



working in
partnership
with



CLIMATE CHANGE ACTION PLAN



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Owner:- David Seaton

Head of Estates & Facilities

Contents

Foreword from Linda McKay, Principal.....	3
Foreword from the Carbon Trust	3
1. Introduction	4
2. Carbon Management Programme	5
2.1 Context	5
2.2 Strategic Themes.....	5
2.3 Targets and Objectives	6
3. Carbon Management	7
3.1 Scope	7
3.2 Carbon Emissions Baseline 2008/09	7
3.3 Carbon Emissions Forecast	8
3.4 Targets	9
Areas for Initial Action	9
Areas for Secondary Action.....	9
4. Implementation	10
4.1 Benefits.....	10
4.2 Financial Costs and Funding.....	10
Abbreviations	11
Appendix A	12
Summary of Forth Valley College 5 Year Climate Change Commitment Action Plan.....	12

Foreword from Linda McKay, Principal

Forth Valley College recognises the scale and speed of climate change and the many challenges and opportunities this will give us. As we address these challenges we will pay particular attention to the environmental impact of our work. We are committed to environmental sustainability and to the reduction of our carbon emissions through our Climate Change Action Plan while working in partnership with the Carbon Trust.

We are also committed to leading on the delivery of sustainable, low carbon 21st century campuses and to embed sustainable practice through our primary role as educators and skills trainers.



Foreword from the Carbon Trust

Cutting carbon emissions as part of the fight against climate change should be a key priority for local authorities - it's all about getting your own house in order and leading by example. The UK government has identified the public sector as key to delivering carbon reduction across the UK in line with its Kyoto commitments and the Public Sector Carbon Management programme is designed in response to this. It assists organisations in saving money on energy and putting it to good use in other areas, whilst making a positive contribution to the environment by lowering their carbon emissions.

Forth Valley College was selected in 2009, amidst strong competition, to take part in this ambitious programme. Forth Valley College partnered with the Carbon Trust on this programme in order to realise vast carbon and cost savings. This Carbon Management Plan commits the organisation to a target of reducing CO² by 25% by 2014 and underpins potential financial savings to the organisation of around £637,975.

There are those that can and those that do. Public sector organisations can contribute significantly to reducing CO² emissions. The Carbon Trust is very proud to support Forth Valley College in their ongoing implementation of carbon management.



Richard Rugg

Head of Public Sector, Carbon Trust



1. Introduction

1.1 Forth Valley College

Forth Valley College was launched in 2005 from the merger of Falkirk College of Further & Higher Education and Clackmannan College of Further Education. Forth Valley College is the fifth largest in Scotland with approximately 20,000 students and 700 staff. The College located in the Forth Valley area has a presence in the communities of Alloa, Falkirk and Stirling .

The College offers a wide range of courses in a variety of subject areas including, Engineering, Applied Science & Computing, Creative and Leisure Industries, Business and Management, Construction and Care Studies.

1.2 Our Low Carbon Vision

The College recognise that the changing climate will have far reaching effects on Scotland's economy, people and environment and is determined to play its part in rising to this challenge.

Our vision is to lead by example in all our activities and to ensure that all learners are aware of the impact of their actions on the environment.

We will also comply with the legislation as laid out in the Climate Change (Scotland) Act 2009.

1.3 Curriculum Led Estates Strategy

The curriculum led estates strategy was the first prepared by Forth Valley College after its launch and addressed a number of key challenges.

- The needs of the curriculum in each location
- The poor condition of a substantial proportion of the Estate
- The limited number of courses offered by the College in Stirling.

The key objectives of the strategy are:-

- Exit existing PFI building at Stirling and construct new campus at Stirling – Kildean.
- Construct new campus at Alloa – Hawkhill.
- Remodelling of campus at Falkirk to include part new builds – Science, Engineering and Technology Centre and part upgrade of existing buildings.
- Focus on environmental sustainability in the design of all new builds and upgrade projects.

2. Carbon Management Programme

2.1 Context

Forth Valley College are signatories to the Universities and Colleges Climate Commitment for Scotland (UCCCfS) and is committed to preparing and publishing a five year climate change action plan with targets and timescales to achieve significant reduction in emissions from all business activities.

We are therefore committed to sustainability and to reducing our carbon emissions. Participation in this phase of the Carbon Management Programme is central to Forth Valley College's progress to meeting this target. We are also committed to continually reviewing our environmental performance to ensure that the social, environmental and economic impact of our activities is taken into account in all our policies, procedures and practices.

The Carbon Management Programme will allow the College to evaluate its current performance and plan future projects to ensure that all potential for carbon savings is considered. Savings achieved through Carbon Management Programme can be used to drive further sustainable initiatives.

Finally and by no means last, measures to increase energy efficiency will reduce energy costs, which is particularly important given that energy costs are predicted to increase.

2.2 Strategic Themes

Forth Valley College's Carbon Management Plan will have several strategic objectives which will include:

- establishing ongoing financial support from SMT in relation to capital projects
- ensuring that positive carbon management is integrated into the curriculum
- embedding environmental and carbon reduction practices into existing policies and procedures

The key areas for embedding carbon management are Estates, Information Technology, Transport and all future construction type projects.

2.3 Targets and Objectives

The College has joined the Carbon Trusts “Carbon Management Lite Programme” to ensure that projects are carried out to the same high standard achieved by larger public organisations.

Our aim is to develop a range of projects that will deliver both significant carbon reductions and cost savings and to embed carbon management in the way the College operates.

We plan to establish this climate change action plan within the College to:

Reduce our emissions by 25% from August 2009 levels by August 2014.
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To help achieve this target we will:-

- Identify a range of carbon reduction projects to be incorporated into Facilities and Estates operational plans for the College estate by 2014.
- Encourage waste reduction, recycling and responsible disposal.
- Reduce carbon emissions from travel necessary for Forth Valley College’s business activities through sustainable travel planning.
- Enhance our learning and teaching through provision of modules and courses designed to provide clear advice on individual carbon emission reduction.

3. Carbon Management

3.1 Scope

The baseline is to include CO² emissions from the delivery of all organisation functions, related to the energy used in buildings and transport, but not the emissions in the goods procured by the organisation which is for a future date.

The Forth Valley College climate change action plan encompasses:

- owned/leased buildings energy use
- owned/leased fleet fuel use
- business travel
- waste produced by buildings and operations
- water used in buildings and operations

3.2 Carbon Emissions Baseline 2008/09

The College's activities, including energy, water, travel and waste, carbon emissions were calculated at 2873.35 tonnes of carbon dioxide (tCO²) for the baseline year 2008/2009.

Forth Valley College Baseline Carbon Footprint 2008/09

	Utility	Units	Total Used	Emission Factor (KgCO ² /Unit)	Emissions (Tonnes)	% of CO ² Output (Tonnes)
Direct Emission	Gas	Kwh	5,971,607	0.1850	1104.75	38.45
	Owned Transport	Kwh	55,267	0.250	13.81	0.49
Indirect Emission	Electricity (grid)	Kwh	2,906,989	0.537	1561.05	54.32
	Electricity (renewable)	Kwh	322,988	0	0	0
Other Emission	Business Travel	Kwh	476,860	0.240	114.45	3.98
	Water/Waste Water	m ³	46,642	1.7	79.29	2.76
					2873.35 tCO²	100

Of this total it can be seen that our energy use contributes over 92% of our total carbon footprint.

While efforts will be made to achieve a 25% saving of CO² arising from transport, waste production and water consumption, it is in the area of emissions from electricity and gas consumption that the most significant benefits are to be found and where the need for priority action is greatest.

3.3 Carbon Emissions Forecast

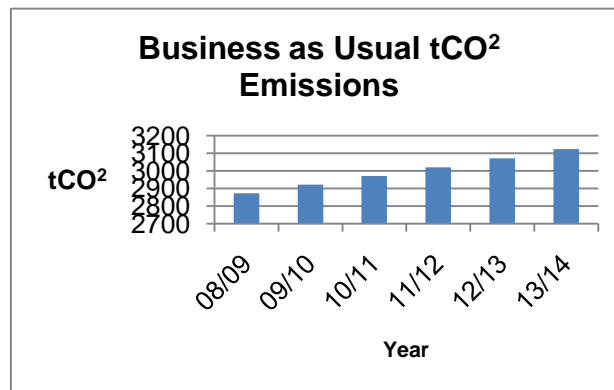
In a business as usual scenario the CO² emissions are expected to increase with the increase in activity and services provision.

Business as usual forecast assuming a modest growth of 1% in College activity and energy costs increasing at 8.3% per annum and CO² output at 0.7% which are both figures from Department of Trade & Industry.

Projections (Electricity, Gas & Transport)

	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014
Business as usual tCO ² emissions	2,873	2,921	2,970	3,020	3,071	3,123

As can be seen from the graph the business as usual projections even a modest growth and rise in energy cost will have a significant impact on finance, the environment and carbon emissions to the College.

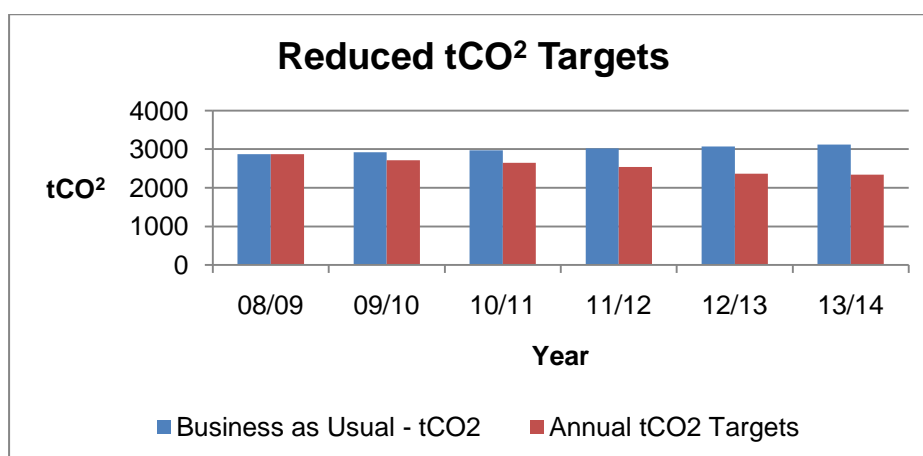


3.4 Targets

This Climate Change Action Plan sets a target of a 25% reduction in manageable CO² emissions against a baseline year of 2008/2009 which is an equivalent reduction of 781 tCO² by 2013/2014.

The table below shows the year on year target to reduce our emissions.

Year in project	Base Year	1	2	3	4	5
Year	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014
Business as Usual Scenario in tCO ²	2,873	2,921	2,970	3,020	3,071	3,123
Target Annual % Reduction	0%	7%	11%	19%	23%	25%
Annual tCO ² Targets	2,873	2,716	2,644	2,446	2,365	2,342
Annual tCO ² Savings	0	205	121	248	130	75
Annual tCO ² Reduction (cumulative)	0	205	326	574	706	781



Areas for Initial Action

- Energy consumption and source
- Waste reduction, recycling and responsible disposal
- Sustainable estate development

Areas for Secondary Action

- Sustainable travel planning
- Responsible procurement of goods and services
- Provision of skills training, modules and courses

A more detailed breakdown of proposed projects is included as Appendix A.

4. Implementation

4.1 Benefits

Through implementation of this plan, the College will realise a cleaner local environment, an estate fit to meet future demands and standards and more efficient operations.

4.2 Financial Costs and Funding

In first year it is expected that 'quick wins' will be relatively easy to undertake, however in subsequent years it will become more challenging as individual projects become more resource intensive and take longer to successfully implement.

Actual performance will be monitored annually to ensure we continue to meet with the timescales and targets necessary to achieve a 25% reduction on August 2009 emission levels by August 2014.

5. Summary of the 5 Year Plan, Savings and Targets

Forth Valley College will reduce the CO² emissions from our activities by 25% from our 2009 baseline by August 2014. To do this we will deliver an absolute reduction in emissions each year starting from 2010. In support of this, we will deliver the following projects (Appendix A).

During the early years of the plan a number of low cost quick wins will be delivered. Savings resulting from efficiencies in the early years will be available to invest in the later years of the plan to enable the emission reduction targets to be met.

Abbreviations

Sustainable Development:-	Is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This encompasses environmental, local and economic demands.
Carbon Reduction:-	reducing the carbon dioxide emissions to atmosphere from the business operations.
CCAP:-	climate change action plan
CMP:-	carbon management plan
Carbon Trust:-	Independent company set up by the UK government to accelerate the move to a low carbon economy.
Direct emissions:-	carbon dioxide from the combustion of fuel on site, e.g. Gas
Indirect emissions:-	carbon dioxide emissions from the use or purchase of a product, e.g. electricity.
Electricity Renewable:	electricity generated from renewable sources, e.g. wind, tidal, photovoltaic's etc.
tCO ² :-	tonnes of carbon dioxide
UCCCFs:-	Universities and Colleges Climate Commitment for Scotland

Appendix A

Summary of Forth Valley College 5 Year Climate Change Commitment Action Plan

Year	Ref	Project Title	% of Estate	Lead	Estimated Annual Saving
					tCO ²
1	1	Improve efficiency of building use in evenings	100%	Estates	150
1	2	Develop system of forced shut down of P.C. Laboratories	100%	I.T.	20
1	3	Improve thermal insulation (draught proofing) on window/doors	50%	Estates	30
1	4	Optimise BMS settings, monitor & review and dedicate % of staff time to monitor and setting of controls	50%	Estates	10
1	5	Continue with program of server and desktop virtualisation	100%	I.T.	5
1	6	Reduce water meter size in Middlefield Building	17%	Estates	0
					215

Year 1 target reduction tCO²

205

Year	Ref	Project Title	% of Estate	Lead	Estimated Annual Saving
					tCO ²
2	7	Replace/modify lighting in East block with efficient T5 fittings and consider daylight/occupancy controls	14%	Estates	20
2	8	Involve Marketing to improve student & staff engagement in carbon reduction	100%	Marketing	30
2	9	Develop energy, environmental & sustainability policies including reference to carbon management	100%	Estates	10
2	10	Carbon reduction to be considered as standard when planning all refurbishment or plant upgrade	100%	Estates	20
2	11	Develop system of forced shut down of staff workroom/office PC systems	50%	I.T.	20
2	12	Remove supplementary heaters throughout College after ensuring areas meet recommended temperatures	50%	Estates	20
2	13	Ensure all radiators are fitted with thermostatically controlled valves and locked	25%	Estates	10
2	14	Prioritise car parking spaces for car sharing	100%	Estates	0
2	15	Improve cycle storage	50%	Estates	0
2	16	Improve system of separation of waste in all staff workrooms, offices, classroom, workshops and public areas including signage	50%	Estates	3
					133

Year 2 target reduction tCO²

121

Year	Ref	Project Title	% of Estate	Lead	Estimated Annual Saving
					tCO ²
3	17	Replace/modify lighting in Workshop block with efficient T5 fittings and consider daylight occupancy control	14%	Estates	30
3	18	Increase number of zones in B.M. System	40%	Estates	20
3	19	Consider fitting water saving devices in toilets	100%	Estates	5
3	20	Relocate to new build in Alloa targeting BREEAM Excellent and Energy Performance Rating of 'B'	17%	Estates	270
					325

Year 3 target reduction tCO² 248

Year	Ref	Project Title	% of Estate	Lead	Estimated Annual Saving
					tCO ²
4	21	Replace/modify lighting in West block with efficient T5 fittings and consider daylight occupancy controls	14%	Estates	18
4	22	Relocate to new build in Stirling targeting BREEAM Excellent and Energy Performance Rating of 'B'	17%	Estates	-120
4	23	Vacate Middlefield Building	22%	Estates	300
					198

Year 4 target reduction tCO² 130

Year	Ref	Project Title	% of Estate	Lead	Estimated Annual Saving
					tCO ²
5	24	Replace electric storage heating system in East and Front blocks with gas fired LTHW system	20%	Estates	100
5	25	Improve thermal insulation on roofs – West and Front blocks	12%	Estates	20
5	26	Replace mixture of heating systems in Workshop block with new efficient system	20%	Estates	30
5	27	Improve thermal insulation on roofs Workshop block	20%	Estates	10
5	28	Replace single glazing with double glazing units West Block	54%	Estates	100
					260

Year 5 target reduction tCO²

75