

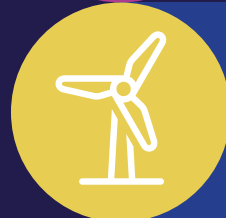


MAKING  
LEARNING  
WORK



# NET ZERO PLAN

2023–2027





## PRINCIPAL'S FOREWORD

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Climate change poses a serious and growing threat to our global community and to the planet which we call home. Urgent action to tackle climate change is required across all aspects of society and the way we operate at Forth Valley College is no exception.

As a nation Scotland has ambitious targets for cutting greenhouse gas emissions and I am proud to say that our own targets for the College match and even exceed these where possible. To achieve these targets and to reduce Forth Valley College's emissions will take hard work from all areas of the College – as demonstrated by the breadth of actors and actions included in this new Net Zero Plan.

I am confident, however, that Net Zero is something that we can achieve together. When I look back at our response to the COVID-19 pandemic, opening our campuses to the communities of Alloa, Falkirk and Stirling as vaccination centres and adapting our classes to new restrictions, I am reassured that we have the skills and determination to respond to world-changing crises like climate change.

It is worth remembering, however, that addressing climate change is just one aspect of the wider efforts for sustainability underway at the College – particularly as we struggle with the current cost of living crisis. To this end I signed the **SDG Accord** which commits the College do more to achieve the **United Nations Sustainable Development Goals (UN SDGs)** goals and to embed sustainability into every aspect of our work. These goals were introduced to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere in a global partnership.

We have already made impressive progress to reduce our overall emissions. Since we first recorded our operational emissions in 2009 we have managed to reduce these by around half. This is despite our ongoing work to increase the accuracy of our emissions reporting by adding new sources of emissions into our reporting – to make this as comprehensive as possible. These reductions are partly thanks to the construction of our 3 modern campuses which already include numerous energy efficiency measures and renewable technologies. Our campuses give us a great foundation to build in further improvements and to address other elements of our carbon footprint.

As individuals and collectively, we must continue do all that we can to reduce our emissions which contribute to climate change and to ensure that we are prepared for the already unavoidable impacts of our changing climate, including increasingly extreme weather events. This Plan outlines the structure and initial actions required to do this and marks the beginning of the next phase on our journey to Net Zero.

**Kenny MacInnes**  
Principal & Chief Executive



## INTRODUCTION

In June 2019, the UK became the first major country to legislate for a net-zero target for carbon emissions by 2050. Based on the Climate Change Committee’s recommendation, the Scottish Government have since developed their own **Net Zero Plan** to meet its key pledge to end the nation’s contribution to the climate crisis by 2045.

Scotland’s colleges are all committed to achieving net-zero by 2040 or earlier. Forth Valley College have developed this Net Zero Plan with a view to embedding Scotland’s colleges aims across all our activities to ensure we play a key role in achieving absolute emissions reduction by 2040.

### SCOTTISH COLLEGE’S 10 KEY ACTIONS:

- 1 Support Scotland’s efforts to achieve net-zero climate emissions by 2045 or earlier if possible, with Scotland’s colleges aiming to achieve net-zero by 2040 or earlier.
- 2 Embed environmental sustainability in our institutional strategies and set measurable targets.
- 3 Address the **UN’s Sustainable Development Goals** in our strategies.
- 4 Share best practice within and beyond the college/university sector.
- 5 Deploy our expertise and experience to combat climate change.
- 6 Contribute to public debate on climate change and use the power of our example to encourage others.
- 7 Work with Scottish industry, employers, public sector bodies and others to improve working practices and find practical solutions to climate change and to make our planet safe for future generations.
- 8 Encourage where appropriate, colleges to adopt the UK HE/FE Climate Commission’s **‘Climate Action Roadmap for FE Colleges’**
- 9 Each college will publish action plans to address on-campus and supply chain emissions, setting out what steps they will take over a five-year horizon and beyond where possible, and what they aim to achieve to address the climate emergency.
- 10 Educating staff, students, employers and communities on the impact their daily lives and working practices have on the environment/climate. While working with our partners, local employers and communities to ensure everyone is aware of their personal responsibility to our planet.

## VISION

We recognise that the changing climate will have far reaching effects on Scotland’s economy, people and environment. Our vision is to lead by example in all our activities and to ensure that our staff, partners and learners are aware of the impact their actions have on the environment. This commitment is supported by the College’s **Sustainability Statement** that is approved annually by the Board of Management and College Principal. Our commitment to carbon reduction is central to the college mission statement of “Making Learning Work” and is reflected in our Strategic Objectives from our **Strategic Plan**:

Our Principal has also signed the **SDG Accord** which is a commitment to do more to achieve the goals and to embed sustainability into every aspect of the college’s work. To this end we will map actions in this plan, and elsewhere, against the SDGs and we will complete the SDG Accord’s annual reporting to monitor our progress.

To develop this plan and to assist the delivery of emissions reduction projects FVC joined the Central and South Scotland Colleges Partnership (CSSCP) with Borders College, West Lothian College and EAUC – the sustainability alliance for universities and colleges. In 2022 CSSCP hired a Sustainability Project Manager who is leading on the development of a new plan.

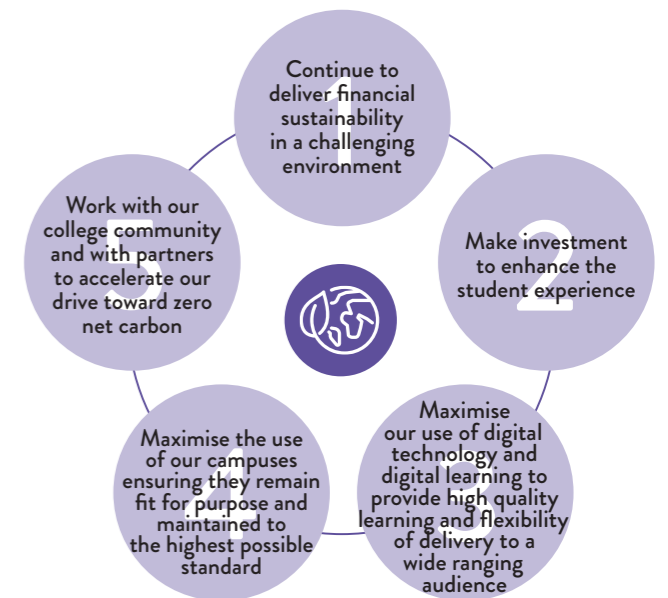
To track progress and to identify opportunities for emissions reduction FVC has adopted the UK HE/ FE Climate Commission’s **Climate Action Roadmap for FE Colleges** which outlines a pathway of actions for colleges to follow towards Net Zero.

The College’s NZP is a ‘live’ document which will continue to evolve on an annual basis, as we review our aims and targets to ensure we are continually improving methods and procedures to reduce our Carbon Footprint. The NZP will continue to be monitored by the Estates Development Department and the Sustainability Committee.

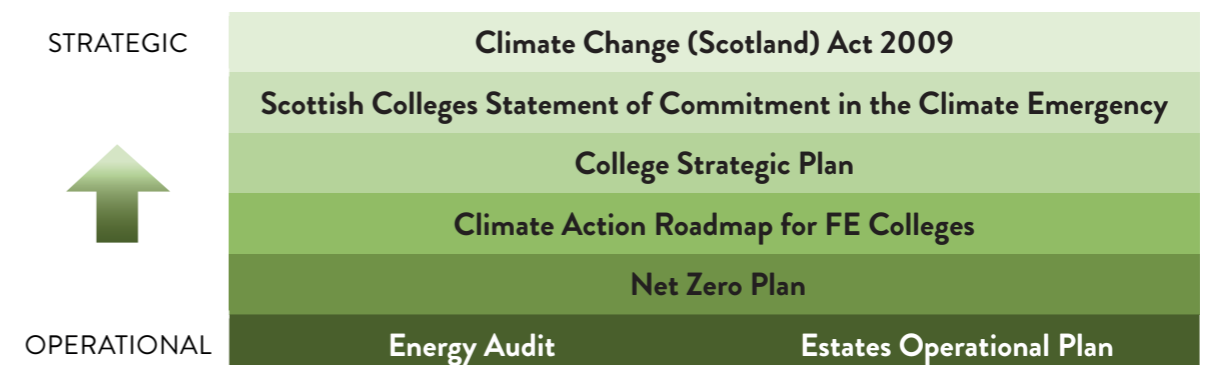
### Our 4 Strategic Objectives



### Driving a Sustainable Future



### STRATEGIC CONTEXT:





## BACKGROUND

Forth Valley College was established in 2005 through the merger of Falkirk and Clackmannan Colleges and now delivers 750 courses to 14,500 students from campuses which it owns and operates in Alloa, Stirling and Falkirk.

The Alloa and Stirling campuses (opened in 2011 and 2012) are BREEAM Excellent Buildings with in-built energy efficiency measures and renewable technologies including solar thermal panels and rainwater harvesting. Heating is provided exclusively by gas boilers. The Falkirk campus (opened 2020) is BREEAM rated Very Good and features a roof mounted 20.5 kWp PV array. The Falkirk campus is heated by a solar photovoltaic (PV) array and gas boiler system.

The College estate has undergone significant changes and investment in the years since the previous Carbon Management Plan was produced, including the opening of our new Falkirk Campus.

Campus	Opened	GIA*	EPC** rating	BREEAM***
Alloa	2011	5,786m <sup>2</sup>	B (2021)	Excellent
Stirling	2012	7,898m <sup>2</sup>	C (2022)	Excellent
Falkirk	2020	20,703m <sup>2</sup>	B (2019)	Very Good

\*Gross Internal Area

\*\*Energy Performance Certificate

\*\*\* Building Research Establishment Environmental Assessment Method



## HISTORIC EMISSIONS

Forth Valley College signed their first Universities and Colleges Climate Commitment for Scotland in 2009, and prepared a 5-year Climate Change Action Plan (CCAP) in conjunction with the Carbon Trust. This initial plan had set a 25% (tCO<sub>2</sub>) reduction as our 5 year objective. The emissions included related to the energy (gas and electricity) and water used in the buildings and fuel for transport (grey fleet and college vehicles). It did not include waste. The original baseline year was 2008/2009 which resulted in a carbon emissions baseline calculated at 2873.15 tonnes of carbon dioxide on our 2008-09 estate size of 38,507m<sup>2</sup>. The overall floor area is now 34,387 m<sup>2</sup>.

**Sustainable Scotland Network (SSN)** are now responsible for developing and publishing data on carbon management for all Scottish public bodies. In November 2015 there was an introduction of a new reporting template and this

was to be a trial year only; 2016 started the mandatory reporting and annual reporting continues each November. The baseline for this report and the targets included is 2013/14.

Reporting includes emissions in tonnes carbon dioxide equivalent (tCO<sub>2</sub>e) for gas, electricity (generation and transmission), water, waste and business transport. Homeworking emissions were included for the first time in 2021 and commuting and supply chain emissions are to be added in 2022. A full breakdown of the emissions sources reported each year can be found in [Appendix 1](#).

Emissions factors for each category are supplied by SSN on the required reporting template and are updated each year according to figures from [Department for Business, Energy & Industrial Strategy \(BEIS\)](#).

### HISTORIC EMISSIONS (tCO<sub>2</sub>e)

Year	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
<b>Natural Gas</b>		560	510	533	591	534	582	607	575
<b>Electricity</b>		1801	1491	1255	1041	930	792	565	617
<b>Water</b>		14	15	15	12	13	17	3	1
<b>Waste</b>		11	13	41	8	6	3	14	2
<b>Business Travel</b>		114	97	92	130	109	61	18	51
<b>Homeworking</b>		0	0	0	0	0	0	146	56
<b>Total</b>	2687	2499	2126	1937	1781	1592	1454	1354	1302
<b>% baseline</b>	100%	93%	79%	72%	66%	59%	54%	50%	48%

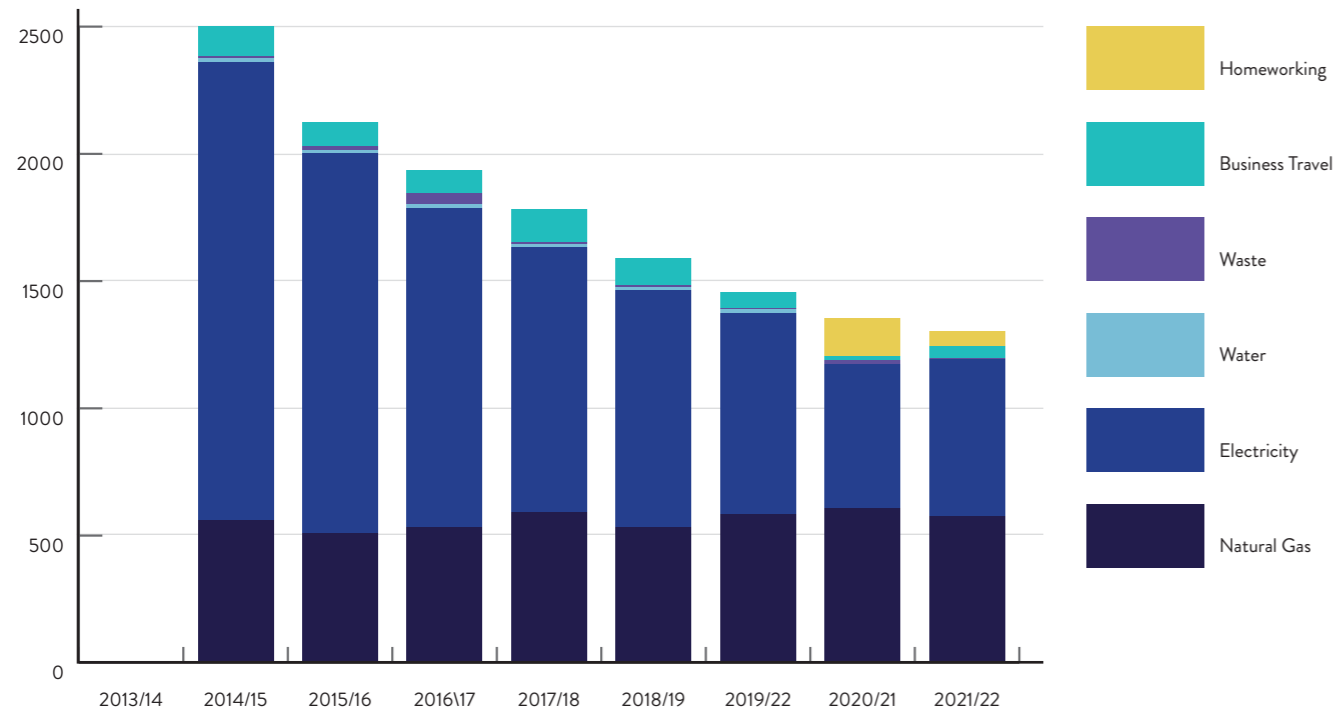
The College has achieved successive emissions reductions year on year, despite the widening scope of emissions included in reporting. This has been due in part to decreasing emissions factors (e.g. grid electricity as this transitions to increasingly renewable sources).

The COVID-19 pandemic reduced emissions yet further particularly during the 2019/20 and 2020/21 reporting

years, as the College campus has been periodically closed and working patterns for both students and staff have changed, with increased levels of remote working. It remains to be seen how this affects longer term trends and the emissions attached to this and this Plan must consider the potential for emissions to return to pre-pandemic levels and how this can be avoided.



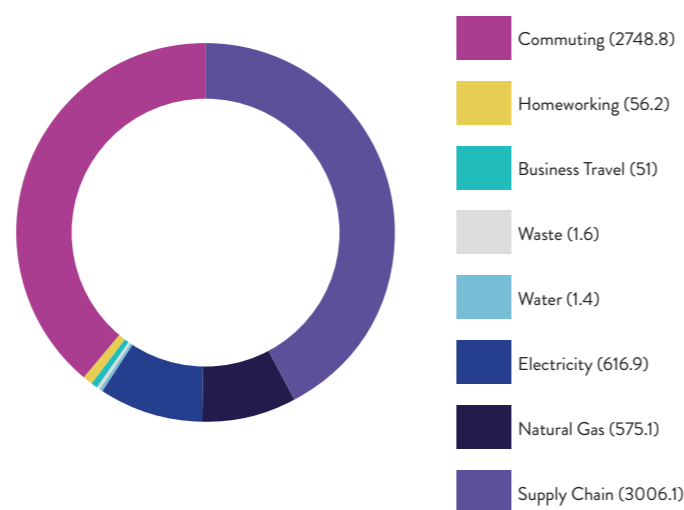
## HISTORIC EMISSIONS (tCO<sub>2</sub>e)



Understanding how the pandemic effected our energy usage and what this will mean for future emissions is further complicated as each of our campuses were used as vaccination centres during the course of the pandemic. This involved long days of operations and energy use, meaning that energy savings over the course of the various lockdowns and restrictions were not as stark as if our campuses had been fully closed. This is particularly the case at our new Falkirk campus, where we are yet to record a full year of normal operations due to COVID-19 restrictions.

In 2022 we included our supply chain and staff and student commuting emissions for the academic year 2021/22 in our reporting to SSN for the first time, along with much of the Scottish public sector. As shown in the chart below this increased our total emissions substantially, despite reductions to our emissions from sources previously reported. As this plan goes on to explain, we will work to reduce these newly reported emissions and to produce separate targets for these where possible.

## EMISSIONS REPORTED 2021/22 (tCO<sub>2</sub>e)



## EMISSIONS TARGETS

Forth Valley College, alongside all of Scotland's colleges, is committed to achieving net-zero emissions by 2040 or earlier.

The Scottish Government has also set further targets that apply to Scotland's colleges:

- Zero waste to landfill by 2030.
- Zero direct emission from all buildings by 2038.
- Zero direct emissions by 2045 at the latest.

The College will set robust science-based targets to achieve Net Zero as an institution, once a sector-wide framework/methodology for this has been established. It is crucial that the College's targets are both ambitious and realistic. Currently frameworks such as the **Science Based Targets Initiative** only cover commercial businesses and not public bodies. EAUC are working to produce a new framework which is specific to the sector and we will use this to produce Science Based Targets once this is available. Until such a framework is published we will work towards the absolute targets provided by the Scottish Government (at the latest) and the below interim targets during the lifespan of this Plan:

	Interim Target (2027/28)	Absolute Target Date
<b>Net Zero Emissions</b>	42% of baseline	2040

Our interim targets are based on predicted reductions to the emissions we have historically reported to Scottish Government (predominantly from the last year of normal operations prior to COVID-19, 2018/19). As such these targets include the following sources of emissions:

- Natural Gas
- Electricity
- Refrigerant Gases
- Water
- Waste
- Fleet vehicles
- Business Travel
- Homeworking

These targets are based on energy usage and College operations to date. This means that, for example, should College operations expand by significantly increasing student numbers, then these targets will need to be re-adjusted and may otherwise be missed.

As we have recently reported our supply chain and staff and student commuting emissions for the first time, these have not been included in scope of the above interim targets. Instead we will work to produce separate targets for these where possible. This will not affect our absolute targets for Net Zero, however, as these include all the emissions on which we will report.

Our targets take into account several potential energy efficiency projects (solar PV and LED) – delivery of which will depend on the availability of financial support from Scottish Government. By conducting a detailed audit of our estate (Sub-root 4.1), with support from the Scottish Government, we plan to identify further projects and to thus make future targets more ambitious to account for these. The interim targets also assumed gradual reductions in emissions from other sectors (e.g. **Network Rail's 2045 target**) and as such will rely on these sectors to adhere to their own targets.

Subsequently these targets will be reviewed annually and may be revised. Such revisions could include more ambitious targets to include further energy efficiency projects or potential changes in reporting, such as the potential to use local electricity grid carbon factors as opposed to national figures (currently electricity generation in Scotland is less carbon intensive than the UK as a whole).

A more detailed summary of the assumptions made when producing these interim targets can be found in **Appendix 2**.

While this Plan is designed to serve the 5 years from the 2022/23 academic year until the end of the 2026/27 academic year, we recognise that action will need to be taken in the following 13 years leading up to Scotland's Colleges' Net Zero Target of 2040. As such, many of the actions undertaken over the lifetime of this plan will prepare for further action to taken in the longer-term e.g. an energy audit of the estate will identify projects which may not be possible to deliver by 2027.

It is worth recognising that without further action we estimate that by 2040 the College will still emit 27% of its baseline emissions (670 tCO<sub>2</sub>e), based on the assumptions made when creating the interim targets in this plan. Approximately 86% of this is made up of emissions from gas-fired heating and 5.9% from electricity consumption. As such, there is critical need to develop and invest in significant projects to reduce energy use on campus.



## APPROACH

We are well aware that Forth Valley College needs to reduce the emissions we produce through our operations, practices and strategies. Our aim is to develop a range of projects that will continue to deliver both significant carbon reductions and cost savings and to embed carbon management in College operations. Looking forward, we need to consider emissions from our supply chain and commuting. While we will introduce initiatives to offset our emissions, we will prioritise reducing emissions.

This plan sets out actions and initiatives we will achieve as we transition towards Net Zero. In addition to helping achieve the government’s targets and our aims, it will provide a sound basis for our students and staff to live, support and promote sustainability in their everyday lives. All areas of the college will have a role in implementation and students will be involved in all aspects. To demonstrate this and to ensure that our approach tackles the numerous aspects of sustainability, the Net Zero Plan’s associated Action Plan (**Appendix 3**) is mapped against key SDGs and the FE Climate Action Roadmap.

Delivery of this Plan will focus on four key areas (loosely based on the Climate Action Roadmap), which form the Roots of the below organisational tree. Specific categories of actions then grouped into Sub-roots within these. Actions against each of the Sub-roots are then summarised in the Action Plan (**Appendix 3**).



## ROOT 1: LEADERSHIP

To deliver on our targets we need strong leadership across the College with a clear understanding of our responsibilities, plus the finances and procurement practices required to deliver action.

### 1.1 GOVERNANCE

The delivery of this Plan will be the responsibility of the 4 working group leads, who will report to the College’s wider Sustainability Committee at quarterly meetings. Individual teams and members of staff will be responsible for specific actions agreed with the working group leads, to whom they will report progress at regular meetings.

The Sustainability Committee, chaired by the Vice Principal Infrastructure and Communications, will work with the Sustainability & Soft Services Manager and Sustainability Project Manager to review progress against the Plan’s Action Plan on an annual basis and will identify remedial actions where required.

The below table summarises the leads for each of the Roots and associated working groups, a full breakdown of responsibilities for each Root and Sub-root can be found in **Appendix 4**.

Root	Chair
<b>1: LEADERSHIP</b>	Principal
<b>2: DEVELOPMENT</b>	Vice Principal Information Systems and Communications
<b>3: ENGAGEMENT</b>	Vice Principal Learning & Student Experience
<b>4: OPERATIONS</b>	Head of Estates, Facilities & Health & Safety

Progress against the Net Zero Plan will be reported annually to the College Senior Management Team and to Scottish Government through annual submissions to SSN.

To carry action forward throughout Forth Valley College our current **Strategic Plan** includes “Driving a Sustainable Future” as one of our 4 Strategic Objectives. As such we will continue to embed emissions reductions and sustainability in strategic planning documents when they come to review.

Following the implementation of this plan we will further integrate sustainability and carbon reduction into our leadership arrangements by adding a new standing item to executive group and governing board meetings to update on delivery of the targets included in this plan. Additionally, all reports to the Senior Management Team will be required to confirm how proposals will impact sustainability.

### 1.2 FINANCE

Significant investment will be required to deliver on our Net Zero targets – particularly to reduce the emissions from our buildings. As such we will work to integrate these targets into our business planning and reporting.

For large-scale projects we will continue to apply for funding for capital works from Scottish Government and other sources, where relevant.

In addition to seeking external funding for new projects, we will make financial support available internally by offsetting the cost of initiatives against the savings these will provide.

### 1.3 PROCUREMENT

It is important to recognise that our carbon footprint extends beyond the boundaries of our campuses and should include the products and services we procure from our supply chain.

The College has a strong partnership with APUC (Advanced Procurement for Universities and Colleges), who are responsible for our procurement services. APUC are working to improve the sustainability of our supply chain, reaching as far into this as reasonably possible and we will work with them to continue this e.g. by engaging with campus food suppliers to offer more sustainable options.

The targets included in this plan do not include supply chain emissions, as at the time of writing we are yet to record these. We will work with APUC to report these going forward and having done so we will set targets to reduce such missions. These targets are likely to be considered separately to those already included in this plan, as The Scottish University and College Sectors Supply Chain have published their own net-zero target of 2030.



## ROOT 2: DEVELOPMENT

Our efforts to tackle climate change must go far beyond a focus on reducing emissions and must remain forward looking. We will develop new approaches to track our emissions, to adapt to our changing climate and to offset our emissions.

### 2.1 DATA COLLECTION

Since 2015 the College has reported its carbon emissions annually to **Sustainable Scotland Network (SSN)**, who are responsible for developing and publishing data on carbon emissions for all Scottish public bodies. Reporting our emissions helps us to track our progress to net zero and forms the basis for the targets included in this Plan. We will continue to report on our emissions in this way each November. To help our leadership, staff and the public to better understand our journey to net zero we will do more to share the information from these reports both internally and externally.

Additional emissions categories have been added to the reporting requirements periodically and this is set to continue in 2022 when supply chain and commuting emissions are to be included. This will increase the overall carbon footprint of the college and will need to be considered in the context of existing baselines and targets. To improve our own reporting and to help others to learn from our experience we will work together with other institutions, e.g. EAUC's annual peer review process.

Finally, we will build upon the interim emissions targets included in this Plan by adopting more robust, science-based targets once a sectoral framework for these has been established by EAUC in the coming years.

### 2.2 ADAPTATION

While the focus of this plan is on reducing emissions to help prevent the worst impacts of climate change it is important to recognise that our climate is already changing and is likely to continue to do so.

The effects of climate change threaten almost every aspect of the college's work – from teaching, infrastructure, supply chains and travel. We must be prepared for the potential impacts of climate change and we will achieve this by working to integrate these risks into our existing risk management structures.



Some of the risks posed by climate change were accounted for during the design of our campuses, including anticipated changes in flood risk and threats to thermal comfort from extreme weather. To record such risks in a structured manner, to identify further risks and to develop measures to counter these, we will produce an Adaptation Plan. Our Sustainability Project Manager is a member of Adaptation Scotland's Benchmarking Working Group and, with guidance from Adaptation Scotland, will lead on the development of this Plan through collaboration with CSSCP.

### 2.3 OFFSETTING

We recognise that despite our best efforts to reduce our carbon emissions, it may be impossible to cut these to absolute zero. For residual emissions which cannot be avoided we will consider offsetting as a last resort.

Carbon offsetting involves investing in projects which help to remove carbon dioxide from the atmosphere (e.g. tree planting, peat restoration or carbon capture and sequestration) – to compensate for emissions from elsewhere. We will do everything we can to minimise the need to offset by first reducing our emissions.

As we move towards our net zero target we will identify offsetting opportunities and develop a plan for these in line with sectoral guidance, e.g. The Oxford Principles for Net Zero Aligned Carbon Offsetting. Where possible these will prioritise nature-based projects in Scotland which meet quality standards such as the Woodland and Peatland Code, or similar standards recognised by government. Wherever possible, our approach to offsetting will focus primarily on projects local to the College, in order to deliver the greatest benefit to both local communities and ecosystems.

As we implement our Offsetting Plan we will develop opportunities for students and staff to learn more about the processes involved in offsetting.



## ROOT 3: ENGAGEMENT

To achieve our Net Zero targets we need to work together with our students, staff and partners to inspire real change and to encourage well-informed, sustainable choices.

### 3.1 PARTNERSHIPS

The climate crisis requires a collaborative response with strong, ambitious leadership in order to deliver real change and partnerships will be central to this. We will work with others to promote sustainable practice and to help measure our own progress.

The UN SDGs are central to our approach and to this end we are signatories to the **SDG Accord**, which is a commitment to embed sustainability into every aspect of the college's work. To monitor progress we will complete the SDG Accord's annual reporting.



We will continue to engage students and staff in events to encourage them to think about their own carbon footprint and the behaviours they can adopt to become more sustainable on campus and at home. To do this our Sustainability Committee will develop a programme of events (e.g. Earth Day) to be delivered across the college. When designing this programme we will consult students and staff to understand how to best reach our students and staff on the sustainability topics they consider to be important.

We have an already successful track record of reducing emissions and fostering sustainable practice, testament to which in 2021 the College was a finalist in the Sustainability Institution of the Year category at the UK & Ireland Green Gown Awards. Engaging with our students, staff and partners on sustainability related topics and opportunities for emissions reduction has been crucial to this success. By working with our partners, including

CSSCP and EAUC, we aim to demonstrate effective leadership within the sector and to share learning with other institutions.

### 3.2 LEARNING & TEACHING

In addition to taking steps to reduce our own carbon footprint and to promote sustainability habits on campus, we will work to ensure that sustainability is integrated into the curriculum.

To do this we will raise awareness of the SDGs among our students and staff. This will include encouraging teaching staff to take part in events related to the SDGs, including SOS-UK's **SDG Teach-In** which involves staff making a pledge to highlight the goals during the teach-in each year.

To ensure that we are addressing the SDGs in a structured way, throughout our teaching, we will also conduct an audit of our curriculum. This will help us to identify which aspects of sustainability our courses current address and to identify further opportunities to integrate other SDGs. We will also complete the reporting associated with the SDG Accord to monitor our overall performance against the SDGs.

### 3.3 KNOWLEDGE

Given the scale of action required across the College and our wider communities, we need to help both students and staff to better understand the causes and impacts of our changing climate.

As such, we will offer training to students and staff that will equip them to reduce both their own and the College's emissions. We will consider how this will be best conducted e.g. through College Development Network's (CDN) new online short course 'Introducing Action for Sustainability' or through accredited Carbon Literacy Training courses. During this process we will also conduct a sustainability survey of our students and staff, to gather their views on sustainability and to identify areas for action.

Once decided, we will produce a separate Climate Skills Plan outlining how this will be delivered. This will also consider how we will further embed knowledge of climate change and sustainability in staff development, e.g. by including knowledge of SDGs in job descriptions.



## ROOT 4: OPERATIONS

To date the majority of our emissions have come from the everyday operations of our campuses, primarily from heating and lighting our buildings. By taking steps to reduce these emissions we will also aim to improve our campuses for students.

### 4.1 ESTATES

We are fortunate that each of our campuses is relatively modern; the oldest, Alloa was opened 2011 and the newest in just 2020. As a result, these were built to a high standard of energy efficiency. We have also delivered numerous projects to improve energy efficiency and reduce emissions including solar thermal systems, EV chargers, rainwater harvesting and food waste processors. The new Falkirk campus alone features solar PV, LED lighting and the UK's first ground source heat pump using large scale driven pre-cast energy piling.

There is room for improvement, however, as heating and lighting our buildings makes up a significant proportion of our emissions - 87% of the emissions reported in 2020/21. In particular, we need to move away from gas-fired central heating by 2038. We will also develop projects to reduce the amount of electricity used on campus and to generate as much of the electricity we do need ourselves through onsite renewables.

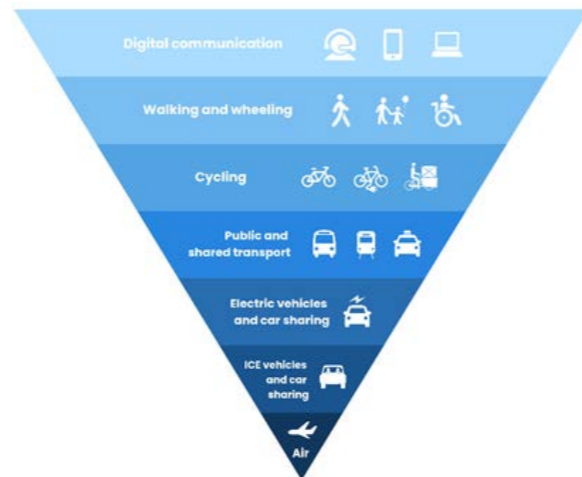
To identify and develop opportunities for energy efficiency and renewable technologies we will undertake a detailed energy audit of our campuses. Once this is complete we will then seek funding from the Scottish Government to deliver a programme of projects to reduce our onsite emissions. The projects identified through this process will form part of an updated Estates Strategy which will integrate their delivery into the wider use of our estate. We will also use the data from this audit to update this Plan e.g. by producing more ambitious targets to include projected emissions savings.

In addition to pursuing large-scale infrastructure projects we will seek opportunities to use our existing estate more efficiently. We will continue to work alongside our Total Facilities Management provider to reduce energy use without the need for external funding (e.g. by adjusting heating controls/timings).

To encourage further savings and to highlight our successes we will report internally the emissions reductions we achieve through these projects.



### 4.2 TRANSPORT



#### SUSTAINABLE TRAVEL HIERARCHY TRANSPORT SCOTLAND

Prior to the COVID19 pandemic business travel emissions made a significant portion of our carbon emissions (7% in 2018/19), however, these emissions decreased dramatically as lockdowns and changing working practices affected our need to travel. As students and staff are now returning to campus for classes we need to understand how we can encourage adoption of more sustainable travel options and capitalise on changing habits. We will do this in a number of ways and will take guidance from Sustainable Travel Hierarchy.

Firstly, we will encourage our staff and students to change their own habits by making use of active travel or public transport. Our Active Travel Officer will help to advise staff and pupils on their options and promote cycling, walking and wheeling to our campuses.

As previously mentioned, we will continue to survey and report on our commuting emissions as we did for the first time in 2022. This will also help us to better understand how our students and staff travel to our campuses and to develop initiatives to encourage more sustainable commuting.

We will use the findings of this survey to update our **Strategic Travel Plan**, which will aim to capitalise on changes in travel habits brought about by the COVID pandemic i.e. encouraging remote meetings and discouraging business travel where possible. This will also outline the principles to be adopted during the decision-making process for when

business travel will be permitted (e.g. the **Tyndall Centre Travel Strategy**). The new Strategic Travel Plan will feature a phased reduction of domestic flights for business travel within the mainland UK and set a provisional target to reduce overall business travel by 20% post-pandemic – both of which have been factored into the interim targets included in this Plan.

For instances where it is not appropriate or practical to use active travel modes or public transport, we are supporting the use of electric vehicles. Currently we have several electric vehicle charge points on our campuses:

- 2 dual charge points in Falkirk – available to the public
- 1 dual charge point in Falkirk – for college vehicles only.
- 1 dual charge point in Stirling - available to public
- 1 dual charge point in Alloa – for college or staff vehicles only.

Currently our fleet is made up of 3 electric cars (2 x Nissan Leafs, 1 x Vauxhall Corsa), 1 electric van (Renault Kangoo), 2 long wheel based minibuses and 2 chilled vans. In our new Strategic Travel Plan we will include measures to increase the availability of vehicle charging and to replace all remain fleet vehicles powered by internal combustion engines with zero-direct-emission alternatives.

### 4.3 BIODIVERSITY

It is important to recognise that, in addition to the ongoing climate crisis, we are also facing an ecological crisis which will only be exacerbated by rising temperatures and more extreme weather. We have a responsibility to improve biodiversity on campus, to give nature a home and to offer our students and staff the knowledge and opportunities to facilitate improvements through volunteering and at home.

We want to engage with partners to develop our outside spaces to allow greater opportunities for wildlife and to offer volunteering opportunities for staff and students. Through these initiatives we would also aim to pursue additional benefits for students and staff; increasing environmental knowledge and awareness, while providing health and well-being opportunities.

Our Student's Association have already demonstrated some success by helping us to achieve a **Bronze Hedgehog Friendly Campus** award – an achievement which we now hope to build upon.



### 4.4 WASTE



#### WASTE HIERARCHY – SSN

While the emissions from our waste stream are relatively minor when compared to other sources such as our energy consumption, we need to do more to reduce the waste we produce to the fullest extent possible. To guide our efforts we will draw upon the principles of the waste hierarchy, as we move toward a circular economy and away from a model of extraction, use and disposal

To achieve this we will continue to work with our Total Facilities Management provider to produce ambitious targets to reduce our waste and to make sure that our students and staff have the knowledge and confidence to dispose of waste responsibly through awareness-raising initiatives and events. We are already achieving zero waste to landfill and will review our waste procedures and implements improvements to increase recycling and reduce waste overall.

Our actions will be guided in part by legislation as, for example, we prepare for the introduction of the **Deposit Return Scheme** for cans and bottles which is due to be live in Scotland from August 2023. We will also respond to new and upcoming legislation such as the **Draft Circular Economy Bill**, with the intention to follow the routemaps included within these.



REPORT TOTAL

HISTORIC EMISSIONS (TCO2E)

CATEGORY	EMISSION SOURCE	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	
TARGETS SCOPE	Heat	Natural Gas	731.2	559.8	510.2	533.4	591.5	534.4	581.9	607.3	575.1
	Electricity	Grid Electricity (generation)	1672.7	1656.3	1367.1	1148.1	958.9	857.0	729.8	519.3	565.2
		Grid Electricity (transmission)	146.3	144.8	123.7	107.3	81.7	72.8	62.0	46.0	51.7
	Water	Water - Supply	3.8	4.8	4.8	5.2	4.1	4.5	6.0	1.0	0.5
		Water - Treatment	7.5	9.3	9.9	10.1	8.0	8.7	10.9	1.8	0.9
	Waste	Mixed recycling	2.1	3.3	3.8	2.2	3.8	3.3	1.8	0.4	0.6
		Organic Food & Drink AD	0.9	1.1	1.2	1.4	2.0	0.7	0.4	0.1	0.2
		Construction (Average) Recycling	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.1
		Paper and Board (Mixed)	0.0	0.0	0.0	0.0	0.3	0.3	0.2	0.1	0.1
		Metal Cans (Mixed) & Metal Scrap Recycling	0.5	0.3	0.3	0.2	0.4	0.5	0.5	0.2	0.4
		Batteries Recycling	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
		Refuse Commercial & Industrial to Landfill	17.4	5.9	8.0	37.4	0.9	0.8	0.0	13.5	0.0
		Glass Recycling	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.2
		Business Travel	Van - Average (up to 3.5 tonnes) Unknown Fuel miles	4.3	5.0	4.0	3.4	4.0	4.1	2.7	0.8
	Average Car - Unknown Fuel		0.0	0.0	91.1	87.1	91.6	89.9	57.2	15.8	0.0
	Car - petrol (average)		99.5	108.5	1.4	1.0	0.0	0.0	0.0	0.0	43.6
	Car - petrol (Medium car from 1.4 - 2.0 litre engine)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Rail (National rail)		0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.0	0.1
	Short-haul flights (average passenger)		0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.0	0.0
	International flights (average passenger)		0.0	0.0	0.0	0.0	34.0	10.6	0.0	0.0	1.9
Domestic flight (average passenger)	0.0		0.0	0.0	0.0	0.0	3.3	0.0	0.0	3.1	
Homeworking	Homeworking	0.0	0.0	0.0	0.0	0.0	0.0	0.0	146.4	56.2	
<b>TOTAL</b>		<b>2686</b>	<b>2499</b>	<b>2126</b>	<b>1937</b>	<b>1781</b>	<b>1592</b>	<b>1454</b>	<b>1354</b>	<b>1302</b>	
<b>PERCENTAGE OF BASELINE</b>		<b>100%</b>	<b>93%</b>	<b>85%</b>	<b>91%</b>	<b>92%</b>	<b>89%</b>	<b>91%</b>	<b>93%</b>	<b>96%</b>	

CATEGORY	EMISSION SOURCE	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Supply Chain	Estates & Buildings	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	383.2
	Catering Supplies & Services	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	300.9
	Coach Hire (Direct)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	294.2
	Health & Safety & Security	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	51.9
	Workshop & Maintenance Supplies (including Engineering)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	88.7
	Furniture, Furnishings & textiles	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	46.4
	Telecommunications	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	13.9
	Janitorial & Domestic Supplies & Services	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5.8
	Information Services	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	834.4
	Agricultural/Fisheries/Forestry/ Horticultural/Oceanographic Supplies & Services	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3.9
	Medical, Surgical, Nursing, Dentistry Supplies & Services	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	18.8
	Furniture, Furnishings & textiles	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-
	Non Influencable	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	53.2
	Professional Service - General	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	707.0
	Professional Service - HR	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	26.7
	Gas maintenance	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	8.0
	Gas maintenance	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.1
	Facilities Operations	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	49.4
	Vehicles, Fleet Management (Purchase, Lease, Contract Hire)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	3.6
	Laboratories	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	115.4
Electronic restaurant booking system	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.6	
Commuting	Staff	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	797.1
	Students	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1951.7
<b>REPORTING TOTAL</b>		<b>2686</b>	<b>2499</b>	<b>2126</b>	<b>1937</b>	<b>1781</b>	<b>1592</b>	<b>1454</b>	<b>1354</b>	<b>7057</b>

## APPENDIX 2 – PROJECTED EMISSIONS (TCO2E)

The below figures are based on the following assumptions:


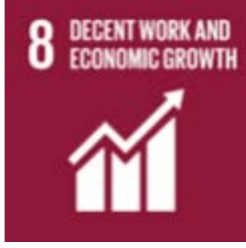

1. Consumption figures will largely return to pre-pandemic levels (based on 2018/19 PBCCD report). These figures have been chosen as the new Falkirk campus is yet to have a full year of normal use in which to record energy usage.
2. College functions will remain consistent throughout the life of the Plan i.e. no significant changes to student numbers or large construction projects etc.
3. Emissions factors will reduce in a linear form according to relevant actors' emissions targets (e.g. National Rail's 2045 Net Zero Target).
4. The College will reduce energy consumption through the successful delivery of initial projects which have been identified (bottom of page).

CATEGORY	SOURCE	2018/19	2026/27	COMMENT
Heat	Natural Gas	534.4	577.71	-
Electricity	Generation	857.0	481.3	Consumption increased by projects below. Emissions factors from BEIS.
	Transmission	72.8		
Water	Supply	4.5	1.6	Reduction in emissions factor to Scottish Water 2040 Net Zero target.
	Treatment	8.7	2.6	
Waste	Mixed recycling	3.3	2.4	Reduction in emissions factor to 2045 National Net Zero target.
	Food & Drink AD	0.7	0.5	
	Construction Recycling	0.1	0.04	
	Paper and Board	0.3	0.2	
	Metal Cans & Scrap Recycling	0.5	0.4	
	Batteries Recycling	0.1	0.03	
	Refuse Commercial & Industrial to Landfill	0.8	0.5	
	Glass Recycling	0.2	0.1	
Business Travel	Van - Unknown Fuel	4.1	5	Target 20% reduction in business travel and Transport Scotland 2045 Net Zero target.
	Average Car - Unknown Fuel	89.9	54.8	
	Rail (National rail)	0.4	0.2	Target 20% reduction in business travel and Network Rail 2045 Net Zero target.
	Short-haul flights	0.5	0.3	Target 20% reduction in business travel and UK Government 2050 Jet Zero consultation.
	International flights	10.6	7.1	Target 20% reduction in business travel and UK Government 2050 Jet Zero consultation.
	Domestic flight	3.3	0	Phased reduction of domestic flights by new Sustainable Travel Plan
Homeworking	Homeworking		60.3	Homeworking not recorded in 2018/19. Estimated at 40% based on College policy of staff working on campus minimum 3 days/week.
	Total	1,592.1	1,195.3	
	% of Baseline	59%	44%	




### Initial projects identified:

Campus	Project	Annual Savings (kWh)
Alloa	146.64kWp Solar PV	93,242
	LED lighting	186,924
Falkirk	159.12kWp Solar PV	121,536
Stirling	157.56kWp Solar PV	114,112
	LED lighting	248,365
	Total	764,179




## APPENDIX 3 – NET ZERO PLAN ACTION PLAN (1 OF 4)

ROOT	SUB-ROOT	PRIMARY SDG	ACTION	DESCRIPTION	ROADMAP CATEGORY
1. LEADERSHIP	1.1 GOVERNANCE		Sustainability Committee	Quarterly meetings with working group leads to report progress against each Branch. Annual review of Plan and reporting to Senior Management Team.	Leadership & Governance
			Strategic Plan	Include net zero targets in strategic planning documents at review.	Leadership & Governance
			Leadership Meetings	Add standing item to executive group and governing board meetings to update on delivery of targets	Leadership & Governance
			Procedural Reporting	Reports to Senior Management Team will be required to confirm how proposals will impact sustainability	Leadership & Governance
	1.2 FINANCE		Ring-fenced Campus Sustainability Fund	Establish a sustainable campus fund to implement initiatives identified by staff and students.	Leadership & Governance
			Capital Funding Applications	Source funding for emissions reduction projects - including from Scottish Government.	Estates & Operations
			Financial Planning	Integrate climate change into financial planning and reporting	Leadership & Governance
	1.3 PROCUREMENT		APUC	Collaborate with APUC to consider sustainability in all college procurement. Record, monitor and promote good practice.	Partnerships & Engagement
			Sustainable Catering	Negotiate with campus food suppliers to supply sustainable food options	Partnerships & Engagement
			Supply Chain Emissions	Estimate supply chain emissions and record these in annual Public Bodies Climate Change Duties Reporting (PBCCD). Work to increase the accuracy of this reporting over time. Set targets based on reported figures.	Data Collection





APPENDIX 3 – NET ZERO PLAN ACTION PLAN (2 OF 4)

ROOT	SUB-ROOT	PRIMARY SDG	ACTION	DESCRIPTION	ROADMAP CATEGORY
2. DEVELOPMENT	2.1 DATA COLLECTION		Public Bodies Reporting	Continue to report emissions to SSN each November. Include supply chain and commuting emissions in future reports.	Data Collection
			External Reporting	Publish progress against targets on college website	Data Collection
			Internal Reporting	Publish progress against targets in corporate annual reports.	Data Collection
			Share reporting methodology	Take part in EAUC peer review sessions with other colleges	Data Collection
			Science Based Targets	Produce science based emissions targets using sectoral framework expected from EAUC	Leadership & Governance
	2.2 ADAPTATION		Adaptation Plan	Undertake detailed studies to identify the risks which the college is likely to face and how these can be prepared for.	Leadership & Governance
			Adaptation Scotland Benchmarking Group	Attend group to upskill staff on skills required to develop Adaptation Plan and to share knowledge with other public sector institutions and government.	Leadership & Governance
	2.3 OFFSETTING		Offsetting Strategy	Identify offsetting opportunities and develop a strategy in line with sectoral guidance, e.g. The Oxford Principles for Net Zero Aligned Carbon Offsetting	Leadership & Governance
			Learning Opportunities	Develop opportunities for students and staff to learn more about the processes involved in offsetting	Leadership & Governance

APPENDIX 3 – NET ZERO PLAN ACTION PLAN (3 OF 4)

ROOT	SUB-ROOT	PRIMARY SDG	ACTION	DESCRIPTION	ROADMAP CATEGORY
3. ENGAGEMENT	3.1 PARTNERSHIPS		Sectoral Awards	Apply for sectoral awards e.g. Green Gown Awards following successful projects.	Partnerships & Engagement
			SDG Accord	Complete SDG Accord Reporting annually	Partnerships & Engagement
			Sectoral Leadership	Collaborate with EAUC and CSSCP to demonstrate effective leadership and lessons learnt.	Partnerships & Engagement
			Behaviour Change Events	Deliver a calendar of events (e.g. Earth Day) which promote sustainability and will encourage both students and staff to take action.	Partnerships & Engagement
	3.2 LEARNING & TEACHING		Global Goals Teach In	Encourage students and staff to engage with the SDGs through SOS-UK's SDG Teach-In.	Teaching, Learning & Research
			Curriculum Audit	Conduct audit of curriculum against SDGs	Teaching, Learning & Research
	3.3 KNOWLEDGE		Sustainability Survey	Distribute a short survey to students and staff to gather their views on sustainability and identify areas for action in the college.	Leadership & Governance
			Climate Skills Plan	Produce Plan to deliver training to staff and students on climate change and to incorporate climate responsibility and sustainability into staff development	Teaching, Learning & Research

APPENDIX 3 – NET ZERO PLAN ACTION PLAN (4 OF 4)

ROOT	SUB-ROOT	PRIMARY SDG	ACTION	DESCRIPTION	ROADMAP CATEGORY
4. OPERATIONS	4.1 ESTATES		Energy Audit	Identify opportunities to decarbonise heat, improve building fabric and install renewable technologies with support from Scottish Government funding.	Estates & Operations
			Estates Strategy	Produce updated Estates Strategy to include a five-year rolling programme of measures in line with our Net Zero targets	Estates & Operations
			Energy Saving Strategies	Implement strategies to save energy on campus and conduct estate rationalisation e.g. campus closures outside of peak hours	Estates & Operations
			Report on savings	Report carbon savings achieved through specific projects to the wider college community	Data Collection
			TFM Contract	Include requirements for energy management in tender for new TFM contractor (2023)	Estates & Operations
			4.2 TRANSPORT		Sustainable Travel Initiatives (inc. Active Travel Officer)
	Strategic Travel Plan	Update Strategic Travel Plan e.g. to discourage airplane travel and promote virtual meetings	Estates & Operations		
	4.3 BIODIVERSITY		Campus Enhancements	Deliver and maintain biodiversity enhancements on campus e.g. Hedgehog Friendly Campus	Partnerships & Engagement
			Partnerships	Develop biodiversity projects with external stakeholders (e.g. council) to deliver projects on campus and linked to the local area.	
			Volunteering	Facilitate volunteering opportunities for students on and off campus e.g. beekeepers.	Partnerships & Engagement
	4.4 WASTE		Waste Strategy	Work with TFM to collect waste data and develop targets and strategy to reduce waste.	Estates & Operations
			Zero Landfill	Maintain zero waste to landfill.	Estates & Operations
			Deposit Return Scheme	Prepare for introduction of the Deposit Return Scheme for cans and bottles	Estates & Operations
			Upcoming Legislation	Respond to new and upcoming legislation e.g. Draft Circular Economy Bill	Estates & Operations

Please note that although the below SDGs are not identified specifically in the above action plan, these are considered no-less significant and will be addressed by the actions of the College and Forth Valley Students' Association elsewhere (e.g. during specific events/projects):



APPENDIX 4 - NET ZERO PLAN GOVERNANCE STRUCTURE

ROOT	RESPONSIBLE	SUB-ROOT	RESPONSIBLE
1. LEADERSHIP	Principal	1.1 Governance	Vice Principal Information Systems and Communications
		1.2 Finance	Vice Principal Finance & Corporate Affairs
		1.3 Procurement	Supply Chain Manager
2. DEVELOPMENT	Vice Principal Information Systems and Communications	2.1 Data Collection	Soft Services & Sustainability Manager
		2.2 Adaptation	Sustainability Project Manager
		2.3 Offsetting	Sustainability Project Manager
3. ENGAGEMENT	Vice Principal Learning & Student Experience	3.1 Partnerships	Director of Operations
		3.2 Learning & Teaching	Head of Learning & Quality
		3.3 Knowledge	Quality Manager
4. OPERATIONS	Head of Estates, Facilities & Health & Safety	4.1 Estates	Head of Estates, Facilities & Health & Safety
		4.2 Transport	Soft Services & Sustainability Manager
		4.3 Biodiversity	Student's Association
		4.4 Waste	Soft Services & Sustainability Manager



# MAKING LEARNING WORK

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