



**Universities & Colleges
Climate Commitment for Scotland**

Climate Change Action Plan *30 November 2015*

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Executive Summary

Glasgow Kelvin College was formed in November 2013 as a consequence of the merger of North Glasgow, Stow and John Wheatley Colleges. Merger related projects and activities have been prioritised in recent years and the College is now seeking to address its statutory obligations in respect of Climate Change and Sustainability.

The College is striving to contribute towards the Scottish Government targets of reducing emissions by 42% by 2020 and 80% by 2050. This is the first Climate Change Action Plan (CCAP) of Glasgow Kelvin College and outlines a plan which will reduce the College measured carbon footprint by 25% by the end of 2016/2017 largely through reductions in consumption of energy. It is anticipated that actions taken to de-carbonise the national grid will contribute more to the reduction in CO₂ emissions at the College.

This report provides a baseline carbon footprint calculation which is based on academic year 2014/15. The College has included all its energy consumption and water consumption relating to its 5 main campus buildings. It has also sought to measure carbon emissions from staff business travel. It has also calculated the carbon emissions from its own vehicle fleet and use of taxis.

The College has not reported on emissions associated with any outreach centres which it delivers learning and teaching from but does not operate directly. These are mainly operated by partner organisations and community groups. Additionally, the nature of college provision is such that there are significant carbon emissions which result from the activities of the College but are not measured. This includes carbon associated with the supply of services and materials and staff and student commuting to attend college. It has also not been possible to report accurate waste disposal or recycling volumes. This will be addressed when a new contract for waste disposal is negotiated.

The College baseline carbon footprint for academic year 2014/15 was 3,257 tonnes CO₂. This is the figure that will be used to measure performance against the targets set in the CCAP.

The rationalisation of the College Estate is the main pillar of the CCAP and this is anticipated to reduce carbon emissions by 800 tonnes annually from September 2016 onwards. This will be primarily achieved through the closure of City Campus. This project represents a major investment by the College and is anticipated to produce significant carbon and financial savings.

The College is intending to establish a Sustainable Development Committee, this will include membership from across the College and this group will identify appropriate projects for further reductions in carbon and improved engagement with the climate change agenda throughout the College.

The financial situation facing the public sector and the College must be taken into account. This limits the likely availability of capital funding for more environmentally friendly technologies but also increases the need to make savings and improve efficiency which in turn is a key driver of reduced carbon emissions.

The CCAP is approved by the Board of Management and responsibility for delivering the projects outlined in it is the responsibility of the Vice Principal – Finance & Corporate Services.

Introduction/Background

This Climate Change Action Plan (CCAP) is the first one for Glasgow Kelvin College which was formed on 1st November 2013 as part of the college merger programme. The College is committed to minimising the adverse effect it has upon the environment and is seeking to actively manage and reduce its carbon footprint.

The College works in partnership with the other two colleges in Glasgow and the Glasgow Colleges' Regional Board. Carbon reporting and reduction is one of the key targets reported in the Regional Outcome Agreement and Glasgow Kelvin College will play an important part in contributing to the overall reduction in carbon emissions from the Further Education Estate in Glasgow.

In respect of the overall context, Glasgow Kelvin College has reduced in size as one of the main recommendations outlined the Glasgow Regional Curriculum and Estates Review which was finalised in early 2015. Overall, it is anticipated that student activity at the College will reduce by circa 13% over a 3 year period. This reduction in student activity at the College enables some reconfiguration of the College Estate which will contribute to Carbon Reduction.

The College currently operates from 5 main campus buildings:

- Springburn Campus
- East End Campus
- Easterhouse Campus
- West Campus
- City Campus

The Springburn and East End campuses are both reasonably new and had environmentally friendly technologies incorporated in the design and build process. In particular, the East End Campus achieved the BREAM Excellent rating for both its design and build. The Easterhouse Campus has also had significant investment in recent years to seek to improve its carbon footprint including the installation of energy efficient lighting, a wind generator, air-source heat pump and photovoltaic cells. The main planned change to the College Estate is to close the City Campus building with activity being re-located to other campus buildings and other Glasgow colleges. This is the main carbon saving project being undertaken in the short term.

Following merger, the College is now seeking to rationalise its vehicle fleet and has recently procured an electric vehicle specifically to reduce diesel consumption and emissions.

The College remains in the early stages of its development and is now seeking to identify ways of ensuring that the importance of Climate Change and Sustainability is embedded fully in the curriculum and becomes a core part of College student engagement processes. This will be done through increased awareness, student involvement in the Sustainable Development Committee and on-going visible awareness raising actions and communications.

Much of the College curriculum provision has climate change issues embedded within it. This is particularly relevant in Construction, Hair and Beauty, Hospitality, Science and Engineering provision where there are a range of activities which promote awareness of the need to act in an environmentally friendly manner. In addition other curricular areas such as communication and social science undertake activities learners which promote engagement around environmental issues. Furthermore environmental awareness/curriculum development will be an important feature of the College contribution to the STEM Strategy in Glasgow. The College is also a member of the Energy Skills Partnership which promotes the use of renewable technologies and the skills required to support the development of this industry. In addition the College operates paperless meeting distributing documents electronically to reduce the costs associated with more traditional means.

This 5-year Climate Change Action Plan (CCAP) has been produced to support the delivery of our Climate Commitment. The College however recognises that its resources are limited and it will seek to implement its CCAP in a way that is proportionate to the activities it can currently afford to undertake in respect of capital investment.

Project Management/Governance

The College will operate a Sustainable Development Committee. This Committee will oversee the CCAP and will consider other relevant matters within the terms of its remit. The Committee is chaired by the Director of Corporate Services and includes representation from across the College including teaching staff, support staff, student representatives and senior management. The Committee will meet a minimum of twice per year and will report to the Strategic Management Team. The CCAP itself and reports on progress against the targets will be approved and considered by the Board of Management and/or one of its standing committees.

The CCAP will be fully integrated with the College Estates Strategy and will form an important aspect of College operational and strategic planning processes.

Glasgow Kelvin College - CCAP Management and Delivery Roles

Role in CCAP	Name	Position	Contact Details
CCAP Lead		Vice Principal – Finance & Corporate Services	
Sustainable Development Committee		Principal Director of Corporate Services Head of Estates Director of Human Resources Head of ICT Marketing Manager Communications Manager Head of Faculty Student representative Trade Union Representatives Other volunteers	

The Sustainable Development Committee will oversee the CCAP, sustainability reporting and will be responsible for the review of the CCAP prior to approval by the Board of Management and the Strategic Management Team. Progress against the targets outlined in the CCAP will be reported on annually and the plan will be updated once per year.

The Committee will also ensure that there is an appropriate link between the CCAP and curriculum development.

Carbon Footprint 2014/15

Exclusions	Carbon Footprint Boundary
Learning Network Locations	Direct Fuel Use
Staff & Student Commuting	Natural Gas
Consumption of materials & Services	Grid Electricity
Waste	Biomass usage
	Water Consumption and Treatment of Waste Water
	Vehicle Fleet Fuel Use
	Staff Business Travel – Car / Rail / Air / taxi

Baseline Carbon Footprint

The priority for session 2014/15 was to identify robust baseline carbon footprint information which will both serve as a basis for setting targets for carbon reduction and for monitoring progress in achieving those targets.

The baseline also identifies gaps in data which the College will seek to address with key contractors and suppliers. The baseline data is calculated on the basis of academic year 2014/15 which ran from 1 August 2014 to 31 July 2015. The DEFRA conversion factors for 2014 have been used.

97% of the measured CO2 emissions are derived from the direct consumption of energy used to run the College Estate. The table below provides a detailed analysis of the energy usage, size of each building and energy source:

Baseline Carbon Footprint – Energy

	Units	Total used	Emission Factor kg CO ₂ -e/unit	Emissions Tonnes CO ₂	Internal Area Sq m	Kwh per Sq m
Direct Emissions (Scope 1)						
City Campus – Gas	kWh	2,145,472	0.18497	397		
City Campus – Electricity	kWh	977,519	0.49426	483		
City Campus – Total	kWh	3,122,991		880	11,764	265
West Campus – Gas	kWh	632,083	0.18497	117		
West Campus – Electricity	kWh	232,937	0.49426	115		
West Campus - Total	kWh	865,020		232	1,922	450
Easterhouse Campus – Gas	kWh	730,859	0.18497	135		
Easterhouse Campus – Electricity	kWh	511,957	0.49426	253		
Easterhouse Campus - Total	kWh	1,242,816		392	4,771	260
East End Campus – Gas	kWh	810,482	0.18497	150		
East End Campus - Electricity	kWh	419,371	0.49426	207		
East End Campus - Biofuels	kWh	144,000	0.011838	2		
East End Campus – Total	kWh	1,373,853		359	6,459	213
Springburn Campus – Gas	kWh	2,356,390	0.18497	436		
Springburn Campus – Electricity	kWh	1,729,352	0.49426	855		
Springburn Campus Total	kWh	4,085,742		1290	18,715	218
Total – Gas	kWh	6,675,286	0.18497	1235		
Total – Electricity	kWh	3,871,136	0.49426	1913		
Total – Other	kWh	144,000	.011838	2		
Grand Total	kWh	10,690,422		3,150	43,631	245

The bulk of the College measurable carbon emissions are from the direct use of gas and electricity in its main campus buildings. The East End and Springburn campus buildings in particular are relatively new and had environmental sustainability as a key element of the design and build process. This is reflected in their relatively low levels of energy usage per square metre of internal area.

Additionally, significant investment has been made at the Easterhouse Campus to retro-fit sustainable technologies in that building although energy usage is high relative to the size of the building. Despite this, energy consumption appears to be relatively high in this building. The City Campus and West Campus are both old buildings which have not had significant investment in recent years and consequently relatively high levels of energy usage are recorded for these buildings.

The main element of the current Estates Strategy is to close the City Campus building and concentrate College based activity in its other four buildings. It is intended that City Campus will close by September 2016 and will result in a saving of 800 tonnes of CO₂ emissions annually. This change is projected to reduce carbon from energy usage by 25% from September 2016.

In order to achieve this reduction, significant investment in re-modelling of other campus buildings is required. This means that there are not expected to be further significant capital investment resources available for other major projects in the coming 5 year period. Additionally, the scale of the College will

reduce and it should therefore be noted that the reduction at Glasgow Kelvin College is partly enabled by the transfer of activity to City of Glasgow College in order to enable that institution to make effective use of the new FE estate in Glasgow.

Other Carbon Emissions

The following table provides baseline figures for other aspects of College activity. It is recognised that better quality information is required in some areas, particularly in respect of waste and waste recycling.

Water usage data is provided by the supplier. The College is targeting a 15% reduction in water usage in 2016/17 as City Campus is vacated by the College this will save approx. 3 tonnes of CO₂ annually.

The College records staff travel from staff mileage claims, this does not include commuting and it does not include staff travel that is not claimed for. The bulk of staff mileage relates to travel between the 5 campus buildings although there are a relatively small number of staff who regularly attend meetings outwith the Glasgow area. The College will seek to improve timetabling to reduce this figure over the period of the plan.

Key Travel have been appointed as travel agents, most business travel is booked through them and they provide a detailed carbon report on all transport bookings made by the College. While there will be some instances of travel booked in other ways, this is unlikely to be material. The College is not in a position to reduce this activity as most of it relates to student trips which form an important part of the curriculum.

College owned transport includes a small fleet of vans and minibuses. These are used mainly for transporting mail, supplies and equipment between campus buildings and the 31 outreach centres operated by the College. The minibuses are used for student trips and are predominantly used for sports related courses. The College is planning the following actions to reduce carbon emissions in this area:

- Lease of an electric vehicle;
- Reduce the number of diesel / petrol vehicles;
- Reduce mail runs from daily to twice per week; and
- Better scheduling of outreach centre van runs.

Again, DEFRA conversion factors for 2014 have been applied in all cases. In respect of water it is assumed that 95% is returned to the sewage system and re-treated. In respect of taxi mileage, the average diesel car factor is used. In respect of staff mileage, the average car unknown factor is used.

	Units	Total used	Emission Factor kg CO ₂ -e/unit	Emissions Tonnes CO ₂
Water Usage	m3	18,219	0.3441	6.3
Water Treatment (95%)	M3	17,308	0.7085	12.3
College Owned Transport - Diesel	Litres	12,372	0.24615	3.0
Other Emission (Scope 3)				
Business travel				
Staff Travel by Car	km	167,115	0.18943	31.7
Travel by hire car	Km	Not used		
Travel by taxi	Km	5,660	0.18546	1.0
Travel by bus	Passenger km	no data available		
Travel by rail	Passenger km	15134	0.04738	0.7
Travel by plane				
Long haul				
First class	Passenger km	0	0.60210	0
Business class	Passenger km	0	0.43652	0
Premium economy	Passenger km	0	0.24084	0
Economy	Passenger km	81768	0.15054	12.3
Short haul				
Business class	Passenger km	1442	0.23753	0.3
Economy	Passenger km	230697	0.15835	36.5
Domestic				
Average	Passenger km	10468	0.29316	3.1
Other business travel (specify)				
Total Other Emissions				107.2

Total Measured Emissions from College Activities

3,257 tonnes CO₂

Waste Management

A procurement exercise in respect of a new waste management contract covering all college campuses will take place in 2016. Recycling and accurate reporting on waste volumes will form an important part of that procurement exercise. Once the College has better information on waste volumes and recycling volumes it will then establish reduction and improvement targets.

It will also work with its catering contractors to ensure waste from this source is likewise minimised.

Business as Usual Emissions

Implementation of the Colleges Estates Strategy is of strategic importance to the College and will result in significant carbon saving. The College has established a carbon footprint baseline for session 2014/15 and believes that its usage of energy, travel and water would remain materially constant if the Estates Strategy and the Climate Change Action Plan were not implemented. It could be argued that further reductions in the volume of activity planned due to funding cuts may result in some consequential savings in energy usage.

The College does not have sound baseline data from previous years and is therefore unable to look at historic trends in usage. However, the College needs to rationalise its Estate for financial reasons and will as a consequence implement the main aspect of the plan to reduce carbon emissions.

Business as usual emissions are therefore estimated at 3,260 tonnes CO2 per annum.

Categories for Action

This section outlines the proposed categories for action in the coming years. A brief narrative is provided in respect of each of the 7 categories in the Universities and Colleges Climate Commitment for Scotland.

A. Energy consumption and Source

The College is seeking to address its energy consumption through the closure of its City Campus and rationalisation of its Estate. This is expected to reduce the College carbon footprint by 800 tonnes of CO2 annually, equivalent to around 25% of emissions from energy consumption. This will be effective from September 2016.

In respect of energy source, the College will seek to ensure its Photovoltaic cells, wind generator, biomass boiler and air source heat pumps are all working optimally to minimise use of grid electricity and natural gas. The College uses public sector energy contracts negotiated by Advance Procurement in Universities and Colleges and therefore will not seek to address energy source through procurement. It is assumed that nationally negotiated contracts place appropriate weighting on climate change and energy generation sources.

B. Waste reduction, recycling and responsible disposal

The College is seeking to rationalise its waste disposal contract to a single provider for all campuses. Recycling and reporting will be a key element of the contract tendering and scoring process. The College is in the process of identifying responsible disposal routes for unwanted equipment where it is not possible to recycle furniture, fittings and equipment as City Campus is vacated.

The College has waste recycling facilities in place at most campus buildings and will seek to make better use of these once the new contract is in place.

Minimising waste is an important element of all college activities. For example, in construction materials are cleaned and re-used repeatedly.

C. Sustainable estate development

The College has severely limited capital investment funds at present. Its Estates rationalisation will reduce carbon emissions as outlined above. All available resources are currently being allocated to this project and no resources are available at present to make further improvements at other campus buildings. The Sustainable Development Committee will be asked to identify new projects for carbon reduction.

D. Sustainable travel planning

The College is seeking funding for improved cycling facilities. This is in response to a cycle to work survey which highlighted a lack of secure cycle storage. It is hoped that this will have a positive impact on the number of people who cycle to work.

The College pays staff 20p per mile to staff who travel between campuses by cycle in order to incentivise this mode of travel. It also participates in the cycle to work scheme and a small number of staff have taken advantage of this. It is intended that the College will communicate these options to staff again in order to try and improve uptake.

Additionally, the College will reduce the need for business travel as it reduces the number of campus buildings in operation and the number of staff it employs. Overall a 10% reduction in staff mileage is anticipated in 2015/16 and a further 10% in 2016/17. This will reduce carbon emissions by 3 tonnes annually for each 10% reduction. The College is also in the process of reviewing how classes are timetabled to reduce the number of staff journeys between buildings.

Foreign travel is unlikely to reduce as this is largely driven by student travel on European Exchange programmes. These form an important and valuable part of the curriculum for a number of courses. The College is also working with the Indian authorities on an exchange programme in that country which may result in increased long haul travel. This project is funded by the UK Government. Almost all air travel is booked at Economy class and therefore there is no scope to reduce activity through reductions in business class travel.

E. Responsible procurement of goods and services

College procurement processes include a clear commitment to environmentally and socially responsible purchasing. This is embedded in the procurement strategy and the scoring process where appropriate. The Colleges Procurement Strategy is closely aligned with the priorities set by APUC.

F. Provision of skills training, modules and courses

The College includes sustainability within the curriculum where appropriate. The most recent Education Scotland review outlines the key priorities for Glasgow Kelvin College in respect of learning and teaching. At present the focus for embedding sustainability in the curriculum is related to those areas where it is particularly relevant, for example in engineering and science courses.

G. Research capacity and knowledge exchange activity

The College is not involved in research activities and does not see this as part of its core mission. It is however involved in knowledge exchange and participates in a large number of such activities including:

- Ukieri international programmes
- Student exchanges
- Employer engagement
- University articulation arrangements

Methodology

The College will implement its CCAP primarily as part of its Estates operational and strategic planning process. The Sustainable Development Committee will have the opportunity to review and input into future CCAPs as part of the planning process in advance of Board approval. The Sustainable Development Committee will also oversee the implementation of the plan and evaluate its effectiveness against the targets set.

The plan will be reviewed annually and will take into account available resources and strategic priorities. All new proposals for projects which will reduce the carbon footprint of the building will be supported by a realistic business case which will outline the payback period and financial impacts.

The priority for the College Estate is to close City Campus and reconfigure other campus buildings in order to rationalise the estate in line with the Glasgow Regional Curriculum and Estates Review. This will require significant investment and will deliver considerable cost savings and carbon reduction.

Other carbon reduction projects will be planned subject to the availability of funding. Additionally, the Estates strategy will seek to ensure that existing technologies in buildings are well maintained and staff are trained in their use. This is anticipated to reduce costs and carbon emissions over the 5 years of the plan.

It is anticipated that the Sustainable Development Committee will identify other potential projects for carbon reduction. These will be assessed on a financial basis due to the current restrictions on public

funds. Where there are resources available for investment in such projects, they will be evaluated on a robust cost/benefit analysis in addition to the financial payback period.

The CCAP will be evaluated annually, the main target for carbon reduction relates to the rationalisation of the estate which is scheduled for September 2016. Once this project is nearing completion, the development of plans for years 3-5 of this plan will be undertaken and progress reviewed.

Summary of the 5-year Plan, Savings and Targets

This section summarises Glasgow Kelvin College's current carbon reduction plan and targets. Where savings are on-going a total for the 5 year plan is provided as lifetime savings.

Figure 4: Summary of Glasgow Kelvin College 5-year CCAP Projects

Year	Project Title/Type and Category Reference		Expenditure	Annual Savings		Lifetime Savings (5yrs)		Payback (yrs)	
			£	tCO ₂	£	tCO ₂	£	CO ₂	£
1	A1	Lease Electric Vehicle, grant funded	1,000	0.5	1,800	2.5	9,000	-	0.6
	A2	Improved Timetabling to reduce staff travel by 10%	0	3	4,500	15	22,500	-	-
2	A3	Improve cycling facilities if grant funding approved	5,000	Not measured	-	-	-	-	-
	A4	Close City Campus energy & Water	1,000,000 approx	803	700,000	4,015	£3,500,000	-	1.4
3	A5	Reduction in Staff Travel between campuses by further 10%	0	3	4,500	15	£22,500	-	-
4	A6	Projects and capital budget to be identified							
5	A7	Projects and capital budget to be identified							
Total			1,006,000	812.5	709,800	4,047.5	3,554,000		

Climate Change Action Plan / GHG Emissions Mitigation

The purpose of this section is to provide detailed, project-specific information, including costs, timescales and targets in each of the categories for action:

Category

A. Energy Consumption and Source

This is the main source of carbon emissions and is therefore the priority for the CCAP. The overarching objective is to make financial savings through the rationalisation of the College Estate in line with the Glasgow Regional Curriculum and Estates Review.

The College has established a project plan and established an internal management group to oversee the project. Specific sub-projects have been identified and the College is seeking financial support from the SFC for their implementation.

It is envisaged City Campus will be closed in September 2016 and will result in an annual carbon saving of 800 tonnes or 18% of baseline measured carbon emissions. The project in total will cost £1m and will result in annual savings of £700k per year in respect of the running costs of the building.

Target : Carbon Saving 800 tonnes per annum from September 2016

B. Waste Reduction, Recycling and Responsible Disposal

The College will re-tender for a single waste provider. This will enable the College to review recycling facilities and ensure that accurate information on waste and recycling volumes are available. Once better data is available and the sustainable development committee established, further projects will be identified which will seek to reduce waste and improve disposal routes.

Target : New Contract in place by 1 May 2016

C. Sustainable Estate Development

The College will close City Campus as described above. This will reduce energy consumption, water consumption and staff travel. Estimated figures are outlined previously.

The College does not anticipate that it will have any specific capital funding for other projects. It does not, at present, have other plans in place to improve the sustainability of the Estate.

Target : City Campus Closure and handover 30 September 2016

15% Reduction in Water Usage – Carbon Saving 3 tonnes per annum

D. Sustainable Travel Planning

Travel related projects are outlined in the table above.

Improved timetabling and the reduction in the number of buildings will reduce staff travel. The College will also lease an electric vehicle and this will be used as heavily as possible to reduce diesel consumption.

The College has applied for grant funding to improve cycle to work facilities. This is aimed at addressing concerns about facilities raised in a recent survey and will put in place secure storage and improve changing room facilities.

Target : 10% Reduction in Staff Travel by 31 July 2016

Carbon saving – 3 tonnes per annum

Target : Further 10% Reduction in Staff Travel by 31 July 2017

Carbon saving – 3 tonnes per annum

E. Responsible Procurement of Good and Services

This is addressed in the College's procurement strategy which is available on the College Web Site.

F. Provision of skills training, modules and courses

The College is developing its approach to embedding sustainability in the curriculum. It remains a key component of its construction, hair & beauty, hospitality, science and engineering curriculum offer and will be included in other areas of the curriculum in an appropriate context.

G. Research capacity and knowledge exchange activity

There are no specific targets set in respect of this aspect of the CCAP.

CCAP Impact on Carbon Emissions / Projected Savings

The current CCAP for Glasgow Kelvin College is anticipated to save 809 tonnes of CO2 emissions annually by the end of the plan. This is a reduction of 25%.

Communications Strategy

The College will include climate change reporting in its annual report. The action plan will be reported to the Board of Management, staff and students annually and to key stakeholders. The College will seek to raise awareness of its actions on climate change throughout the College. It will also report progress in its annual report.