



Glasgow Kelvin College

Climate Change Action Plan

2023



**Sustain
GKC**



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Foreword

As the world faces a Climate Emergency, colleges and universities have a responsibility to: take a leadership role in the decarbonisation of campuses; model sustainable practices and policies; and equip learners with the skills and knowledge to be successful in a changing world.

Glasgow Kelvin College is committed to delivering on the UN Sustainable Development Goals and Environmental Sustainability. It recognises the role it can play in contributing to making the world a better place for future generations through both managing its own impact on the environment and, more importantly, ensuring that the College has a positive impact on the behaviour and attitudes of its students and others it engages with throughout their lives and careers.

The College is striving to contribute towards the Scottish Government targets of reducing emissions by 75% by 2030 and 90% by 2040. The Climate Change Action Plan (CCAP) of Glasgow Kelvin College outlines plans that will reduce the College carbon footprint.

Glasgow Kelvin College has been a leader in community development and engagement. To ensure a just transition, where all members of the Glasgow community are equipped to deal with the impacts of climate change, Glasgow Kelvin College is in a unique position to build more resilient communities and residents.

Glasgow Kelvin College is committed to reducing greenhouse gas emissions towards achieving Net Zero, and this document, partnered with the College's Race to Zero Action Plan, sets a path by which the College can achieve carbon neutrality, seizing on bold and innovative opportunities as they arise. Additionally, the College's Climate Change Action Plan goes well beyond carbon emissions, and includes multiple commitments to increase Green Job training, deliver a comprehensive climate literacy curriculum, and support behavioural and societal change.

Glasgow Kelvin College is committed to reducing greenhouse gas emissions, equipping our learners for success in a changing world, as well as providing support for those being affected by the climate transition.



Derek Smeall
Principal
Glasgow Kelvin College

Introduction & Background

The aim of this document is to map out Glasgow Kelvin College's interim and longer-term strategies to reduce our climate impact and to address the implications of the already changing climate. To achieve this plan, specific actions, and targets, outlined below, will need to be realised in the short and long term.

This Climate Change Action Plan is updated from the 2015 Glasgow Kelvin College CCAP, which identified emission reduction targets in-line with those that the Scottish Government had at the time. Those targets were a reduction from 2015 levels by 42% by 2020 and 80% by 2050. Since the drafting of the 2015 CCAP, the world, and Scotland in particular, has realised the true urgency of the climate emergency, and revised carbon reduction targets in response. Glasgow Kelvin, as detailed in this CCAP, reflects that realisation and strives for a more ambitious and diverse response to climate change. The College is now striving to contribute towards the Scottish Government targets of reducing emissions by 75% by 2030, 90% by 2040, and achieving net zero by 2045.

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Glasgow Kelvin College's Strategy document notes the following priorities:

Address our Climate Emergency – Act, Educate & Engage - We will pursue an ambitious agenda on climate change by:

- Ensuring estate development, maintenance and operations continually strive to reduce carbon footprint.
- Working to eliminate or mitigate against any potential negative environmental impact of our future investment in technology.
- Continuing to be proactive in supporting climate change initiatives and participate in the implementation of the Climate Change Action Plan by contributing to the achievement of Glasgow City, Scottish Government, UK Government and UN Sustainable Development targets and goals.
- Supporting Glasgow's Green Deal - Working with local communities and industry towards Glasgow Net Zero by 2030. Bringing together current education and skills, community engagement, and student experience strengths to become a centre of excellence for "green" education.
- Working together to help our students, communities and industry partners accelerate the transition to a sustainable world.
- Supporting access by promoting safe, sustainable, accessible and affordable travel.
- Ensuring that our procurement and supply chain contribute to our drive towards a sustainable world.

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. Funding opportunities will be actively pursued and will be critical in achieving many of the priorities set out in this CCAP.

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.

Glasgow Kelvin College Project Management & Governance

The College operates an Estates and Sustainability Working Group. 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 meets a minimum of twice per year and reports to the Senior Management Team. The CCAP, as well as 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 and Sustainability Strategy and will form an important aspect of the College operational and strategic planning processes.

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

The Global & Legislative Context

In 2017, Glasgow Kelvin College was the third College in Scotland to join the United Nations Sustainable Development Goals Accord and has since signed on to commit to the Race to Net Zero. Both these commitments influence this CCAP and our actions in the future. The College is fully compliant with the reporting requirements specified in the Climate Change (Scotland) Act 2009, and the Climate Change (Emissions Reductions Targets) (Scotland) Act 2019, reporting its environmental performance annually through the Public Sector Climate Change Duties Report.

This action plan also aligns closely with the Scottish Funding Council's Net Zero and Sustainability Framework for Action, the Scottish Government's Climate Emergency Skills Action Plan, and with aspects of the Further Education Climate Action Roadmap, whose themes are Leadership and Governance, Learning and Teaching, Estates and Operations, Partnerships, and Data Sharing. This Roadmap, commissioned by the Climate Commission for UK Higher and Further Education, offers an approach designed to meet the commitments to the Scottish Colleges Statement of Commitment on the Climate Emergency. Furthermore, the contributions of Glasgow Kelvin College will help deliver upon Scotland's Climate Change Adaptation Programme.

Glasgow Kelvin College Carbon Footprint

The College has made significant progress in the years since the 2015 CCAP was published, as demonstrated in Table 1 below. In 2014/15, Glasgow Kelvin's carbon footprint, as reported in the Public Sector Climate Change Duties Report, was calculated at 3,257 tCO₂e. The most recent calculation, of the 2020/21 academic year, had our footprint reduced to 1,591 tCO₂e, a 57% reduction. While the 2020/21 estimate is laudable, this CCAP will use the 2018/19 academic year data as the baseline data from which to measure reductions. Due to the COVID Pandemic, and the extended disruption to day-to-day activities, it is thought that the last year of data prior to the Pandemic would serve as the most accurate footprint baseline from which to measure our progress.

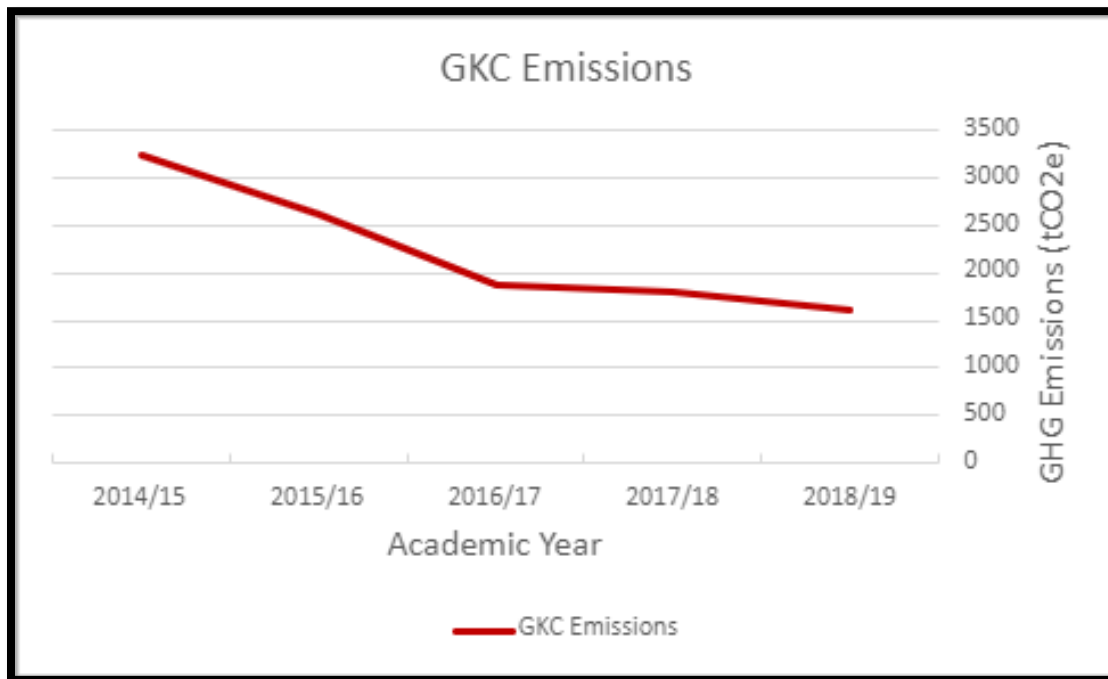


Table 1: Overall GKC Greenhouse Gas Emissions, as measured in Tonnes CO₂ emitted, from the baseline data of 2014/15 through 2018/19.

When considering the greenhouse gases attributed to Glasgow Kelvin by emission source (as seen in Table 2), natural gas and grid electricity contribute the vast majority of CO₂. In the 2019/20 academic year, 92.5% of the measured CO₂ emissions were derived from the direct consumption of energy used to run the College Estate. Therefore, for the College to meet its commitment to Net Zero, and to achieve the goals proposed in the CCAP, significant investment in renewable energy technologies will be required. The extent of this investment will be determined by funding opportunities available to the College.

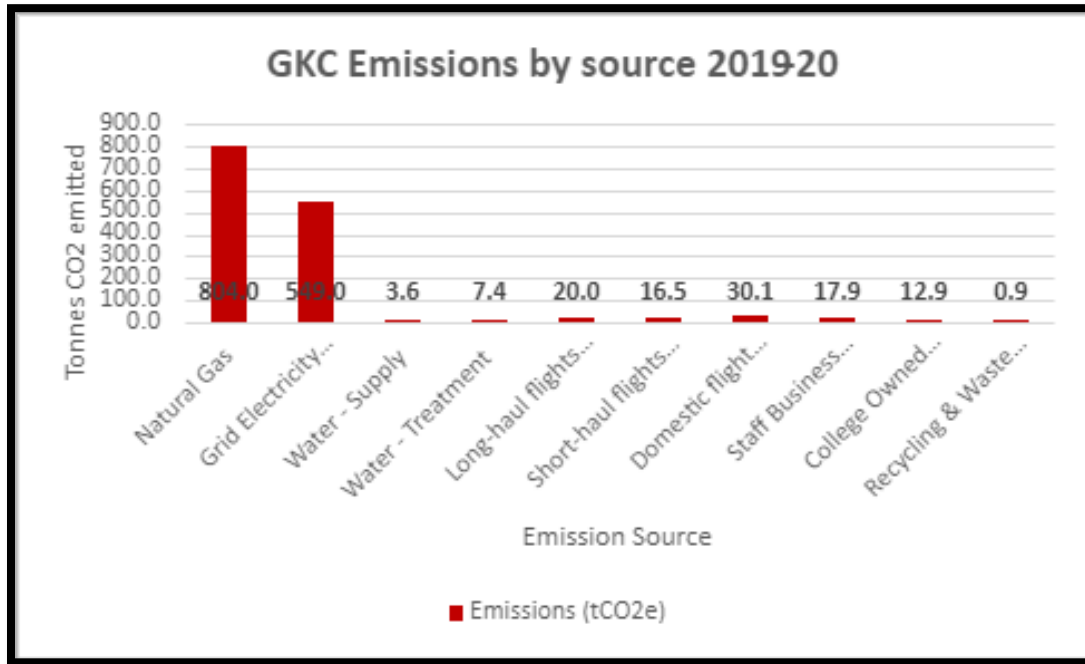


Table 2: GKC emissions by source, as measured in 2019/20.

Themes for Action

Glasgow Kelvin College has identified five Themes, which require a combination of both immediate and long-term action to achieve the goals proposed in this Climate Change Action Plan.

For each Theme, a list of Goals & Objectives has been created, with associated actions which set the framework for the College’s response to the Climate Crisis. These Objectives and Actions have been set out in a series of tables.

Theme 1: Engagement & Education

We must ensure that the Climate Crisis and Ecological Emergency is placed at the heart of what we do as a college, which is ‘Transforming Lives through Education’. As a Further Education institution, all that we strive to achieve must be to the benefit of our students and their futures. To that end, behavioural

changes regarding environmental sustainability, as well as the critical task of preparing students for the climate realities they will face are of paramount importance.

Glasgow Kelvin College is well placed to become a leader in comprehensive sustainable education and Green Job skills training. Climate change and sustainability teaching and learning already exist in the curriculum. The college will initially assess and establish a baseline of relevant activity and sustainability views among the College staff and students. This plan proposes to expand on existing programmes and engage widely with internal stakeholders.

Goals & Objectives	Actions
Gather the College's views on sustainability	Utilize focus groups & develop surveys to gather staff and student views on sustainability, with the goal of 70% representation.
Deliver Environmental Sustainability Training to staff & students (and community).	Create Environmental Sustainability Module with goal of 90% participation by year 2025. Future Action: Work with Glasgow Kelvin's partners to expand Sustainability Training to at least 6 community partner groups.
Publish and promote Glasgow Kelvin College's sustainability ambitions.	Update the College's sustainability webpage to make net zero target & intermediate objectives visible to internal & external stakeholders. Utilize digital media to promote sustainable learning, projects, and initiatives.
Raise awareness of college staff & students of Climate Crisis & sustainability choices.	Environmental Sustainability Manager facilitates at least one Staff Training, Student Orientation, and multiple Campus Green Events per year.
Increase biodiversity of campuses for staff, student, and community learning & engagement.	Expand impact and use of East End Community Garden & develop Green Learning Spaces on other campuses.
Incorporate sustainability into Glasgow Kelvin College's curriculum.	Audit climate change and environmental sustainability related learning in existing curriculum. Create a course-specific library of resources (articles, lesson & project ideas, films, and competitions) available to all faculties. ES Manager offers suggestions of where and how Education for Sustainable Development can be embedded throughout curriculum.
Establish Green Academy	Campus-wide collaboration to create course of study specifically targeted at preparing students for Green Job Market. Annual Green Job Career Fair

Theme 2: Energy Carbon Management

Through emission management, we will decrease greenhouse gas emissions. This is the most critical area for action in progressing towards our goal of Net Zero emissions. Approaching net zero emissions will require significant investment and innovation. Reaching our goals will necessitate commitment by Glasgow Kelvin towards renewable energy estates projects, as well as training as to how to minimize our consumption based on data obtained through energy audits. The project list will be assessed and expanded regularly as new renewable technologies, carbon reduction measures, and funding opportunities are identified.

Goals & Objectives	Actions
Implement estates updates to reduce GHG emissions and save on energy costs.	Realise energy conservation projects identified on project list (Appendix A). Apply for support from Scottish Central Government Energy Efficiency Grant Scheme.
Reduce water usage and costs.	Monitor water use and develop water reduction plan.
Harness digital technology to reduce energy use.	Improve baseline information and usage data, and support staff training of data interpretation and response to BEMS.
Refurbish existing buildings and design new buildings to minimize environmental impact.	Embed Climate Change Action Plan targets into estates strategy to ensure any building refurbishment work has sustainable outcomes in mind.
Improve space efficiency.	Foster collaborative working spaces with hybrid working practices in mind.
Reduce our IT carbon footprint.	Develop and implement a timed power shutdown of student and staff IT campus devices. Investigate and implement other power-saving innovations.

Theme 3: Sustainable Procurement

Responsible and sustainable procurement can have far-reaching effects on combatting climate change and reducing emissions. With increased attention being paid to Scope 3 sources of GHG emissions, it is critical for the College to evaluate its existing procurement practices and strive for ambitious improvements in considering the environmental impact when sourcing good and services.

Goals & Objectives	Actions
Create and report sustainable procurement goals aligned with Glasgow Kelvin and APUC priorities.	Collaborate with internal stakeholders, APUC College representative and ES Manager to create FNT2030 (From Now To 2030) sustainability frameworks related to: Furniture, Construction, Food, Labs, Travel, and Energy
Measure and assess carbon emissions due to procurement.	Create scorecard to evaluate suppliers to the College on their emissions and sustainability practices.
Achieve Zero Waste Events	Initiate feasibility study, then create action plan and list of vendors to achieve zero waste events on campus.
Comply with emerging reporting legislation.	Develop measurement and reporting mechanisms for Scope 3 Sources (which include contractor emissions, procurement and supply chain, and business accommodations)
Enhance procurement activities by collaborating and sharing knowledge with other FE/HE institutions.	Develop relationship with APUC Sustainability Manager, and procurement teams at other Colleges.
Reductions via reduced waste in supply chain	Explore refurbished products and ask suppliers about products that can be serviced and repaired as opposed to replaced.

Theme 4: Sustainable Travel

Behind gas and electricity emissions, the emissions associated with travel at Glasgow Kelvin are the next largest producers of GHGs. This includes flights as well as staff travel by car, taxi, rail, or bus. While the solution is simple in theory, enabling sustainable travel can be difficult to achieve as an institution, as much of the emissions are due to staff choices and behaviours. However, the College aims to reduce the carbon footprint of estate vehicles and transport and will provide support for staff behaviour changes around travel.

Goals & Objectives	Actions
Increase utilisation of campus electric vehicles for transportation needs.	Installation of electric vehicle charging stations on all four campuses. Increase fleet of electric vehicles.
Decrease emissions due to staff transportation.	Promote utilisation of the College's cycle resources to increase active travel to and from campuses. Incentivise use of public transportation or active travel. Map safe cycle and walking routes around campuses.
Decrease emissions related to business travel.	Further improve IT platforms and promote hybrid working and remote attendance of conferences and workshops. Create a policy to prioritise lower-emission transport options for business travel.

Theme 5: Circular Economy

Part of the response to the climate emergency involves reducing our consumption of goods, by extending the lifespan of assets, reusing and repurposing items, and minimizing the amount of material that ends up in the landfill. Glasgow Kelvin has numerous examples of ways in which it supports the circular economy, including donating wood shavings from our Construction courses to a horse centre, donating IT products through Re-Tek, and working with community partner programmes to find new homes for gently used office furniture and equipment. Because the more widespread resources supporting the circular economy are still being established and becoming mainstream, the College foresees much growth and additional goals being added to this Theme in the coming years.

Goals & Objectives	Actions
Promote the circular economy	Deliver an event at the College, in collaboration with community partners, to teach and promote the value of a circular economy.
Reduce Food waste	Create composting sites on all campuses with community gardens or Cookery courses. Incorporate Food Waste lesson into Cookery curriculum.
Improve ease of upcycling and reuse of assets on campus and with community partners.	Create Glasgow Kelvin asset reuse portal to allow for upcycling and decrease waste. Partner with community organisations and programs to donate used assets.

Appendix A: Energy Conservation Project List

Scope 1: Scope 1 emissions include the Green House Gas (GHG) emissions that result from the day-to-day operations of the Campus Estate. This is a significant source of emissions, and include emissions related to building on-site heating and college vehicle use.

Source of Carbon Emission	Baseline tCO ₂ e	Proposed Actions	Time-scale	Cost*	tCO ₂ e savings
Gas: Campus Heating Systems	790	Replacement of 1-2 gas boilers with renewable heating alternative (Springburn campus) *	3-5 yr	£500,000 - £2M	30-60% decrease (SB)
		Installation of PV Panels for under-floor heating *	3-10 yr	£500,000 - £1M	10% decrease
		Estate Staff training in BEMS data analysis, interpretation, and response to maximize heating efficiency	1-2 yr	0 - £5,000	10-20% decrease
		Gas Boiler Replacements with renewable alternative throughout 4 College Campuses*	5- 20 yr	£1-5 M	80- 100% decrease
Transport: Campus Vehicle Fleet	16.5	Installation of EV chargers at each campus to increase use of College EVs	1 - 5 yr	£10,000- 50,000	5 –10% decrease
		Renew lease of current EVs & purchase EVs to replace remaining diesel vehicles	3-10 yr	£50,000- £2M	70- 90% decrease

*Feasibility dependent on funding support from sources such as Scottish Central Government Energy Efficiency Grant Scheme.

Scope 2: Scope 2 emissions are those GHG emissions which are indirectly attributable to Glasgow Kelvin College. These include purchased energy. It is the hope of the College that our journey to Net Zero will be aided by further decarbonisation of the energy grid.

Source of Carbon Emission	Baseline tCO ₂ e	Proposed Action	Time-scale	Cost	tCO ₂ e savings
Purchased Electricity Use	701	Installation of PV Panels to minimize reliance on electrical grid*	3-10 yr	£500,000 - £1M	10-40% decrease
		Replace remaining lighting systems with LED lights*	1-3 yr	£10,000- 50,000	10-20% decrease
		Estate Staff training in BEMS data analysis, interpretation, and response to maximize energy efficiency	1 – 2 yr	0 - £5,000	10-20% decrease
		Improve space efficiency by fostering collaborative working spaces & hybrid working practices.	1 – 2 yr	0 - £5,000	1-5% decrease
		General energy efficiency estate improvements in ventilation, insulation, heating, etc.	1-20 yr	£3 M	5-25% decrease
ICT Electricity Use		Develop and implement a timed power shutdown of student and staff IT campus devices. Investigate and implement other power-saving innovations of IT systems.	1-3 yr	£0	5 –10% decrease

*Feasibility dependent on funding support from sources such as Scottish Central Government Energy Efficiency Grant Scheme.

Scope 3: Scope 3 emissions are often difficult to accurately account for, and therefore difficult to set action plans to address, as these encompass all the emissions that the College is associated with up and down its value chain. Scope 3 emissions include purchased goods and services, travel emissions (business and commuting), as well as emissions from waste and water. Meaningful reductions in Scope 3 emissions are contingent upon other partner businesses, institutions, and individuals making similar commitments towards carbon neutrality.

***Some of the College's Scope 3 Baseline carbon emissions are not available, but the College aspires to identify more complete and accurate methods for collecting Scope 3 data in the future.*

Source of Carbon Emission	** Baseline tCO ₂ e	Proposed Action	Timescale	Cost	tCO ₂ e savings
Staff business travel (flights)	37.3	Create policy to encourage the use air travel as transportation mode of last resort.	1-3 yr	£0	5 –10% decrease
Staff business travel (other)	22.4	Create policy to encourage renewable modes of transportation over driving, as well as encouraging participation in virtual conferences & meetings.	1-3 yr	£0	5 –10% decrease
Staff Commute	**	Promote utilisation of the College's cycle resources to increase active travel to and from campuses. Incentivise use of public transportation or active transportation	1-3 yr	£0	5 –10% decrease
		Further improve IT platforms and promote hybrid working.	1-3 yr	0 - £5,000	5 –10% decrease
		Install more EV charging stations to encourage staff to choose electric or hybrid vehicles.	1 - 5 yr	£10,000-50,000	5 –10% decrease
Purchased Goods and Services	**	Explore refurbished products and strive to use suppliers who offer products that can be serviced and repaired as opposed to replaced.	1-20 yr	0 - £5,000	10-20% decrease
		Engage with APUC Sustainability team to utilise resources and frameworks referenced in FNT2030 sustainable procurement strategies.	3-5 yr	0 - £5,000	5-10% decrease
		Create scorecard to evaluate suppliers to GKC on their emissions and sustainability practices & select suppliers based on said evaluation.	3-5 yr	0 - £5,000	5-10% decrease
Waste	23.4	Work with ENVA to develop a plan to continue to reduce emissions due to waste management.	1 – 20 yr	0 - £5,000	10 – 20 % decrease
Water	14.5	Continue to monitor water use and identify ways to reduce consumption and waste.	1 – 20 yr	0 - £5,000	10 – 20 % decrease