustainable management of waste.
- The carbon metric looks at a different boundary from the Carbon Management Plan and includes the upstream material consumption as well as the waste disposal. This additional information can help organisations understand how to make lower carbon decisions in terms of purchasing of goods and disposal of waste.
- Uptake of the carbon metric is encouraged (though not mandatory) within the Public sector Sustainability Reporting guidelines 'early adopters' = best practice/leaders as applied to internal waste (in conjunction with application to overall waste management service delivered to whole LA by Council).

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<sup>10</sup> <http://www.zerowastescotland.org.uk/category/subject/carbon-metric>

5. Renewables Heat Incentive (RHI)
6. Feed in tariffs (FITs) for renewable energy
7. Renewables Obligation Scotland (ROS)

## Appendix B

### Carbon Emission Factor Used

Emission Factors from Defra's Guidelines to Defra/DECC's Greenhouse Gas Conversion Factors for Company Reporting 2013 were applied in the modeling of the 2010/11 baseline footprint for North East Scotland College.

**Defra emission factors used in the calculation of the 2015 baseline carbon footprint**

## Appendix C

### Standard Operating Procedures

The Carbon Management Plan will operate in line with North East Scotland College's Environmental Management System ISO14001. All procedures are located within the College intranet and are accessible by all staff.

# Appendix D

## Business As Usual

### What is Business as Usual (BAU)

Business as usual (BAU) is the normal execution of standard operations within an organisation, particularly in contrast to a project or programme which would introduce change. In the context of carbon management, this means that BAU represents an estimate of what the overall carbon footprint of the organisation (based on the current footprint boundary) is likely to be in future years.

This BAU scenario needs to take into account internal and external growth factors that are likely to affect the carbon footprint over time. Although an overall carbon footprint is a single figure, in reality it is a complex underlying calculation, with different emission sources affected by these factors in different ways. The table below shows a sample of some of the key factors identified that affect BAU.

### Examples of key internal and external factors impacting on BAU

External factors		Internal factors	
<p><b>Electricity grid carbon factor - the factor applied to convert units of kWh of electricity consumed to a figure of carbon dioxide equivalents emitted.</b></p>	<p>Grid factor changes year on year due to a variety of external factors outside of the organisation's control including relative price of different fuels for power generation. Over a longer period of time, the grid factor changes due to energy policy and the relative contribution of different fuels and sources of generation e.g. renewables. The aim of energy policy is to reduce the carbon intensity of the grid and this will have a large effect on the overall footprint</p>	<p><b>Energy intensity of service provision</b></p>	<p>The energy used is likely to change over time, due to changing nature of services and also changing efficiency of equipment. This is one of the areas that are particularly difficult to model at this point in time and it is likely that this will require further studies to effectively model</p>
<p><b>Population growth/changing demographics</b></p>	<p>The need for the organisation's services depends on both the size and structure of the population served and therefore changes to this population may need to be incorporated</p>	<p><b>Estate changes</b></p>	<p>Over time organisations build and decommission estate in order to meet the requirements of population served. The more this can be modelled with real data e.g. known floor areas or energy efficiency data, the more accurate this forecast can be.</p>



## **Why is it important to model BAU?**

As carbon management has become more sophisticated, organisations have become aware that the use of a single annual percentage growth to represent BAU is not necessarily accurate. Furthermore, by failing to model BAU, carbon managers cannot clearly demonstrate progress against targets and value for money for the carbon management programme, which in turn has a knock-on effect on internal investment.

If an organisation's BAU carbon footprint is actually increasing faster than anticipated, the efforts of the carbon management team would be underestimated – this is especially true when the measured footprint appears to be flat lining or even increasing and senior managers might question the impact of investment; however a more accurate model of the BAU could show that without the efforts of the CM team, the footprint would have risen even more steeply.

More sophisticated models of BAU also provide a more depth look at which parts of the footprint are increasing and decreasing over time and this, along with financial models of the costs of fuels and services such as waste and water, can help organisations make better strategic decisions for future investment.

## **How BAU has been modelled for North East Scotland College**

### **Growth factors**

The following growth factors were applied:

- 1) UK grid electricity factor (based on historic DECC figures and future IAG forecast figures)
- 2) Estate Changes: Energy use in the new buildings was based on actual predicted energy consumption bespoke for the building as provided by the organisation where possible, or consumption of similar existing stock.

With this data inputted, the spreadsheet calculates the overall carbon footprint for the organisation in future years. This information has been used in the CMP to forecast 'Value at Stake', (re)set targets and determine the scale of carbon saving projects required to be implemented.

### **Future modelling of BAU**

BAU models are likely to change over time as organisations understand and incorporate more internal factors in their BAU model, especially in terms of in-depth understanding of future estate changes. There are also likely to be an improvement in the available forecasts of external factors, especially grid electricity, which is one of the key, determinates of future BAU, affecting a significant proportion of the carbon footprint.

Therefore, BAU forecasts need to be updated on a yearly basis, with improved information to help understand where best to allocate resources and effort in the future.

## **Appendix E**

Summary of Projects from the Project Register.

## North East Scotland College Carbon Management Plan 2015

Project Description	Location	Capital Spend Year	Commissioning Year	First Full Year of CO2e savings	Capital Cost (£)
oil to gas conversion - Gallowgate	gallowgate	2012/13	2012/13	2013/14	500,00
T5 Lighting - Gallowgate (IT/Library)	gallowgate	2012/13	2012/13	2013/14	22,000
Cavity Wall Insulation - Altens		2012/13	2012/13	2013/14	3,000
Replacement of Boilers - Altens		2013/14	2013/14	2014/15	63,700
Replacement of Roof -Altens		2013/14	2013/14	2014/15	300,000
Replacement of Chillers in IT Centre	gallowgate	2012/13	2012/13	2013/14	60,000
Insulation of Gallowgate, Tower Basement Roof	gallowgate	2012/13	2012/13	2013/14	250,000
Double Glazing Gallowgate	gallowgate	2014/15	2014/15	2015/16	1,000,000
Recladding Project - Gallowgate	gallowgate	2014/15	2014/15	2015/16	3,000,000
Refurbishment and Upgrading of Heating Control Systems	gallowgate	2013/14	2013/14	2014/15	20,000
Air Conditioning/Lighting Upgrade FG13/14	altens	2013/14	2013/14	2014/15	7,900
Art and Design Development - Fraserburgh - Lighting	Fraserburgh	2013/14	2013/14	2014/15	8,550
Art and Design Development - Fraserburgh - Heating	Fraserburgh	2013/14	2013/14	2014/15	10,000
Boardroom Lighting	Gallowgate	2013/14	2013/14	2014/15	2,050
Fitness Suite Development - lighting	Fraserburgh	2013/14	2013/14	2014/15	1,900
Lighting upgrade Blocks D and E Altens	Altens	2013/14	2013/14	2014/15	17,000
Lighting Upgrade Clinterty Workshop	Clinterty	2013/14	2013/14	2014/15	21,935
Motor Vehicle Workshop - lighting	altens	2013/14	2013/14	2014/15	4,000
Fraserburgh Air Conditioning Upgrade	Fraserburgh	2012/13	2012/13	2013/14	10,000
4th Floor Hardware labs - lighting upgrade	Gallowgate	2012/13	2012/13	2013/14	2,000
4Th Floor Hardware labs - heating upgrade	Gallowgate	2012/13	2012/13	2013/14	4,000

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Version 1

Prepared by Gillian Forshaw, Environmental and Sustainability Manager

Gallowgate Basement Roof Refurb	Gallowgate	2012/13	2012/13	2013/14	200,000
Gallowgate Basement Phase 2 Main - Lighting Upgrade	Gallowgate	2012/13	2012/13	2013/14	40,000
Gallowgate Basement Phase 2 Main - Heating Upgrade	Gallowgate	2012/13	2012/13	2013/14	100,000
Gallowgate Basement Phase 2 - Air Conditioning Units	Gallowgate	2012/13	2012/13	2013/14	3,000
Gallowgate Kitchen refurb - lighting upgrade	Gallowgate	2012/13	2012/13	2013/14	5,000
Gallowgate kitchen refurb - energy efficient appliances	Gallowgate	2012/13	2012/13	2013/14	2,000
Altens B +C Block refurb - lighting upgrade	Altens	2013/14	2013/14	2014/15	40,000
Tool workshop Fraserburgh - lighting upgrade	Fraserburgh	2013/14	2013/14	2014/15	50,000
Tool Workshop Fraserburgh - heating upgrade	Fraserburgh	2014/15	2014/15	2015/16	70,000
Boiler Replacement Fraserburgh/peterhead	Fraserburgh	2014/15	2014/15	2015/16	50,000
Roofing replaced Clinterty	Clinterty	2015/16	2015/16	2016/17	170,000
Fraserburgh master plan (BREEAM)	Fraserburgh	2015/16	2015/16	2017/18	100,000
Energy Monitoring system	Gallowgate/Altens	2015/16	2015/16	2016/17	5,000
Upgrade of spray booths /lighting	Altens	2015/16	2015/16	2016/17	20,000
Energy Monitoring system	Altens	2015/16	2015/16	2016/17	50,000
Upgrade of spray booths /lighting	Altens	2015/16	2015/16	2016/17	20,000
Fraserburgh master plan (BREEAM)	Fraserburgh	2015/16	2015/16	2017/18	100,000

## Appendix F

Risk Register.

	<b>Description</b>	<b>Impact</b>	<b>Probability</b>	<b>Mitigating actions</b>
<b>1</b>	<b>Timing</b> If CMP is not completed on time and is not sustainable in its implementation and long term goals then projected carbon savings will not accrue within the expected timescale and could lead to failure of entire exercise	H	L	<b>Liaise with Project Sponsor to ensure sufficient time and resource available</b>
<b>2</b>	<b>Negative Financial implications</b> If finance is not made available as required and there is resistance to the implementation of major schemes then the expected scope for carbon reduction will be greatly minimised	H	M	<b>Ensure projects identified are approved through Carbon Management Committee</b>
<b>3</b>	<b>Resistance to Cultural change</b> Whilst many staff appear to embrace the general "sustainability" agenda the need to change behaviours with regard to energy efficiency in the workplace needs to be embraced.  If behaviours do not change then the overall reduction in CO <sub>2</sub> e will be impacted on by 3-5% of the target.	H	M	<b>Liaise with staff</b>
<b>4</b>	<b>Legislative Changes</b> Forthcoming legislative changes are likely to enhance opportunities both for investment and also technical improvement of buildings and related energy efficiency. If this is delayed or shelved, there may be less leverage with certain departments to ensure change.	H	L	<b>Ensure that legal ramifications of regulatory changes are fed through early in any communication and are understood by all participants</b>
<b>5</b>	<b>Development Team Interfaces</b> If the Estates Development Team fail to incorporate exemplar design business decisions into The Capital Works Programmes the Carbon Plan savings will be compromised.	M	L	<b>Ensure Facilities Managers embedded the Energy and Carbon management brief into all design for new build and major refurbishments</b>

	<b>Description</b>	<b>Impact</b>	<b>Probability</b>	<b>Mitigating actions</b>
<b>6</b>	<p><b><i>Continuity of Project Managers</i></b></p> <p>If the Carbon Plan Management is to be delivered effectively the key personnel involved must be fully engaged and retained on the Project. The most important personnel are the Carbon Management Committee, project sponsor, Carbon and Energy Manager and Carbon Management Team.</p>	M	M	<p><b>Ensure succession planning is in place. Ensure PDP's/Objectives reflect the CMT needs. Consider OD input.</b></p>
<b>7</b>	<p><b><i>Carbon Plan Loses Priority</i></b></p> <p>There is a risk that the Carbon Management Plan may not always have the level of priority currently assigned to it within the organisation. This will be impacted upon changing national policies andust governance.</p> <p>If the Plan is considered low priority this will affect the ability to deliver the savings.</p>	L	L	<p><b>Communicate aims and objectives in sound business terms to gain maximum response in all areas to delivery of the Plan.</b></p>