Global Environmental Sustainability Climate Action Framework

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Contents

Foreword

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Our purposeful values-led ethos is what makes our University so distinct. We have over 200 years of turning innovation into real-world applications for the benefit of society worldwide.

Our Strategy 2025 is based on our heritage, our expertise, our relevance, and our global presence. It clearly shows our commitment to working together with our University community and partners to empower current and future generations with the knowledge and skills to become sustainability advocates while we each take responsibility for reducing our own impact on the environment around us. Our approach is outlined in our **Ten Institutional Commitments** which are driving actions for positive change.

Achieving this can only be successful if there is collaboration and co-development from across our global community. This Climate Action Framework lays out our planned people-centred approach focused on a series of key delivery themes and how we are building our capacity to act.

It addresses the recommendations set by the Royal Anniversary Trust to consider how universities utilise their role in education, research, civic engagement and influencing national and global leadership to accelerate progress towards net zero.

As a global institution we aim to be net zero across our core operational emissions by 2035 albeit our ambition is to meet that sooner as well as dealing with **Scope 3 emissions** head-on.

We are using our global reach and innovation in teaching, research and enterprise to make a significant impact towards the attainment of the UN Sustainable Development Goals while making commitments to become more sustainable as an institution and global community.

Environmental sustainability is one of Heriot-Watt's strategic performance indicators which sets out our commitment to aligning sustainability outcomes across the full breadth of the University's activities with the UN Sustainable Development Goals, and beyond, delivering statutory environmental requirements.

Following the first Global Stocktake in 2023, there is an urgent need to supercharge implementation pathways. The Climate Action Framework was co-created with our staff, students, alumni and external community groups and represents our University-wide approach to reducing Heriot-Watt's emissions' footprint, while also embedding a cultural change across the organisation and encouraging everyone to learn more about what steps they can take to make a real difference.

We have already made significant improvements to the energy efficiency of our buildings as well as increasing efforts to stop waste, increase recycling and promoting sustainable food options at our catering outlets on campus. We have now mapped how we will reach net zero across our global campuses; however, there is more needed to fully understanding the optimal way for us to reach our target.

The Framework places our Global community and partnership at its core, highlighting opportunities to raise awareness and engagement through a sustainability engagement programme co-developed with all our communities across teaching and learning, research, operations, estates and public engagement.

Responding to the climate crisis requires action from all of us across how we live, study and work. To find out more about what you can do to support Heriot-Watt's Climate Action Framework, and get involved, visit **our sustainability webpages**.

STRATEGY 2025

GLOBAL ENVIRONMENTAL SUSTAINABILITY

MISSION

We will use our global reach and innovation in teaching, research and enterprise to make a significant impact towards the attainment of the UN Sustainable Development Goals (SDGs) while making commitments to become more sustainable as an institution and global community.

VALUES

INSPIRE   **COLLABORATE**   **BELONG**   **CELEBRATE**

COMMITMENTS

1 We will inform, empower and support our global community in taking personal and collective action to assist in delivering the SDGs.

2 We will commit to achieving net-zero carbon emissions by a suitably ambitious date, between 2030 and 2035 depending on outcome of detailed planning.

3 We will support our signing of the sustainable Development Goal Accord at an institutional level.

4 We will utilise the convening power of Panmure House to promote discussion and debate to encourage fresh thinking on how to achieve the SDGs.

5 We will challenge ourselves, industry and national governments to achieve progress towards the SDGs.

6 We will adopt a Strategic Environmental Assessment (SEA) process.

7 We will map and align our global presence in educational excellence and world-leading research with the UN SDGs.

8 We will create a global research institute in net zero aligned with an international Skills Academy for "green jobs".

9 We will demonstrate and quantify the potential global impact of the radical innovations in research and policy.

10 We will seek to develop an enterprise accelerator programme to support start-up companies with radical approaches to carbon innovation.

PRINCIPLES

Create place and space to promote sustainable future through low-carbon footprint.

Take feasible steps to adopt new energy approaches and efficiently utilise resources.

Integrate sustainability into training and teaching.

Inspire collaboration and co-creation between and within our global and local communities.

Lead by example as a driver for change for sustainability.

Position sustainability at the core of decision making.

CORE THEMES

| Leadership and Governance | Estate and Energy | Biodiversity | Digital Sustainability |

| Research and Innovation | Sustainable Procurement and Supply Chain | Travel and transport | Learning and Teaching |

COMMUNITY ENGAGEMENT   **INTERNAL SKILLS AND RESOURCES**   **PARTNERSHIPS**   **FINANCE AND INVESTMENT**

The Heriot-Watt University Ten Institutional Commitments form the basis of our delivery for Strategy 2025 and the UN Sustainable Development Goals.

The delivery of our Global Environmental Sustainability Strategy will be driven through these commitments which are underpinned by six core principles. These in turn are reflected in our actions within eight core themes and four cross cutting themes.

Our response

Human activities, including the burning of fossil fuels, have altered Earth's atmosphere and driven changes to the climate that threaten ecosystems and societies across the globe. With atmospheric CO_2 concentrations increasing continuously, and sharply, from pre-industrial times, in addition to substantial warming contributions from other gases associated with human activities, warming is rapidly approaching the critical 1.5°C lower target from the 'Paris Agreement' adopted at the United Nations COP21 climate summit in 2015.

The importance of limiting warming to 1.5°C was reinforced by the 2018 Special Report of the Intergovernmental Panel on Climate Change (IPCC), which highlighted the significantly greater and more irreversible ecosystem and societal impacts of warming beyond 1.5°C. The report highlighted the need to move rapidly towards net-zero emissions, where any remaining greenhouse gas emissions would need to be balanced by removals from the atmosphere. The IPCC's AR6 Synthesis Report (2023) presents a stark picture of the current understanding around climate change, including an assessment that existing warming of around 1.1°C relative to 1850-1900 is affecting weather and climate extremes across the globe and that these phenomena can now be attributed with much stronger confidence to human influence. With rapid cuts to emissions, transition to net zero by around 2050 and subsequent progress to net negative global emissions, the AR6 indicates that it may be possible to limit warming by 2100 to just under 1.5°C, although reaching and possibly overshooting the target in the near term is increasingly likely. Net-zero is therefore central to the global response to the climate crisis and it is essential that we make rapid progress towards it.

The impacts of the changing climate will be experienced differently across the globe, with some regions experiencing more significant changes than others; for example, changes in temperature and precipitation patterns may cause prolonged heatwaves, droughts, intense rainfall events and flooding. These differences contribute to the disproportionately greater climate change impacts that are experienced by disadvantaged and vulnerable populations.

In addition to highlighting the need for rapid and deep reductions in emissions, the IPCC has illustrated the value of global climate action to support the development of a sustainable and equitable society, and the important role of sustainable development and the United Nations Sustainable Development Goals (UN SDGs) in global efforts to adapt to climate change.

Measures described within this Climate Action Framework will enable the University to support robust global climate action and foster the opportunities to reduce inequality that are integral to achieving a just transition. In supporting the UN SDG's, this Plan will also contribute to realising the University's broader sustainability objectives described by our Global Environmental Sustainability (GES) strategy and principles.

Our current status

We are a global, multinational university and it is essential that we set out a global approach. Our emissions are measured and reported under categories (scopes) in accordance with the international Greenhouse Gas Protocol. Our new emission baseline has been calculated using data from 2018/19, the most recent representative year prior to COVID-19 pandemic impacts.

Development of this Climate Action Framework has involved collating activity data from all our global campus locations for the first time. Our previous Dubai Campus operated under a leasing model that did not include utility recharging, and the 2018/19 baseline figures presented here only include business travel-related emissions for the campus. Our net-zero modelling incorporates emissions from the new Dubai Campus for years following its opening in 2021.

Scope 1 (direct emissions taking place within our own boundary) and **Scope 2** (indirect energy related emissions outside our boundary, for example CO_2 from offsite electricity generation) are typically the emissions over which an organisation has the most control. They also tend to represent the emissions with the most standard calculation methodologies.

	Emission Sources Overview	
	Within our core net-zero commitment	**Broader operational impact: focus on capacity building and dedicated action plans**
Scope 1	These are direct emissions- from sources directly within our control - and include emissions from our use of fuels (for example natural gas, LPG and gas oil) and fugitive emissions of greenhouse gases (for example leaks of refrigerant gases).	All energy-related Scope 1 emissions fall within our core net-zero commitment.
Scope 2	These are indirect energy emissions that result from our activity but are from sources not under our direct control, for example emissions associated with the generation of the grid electricity and district cooling we use.	All Scope 2 emissions are considered within our core net-zero commitment.
Scope 3	Scope 3 emissions are indirect, value chain emissions associated with our activity. Our core net-zero commitment includes Scope 3 emissions from business travel, water consumption / wastewater disposal and waste.	Our broader Scope 3 emissions are associated with commuting travel, student travel prior to and after the period of study with Heriot-Watt, and all other procured goods and services.

Our 2018/19 core emission baseline: 20,379 tCO$_2$e							
Scope 1 Direct emissions		**Scope 2** Indirect energy emissions		**Scope 3** Indirect value chain emissions			
Natural gas and other fuels	Fugitive gases	Purchased electricity	Purchased cooling	Business travel	Water and wastewater	Waste	Electricity distribution losses
7,512 tCO$_2$e	**135** tCO$_2$e	**7,147** tCO$_2$e	**212** tCO$_2$e	**3,944** tCO$_2$e	**299** tCO$_2$e	**530** tCO$_2$e	**600** tCO$_2$e

Within **Scope 3** (indirect, value chain), emissions associated with **business travel**, **waste disposal**, use of **water** and **electricity transmission and distribution losses** have well-developed calculation methodologies, and these emissions are considered within the University's core footprint and our net-zero target.

Our baseline footprint largely comprises Scope 1 and Scope 2 energy related emissions from the combustion of fossil fuels, arising directly from heating buildings and indirectly from the electricity and cooling we use.

Reducing these emissions forms a major net-zero focus. However, and in common with many organisations, the full extent of our Scope 3 value chain emissions (beyond those included in our net-zero baseline) will substantially outweigh our Scope 1 and 2 emissions combined. This Plan identifies the principles and priority actions we will use to improve our understanding of, and ability to act on, our broader Scope 3 emissions.

Our position

Greenhouse gas emissions from the University's operations in Scotland have been reported under national "Public Bodies Climate Change Duties" reporting since 2014/15. The emissions we report include Scope 1 and Scope 2 emissions from our use of energy, and core Scope 3 emissions from business travel, water use and waste disposal. Reports summarise annual progress against the 15% reduction target (relative to 2014/15 baseline) from our Carbon Management Plan 2015/16 – 2019/20. We met the target a year early in 2018/19, and our Scope 1 and 2 emissions have reduced by more than 35% between 2014/15 and 2022/23, despite new reporting of fugitive (refrigerant) gas emissions in Scope 1.

Scotland Campuses Annual Emissions

Scotland Campuses: Annual Emissions (tCO$_2$e)
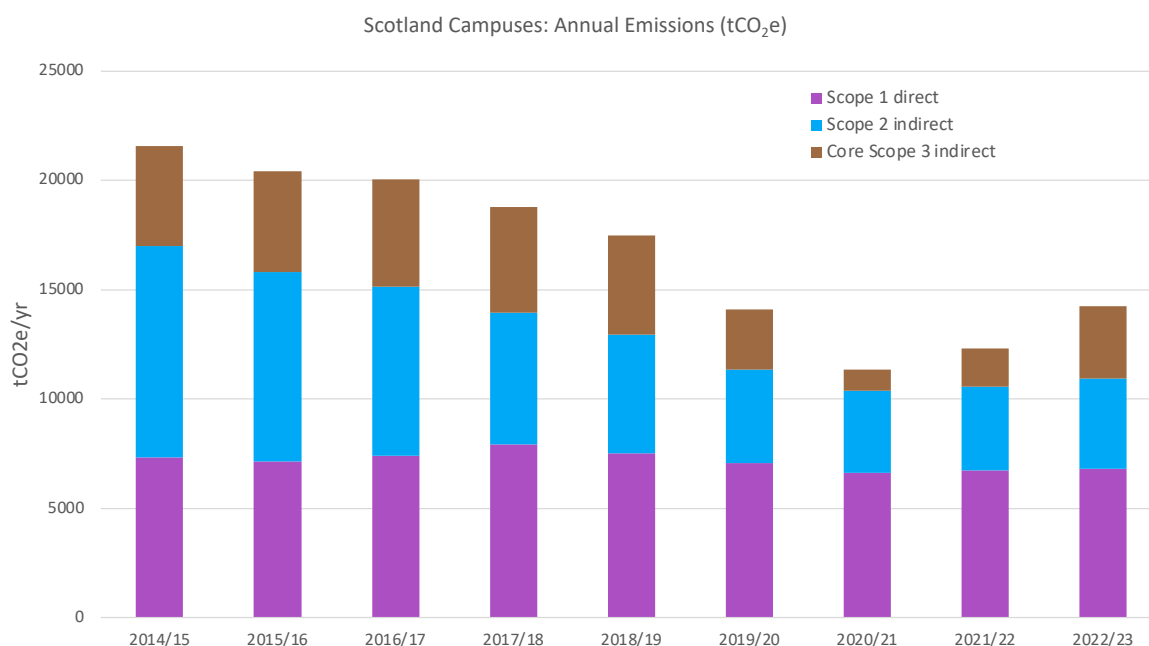
The significant drop in emissions in 2019/20 and 2020/21 reflected the additional impact of the COVID-19 pandemic, as many of our facilities were closed or only partially open, and business travel reduced dramatically. Our emissions have increased in 2021/22 and 2022/23, largely due to some resumption of business travel in the post-pandemic period, but are around 18% lower than 2018/19, the year preceding the pandemic.

Our carbon management projects have included replacing many thousands of light fittings with efficient LED equivalents, insulating roofs and improving building fabric, using water-efficient fixtures and replacing older leaking distribution pipes, improving heating and hot water system efficiency, procuring efficient laboratory equipment and a huge range of other changes to improve the efficiency of our buildings and operations.

We have achieved significant emission reductions during a period of estate growth, but still have much to do – the substantial scope we have for further efficiencies forms a major focus of this Climate Action Framework.

Dubai Campus

Our Dubai Campus opened in early 2021 and has been certified to the Gold standard under Leadership in Energy and Environmental Design (LEED) criteria, reflecting high performance in interior environmental quality and in energy, water and resource efficiency. Key aspects of the design have allowed the building to reduce the water consumption by 40% from baseline standards, while energy performance is optimised by measures including zone controls for ventilation and air-conditioning and efficient lighting design. A key objective is to build on the campus' modern systems and sustainable design features and develop an innovative Smart and Paperless Campus, where systems integration, data analytics and AI are used to enhance user experience and optimise efficient and sustainable use of the campus building.

Malaysia Campus

The University's Malaysia Campus holds certification under Malaysia's Green Building Index scheme, recognising sustainable design features including the campus' living green roof- the first of its kind in Malaysia. Other sustainable design features include solar shading and a rainwater harvesting system. The campus sustainability team leads the development and implementation of a range of high impact energy efficiency and renewable energy projects and supporting broader local sustainability initiatives across resource use, recycling and travel.

Our ongoing achievements

The University is rapidly increasing its activity towards achieving a reduction in emissions. Our focus has widened to ensure co-development and engagement are central to this. Our aim is to embed behavioural change across the institution and in our communities.

Our Ten Institutional Commitments steer this ongoing activity, which encompasses all our campuses and communities. Below are examples of some of the achievements which are building the firm foundations for future sustainability.

1 We will inform, empower and support our global community in taking personal and collective action to assist in delivering the SDGs.

High-profile Climate Hub at COP28, Dubai.

Established Student Sustainability Forum.

Biodiversity Action Plan.

Student Sustainability Fund launched.

Sponsorship of Student Union volunteer and Staff Sustainability champion awards.

2 We will commit to achieving net-zero carbon emissions by a suitably ambitious date, between 2030 and 2035 depending on outcome of detailed planning.

Detailed modelling (e.g. for renewable generation and heat decarbonisation projects) underpins this Climate Action Framework.

National Robotarium: no fossil fuel heating.

GRID Building: no fossil fuels.

Continuous programme for Green Building Certification. Malaysia Campus.

Biodiversity Action Plan.

Green Kitchen Standard achieved, Edinburgh Campus.

Piloting project on food carbon footprint at Global Campuses.

3 We will support our signing of the Sustainable Development Goal Accord at an institutional level.

Energy Transition statement published.

4 We will utilise the convening power of Panmure House to promote discussion and debate to encourage fresh thinking on how to achieve the SDGs.

Hutton Series on Climate Change; six public debates held and resulting report published.

5

We will challenge ourselves, industry and national governments to achieve progress towards the SDGs.

Student-led Global Sustainability week.

Putrajaya Net-Zero Emission Roundtable 2023.

Participated in Platinum Jubilee Report: Accelerating-towards-Net-Zero.

Winner of 12th Green Flag Award for Lawn and Central Woodlands from Keep Scotland Beautiful.

Climate Hope panel and family day at the Edinburgh Science Festival.

Green Awareness Campaign, Malaysia Campus.

6

We will adopt a Strategic Environmental Assessment (SEA) process.

Scoping and system appraisal underway for adoption of SEA process.

7

We will map and align our global presence in educational excellence and world-leading research with the UN SDGs.

Edinburgh Business School is a Communicating Signatory member of PRME (Principles for Responsible Management Education) a United Nations-supported initiative, aimed at providing future leaders with the skills to balance business goals with the Sustainable Development Goals (SDGs).

Global Changemaker Curriculum Framework: foundation for embedding sustainable development learning across degree programmes.

Student internships in Sustainability offered as part of the Climate Action Framework.

Dubai Campus launches solar test site for companies.

8

We will create a global research institute in net zero aligned with an international Skills Academy for "green jobs".

9

We will demonstrate and quantify the potential global impact of the radical innovations in research and policy.

Through our global research institute, we are pioneering groundbreaking solutions that will redefine environmental stewardship and propel us toward a carbon-neutral future; achieving net-zero carbon emissions and innovating for the future beyond.

10

We will seek to develop an enterprise accelerator programme to support start-up companies with radical approaches to carbon innovation.

The University's Global Innovation Challenge 2023 attracted 537 participants from four continents presenting wide-ranging solutions for sustainability.

Our approach

Working from our global emission baseline, we have modelled the impacts that will result both from net-zero transition projects and from factors external to the University, such as the ongoing greening of electricity grids supplying our campuses in Scotland, Dubai and Malaysia.

The modelling includes assumptions reflecting our best understanding, based on external data wherever possible. Some of the key areas include future grid electricity emission factors, based on relevant national policies and targets, incremental reductions in emission factors for business travel, water and waste and an assumed 35% reduction in business travel associated with post-pandemic patterns of collaborative working and following the introduction of our Sustainable Business Travel Policy.

The emission reduction pathway shown in the following diagram is based on our 2018/19 baseline emissions (Scope 1, Scope 2 and, from Scope 3, business travel, water and waste) and maps the impact of these projects and external factors. The impact of heat decarbonisation projects reflects the outcomes of recent technical studies, which also indicate a possible requirement for top-up inputs of heat, modelled from natural gas. Further studies will investigate alternatives allowing a full transition away from natural gas – outcomes will be integrated into future iterations of this Plan.

Global emission model
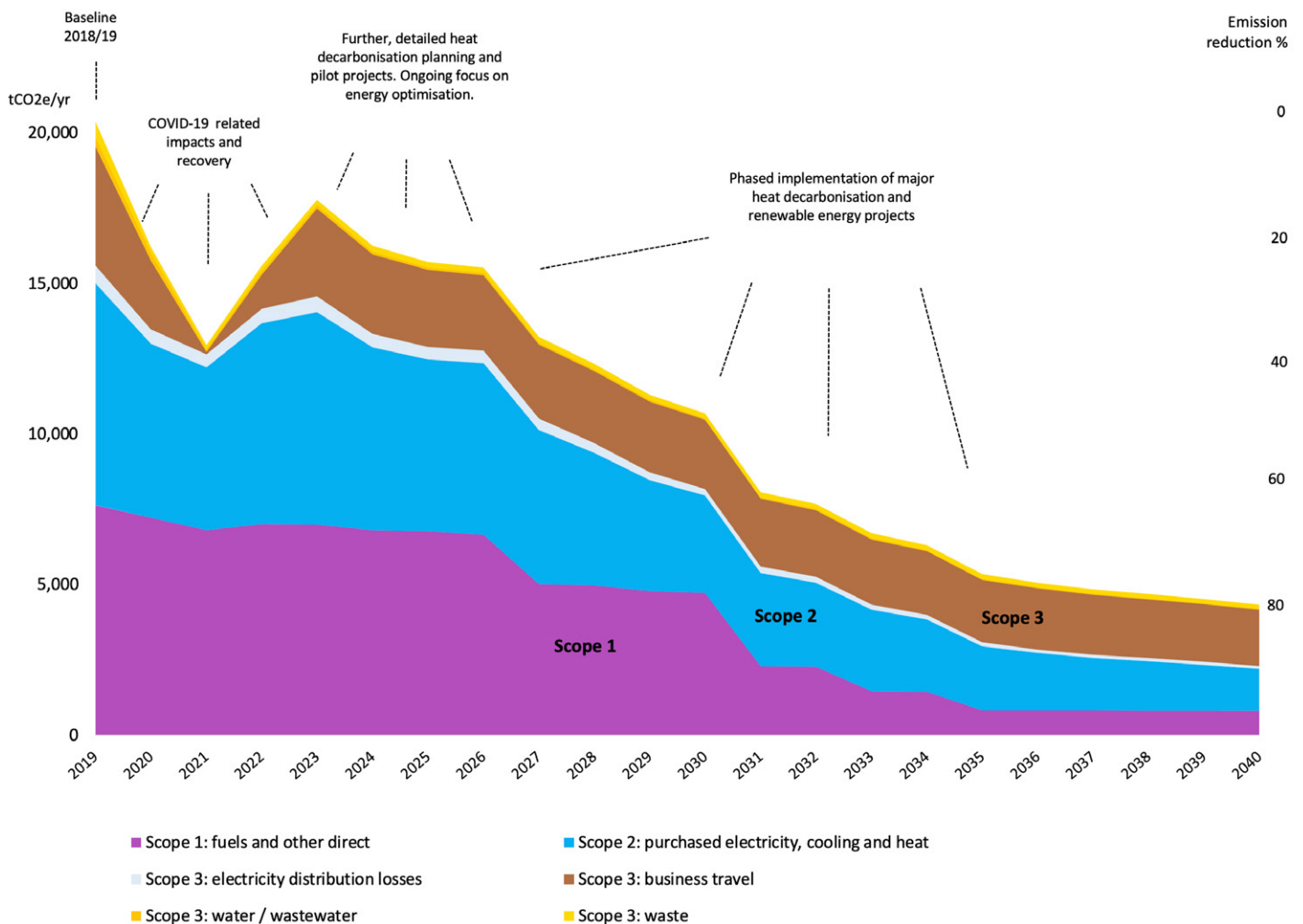
Net-zero waterfall chart
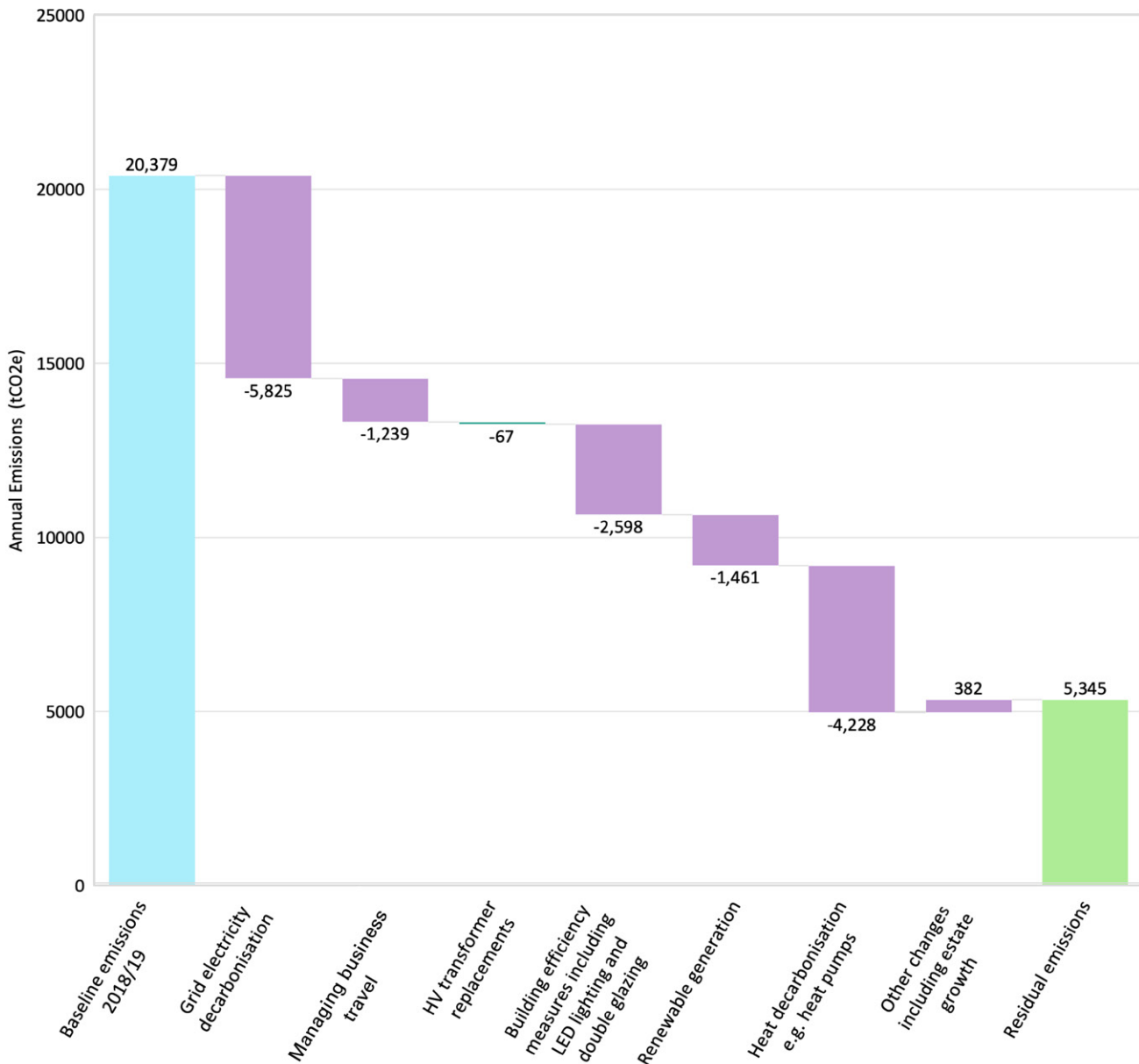
The pathway forms the basis of our net-zero target and is aligned with a 1.5°C science-based target trajectory for Scope 1 and 2 emissions.

The pathway can be represented as a waterfall chart, showing the relative emission reduction contributions arising from the initiatives we describe within this framework.

The modelling highlights the significant impact of ongoing electricity grid decarbonisation, with an increased proportion of grid generation coming from renewable sources. Looking at our own net-zero initiatives, the waterfall chart highlights the critical importance of decarbonising heat and cooling, for example, transitioning away from the direct use of fossil fuels for heating, and the substantial associated impact of improving the energy performance of our buildings and the services we use to operate them. On campus renewable generation and managing our business travel emissions represent further substantial opportunities.

Further detail of the initiatives we will implement to significantly reduce our emissions, prior to offsetting the residual element, will be available on our website.

Next steps: Implementation

High level targets: interim and long-term targets

These targets reflect ambitious action to reduce our emissions, and the impact of modelled projects across our Scope 1, 2 and 3 core emissions. Achievement of the targets will ensure that our Scope 1 and 2 emissions are reduced in alignment with a 1.5°C science-based target trajectory.

Our **2018/19** core emission baseline

20,379 tCO_2e

By **2030** we will reduce our core emissions to no more than

10,700 tCO_2e

By **2035** at the latest, our core emissions of no more than

5,350 tCO_2e

will be compensated to allow us to reach **Net Zero**
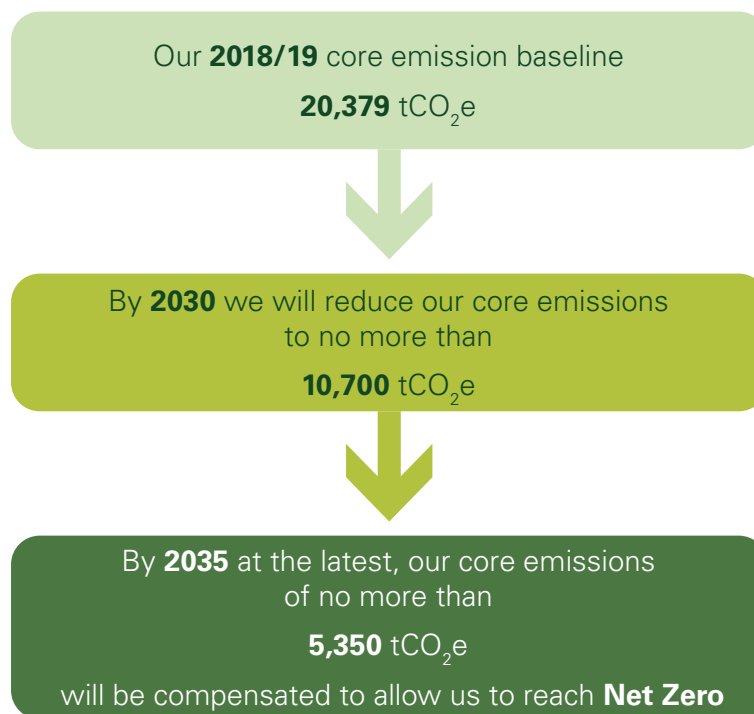
As a global institution we are aiming to be net-zero across our core operational emissions by 2035 at the latest, with an ambition to bring forward this achievement as far as possible.

We will adopt a combination of intensity metrics to measure our progress:

tCO_2e/student FTE

kWh/m²

Core Theme

Activities will be carried out under eight core themes (see below) which will be enabled and driven by four cross cutting themes, i.e. Community Engagement, Internal Skills and Resources, Partnerships and Finance and Investment.

Climate Mitigation: short-term plans to meet our commitments

Each of the core themes will cover a number of critical areas through which progress against our actions will be reported. All actions will also be reported against our ten institutional commitments.

COMMUNITY ENGAGEMENT

INTERNAL SKILLS AND RESOURCES

PARTNERSHIPS

FINANCE AND INVESTMENT

GLOBAL ENVIRONMENTAL SUSTAINABILITY

LEADERSHIP AND GOVERNANCE
MANAGEMENT REPORTING

ESTATE AND ENERGY
ESTATE OPTIMISATION
ENERGY OPTIMISATION
ENERGY TRANSITION AND RENEWABLES
CIRCULAR ECONOMY AND WASTE HYBRID WORKING

SUSTAINABLE PROCUREMENT AND SUPPLY CHAIN
PROCUREMENT AND SUPPLY CHAIN
FOOD AND DRINK

DIGITAL SUSTAINABILITY
ESTATE OPTIMISATION
ENERGY OPTIMISATION

TRAVEL AND TRANSPORT
BUSINESS TRAVEL
FLEET TRANSITION
STAFF AND STUDENT COMMUTING

RESEARCH AND INNOVATION
OPERATIONAL APPLICATION OF INNOVATIVE RESEARCH

LEARNING AND TEACHING
LITERACY TRAINING
EMBED IN COURSES
SUSTAINABLE LABS

BIODIVERSITY
BIODIVERSITY ACTION PLAN

Sub-themes for Heriot-Watt University Sustainability

Theme	Action	Completion
Leadership and Governance		
Governance	Launch University Committee for Global Environmental Sustainability.	Mid 2024
	Embed sustainability into relevant University Committee Terms and Conditions and policies, starting with Procurement and Finance.	Mid 2024
Management	Introduce strategic environmental assessment process to review sustainability impacts, including climate impact, of significant proposed planning and policy developments.	2024
Reporting	Produce and publish annual global emission performance reports.	Annual commitment
	Participate in use of the EAUC Climate Risk Register for climate adaptation.	2024
	Review and republish the University's Climate Action Framework to manage and enable future amendments and changes. The document must be made available publicly.	Biennial from 2024
	Establish regular reporting from delivery boards and workstreams .	On-going
	Adopt the EAUC Sustainability Leadership Scorecard .	Early 2024
Estate optimisation	Following publication of the Built Environment Development Framework, develop and launch the HWU Sustainable Construction Brief, formalising University net-zero requirements surrounding sustainable design, energy performance and climate change adaptation within retrofit and new build project processes.	2024/2025
	Adopt net-zero construction and refurbishment standards, for example the Scottish Government's Net-Zero Public Sector Buildings Standard, initially targeting net-zero Construction and Operational Energy and moving towards Whole Life. The University's forthcoming Net Zero Community Hub will be used to pilot these approaches. Aligned processes will be adopted for all major campus projects.	Ongoing
Energy optimisation	Data driven solution: improve energy data coverage and quality via plans for further automated metering and sub-metering, which will help to inform and focus our energy management action.	2024
Energy intensity	Establish intensity metrics and targets to provide greater insight into progress towards our climate targets. These will be established in relation to energy (kWh) or emissions (tCO_2e), and normalised according to estate (per m2), student (per student FTE) or financial (per £ million turnover) data.	2023
Residual Emissions	Continue to refine the University's approach to deliver ethical counterbalance of residual emissions by the net-zero target date, meeting best practice requirements and delivering optimal environmental and socio-economic co-benefits.	Ongoing
Hybrid working	To reflect changes in working patterns and greater home working, develop methodology to quantify and report emissions associated with connected hybrid working. (Taking into account current HR Policy).	Inventory 2024
Circular economy and waste	Develop harmonised circular economy and waste plans for each campus location, detailing local opportunities, projects and targets.	2024/2025

Biodiversity		
Biodiversity Action Plan	Review implementation and monitoring of existing Edinburgh Campus Biodiversity Action Plan.	underway
	Develop revised Edinburgh Campus Biodiversity Action Plan and associated targets.	2024
Digital Sustainability		
Sustainable Technology Plan	The Heriot-Watt University Digital Strategy Steering group will ensure they are delivering on the University sustainability strategy, incorporating the impact on the climate into technology and digital decision-making processes with the aim of achieving net zero.	2024
Research and Innovation		
Operational application of innovative research	Directly implement innovative research into activities to support the Sustainability strategy.	2024
	Ensure major projects integrate and showcase our sustainability research. outcomes.	Ongoing
Sustainable procurement and supply chain		
Procurement and supply chain	Investigate and adopt quantification methodologies (moving beyond spendbased approach) for high impact supply categories.	2023/24
	Progressively embed Scope 3 emission criteria within specifications / evaluation criteria for University contracts.	Ongoing
	Develop supply category specific Responsible Procurement Strategies / Action Plans, with initial priority for high impact supply categories.	2023/24
	Build understanding of the University's sustainable procurement objectives via training / engagement with our HWU community (including devolved buyers).	Ongoing
Food and drink	Develop Sustainable Food Policy, harmonising our approach to food sustainability and related wellbeing outcomes.	2023/24
Travel and transport		
Business travel	Develop and implement a Sustainable Business Travel Policy, building on pandemic shifts in collaborative working and prioritising and incentivising sustainable travel.	2024/2025
	Investigate opportunities to reduce emissions associated with grey fleet by providing sustainable / safe alternative means of travel.	2023/24
Fleet transition	Progress transition of all University owned/operated non-specialist vehicles to 100% zero emission (exceptions for limited landscape and specialist research vehicles). (See also large-scale core projects).	Progress 2024 Complete by 2025/26
Staff and student commuting	Undertake student and staff travel surveys at all locations. Use survey results to quantify staff and student commuting emissions, update Edinburgh Campus Travel Plan, and create Plans for Borders, Dubai and Malaysia campuses.	Surveys 2023/24 Plans 2025
	Develop and launch University EV Charging Policy and investigate implementation opportunities at each campus location.	2023/24
	Establish local active travel improvement projects.	2023/24

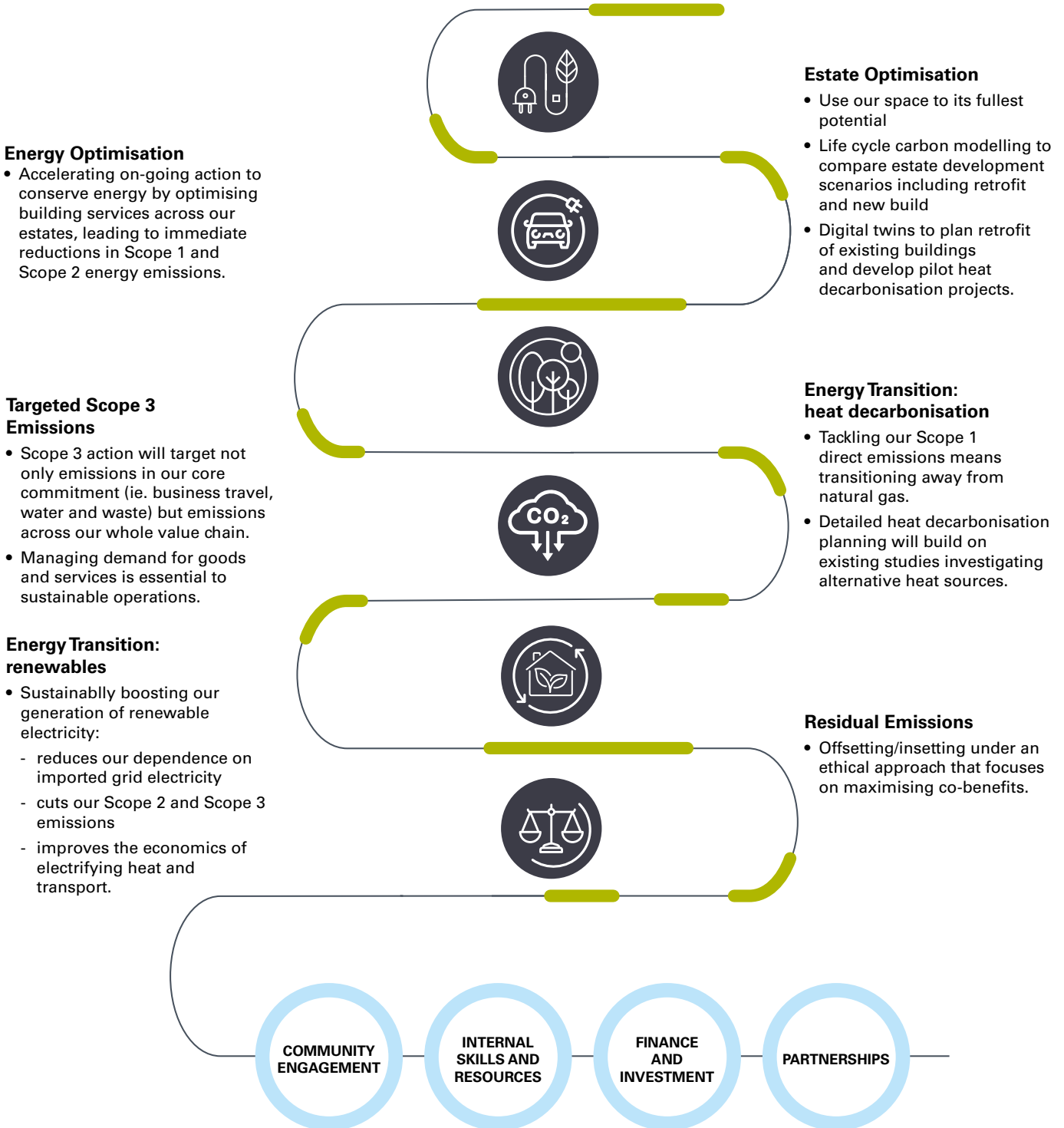| Learning and Teaching		
Literacy Training	Introduce a Climate Advocacy Training course, designed to empower members of the University community to plan practical and impactful measures to reduce their personal emissions and contribute to attaining the University's net-zero targets.	2024
Embed sustainability into Learning and Teaching	Explore potential to support requests for data and case studies within existing courses.	2024
	Explore potential development of internship programme.	In progress for 2024 pilot
Sustainable Labs	Implement guidelines for more sustainable laboratory standards, e.g. The Laboratory Efficiency Assessment Framework (LEAF).	2024/25

Cross cutting themes

Community Engagement		
Co-development	Co-develop Sustainability engagement programme with our students and staff. Adopt a community-led engagement approach.	In progress, initial programme to launch 2024
	Develop and grow a Student Sustainability Forum.	Launched 2023
	Develop a Student Fund to support events, society visits or pilot project support.	Launched 2023
	Develop a Net Zero Community Hub to accelerate our transition to a Net Zero global community, inspiring change and showcasing sustainability and net zero innovation.	2024
Finance and Investment		
Finance	Identify and submit applications for funding proposals.	Initiated 2023
	Develop partnerships for large scale emissions reduction projects.	2024
Investment	Develop an approved roadmap for a responsible investment policy statement.	Initiated 2023
Internal Skills and Resources		
People	Identify key personnel requirements for completion of strategic delivery areas.	Ongoing
Partnerships		
Climate change adaptation	Contribute to national and regional climate change adaptation programmes, prioritise on-campus deployment of adaptation research and continue to integrate adaptation planning into governance processes including via updates to relevant risk registers.	Ongoing

Progress towards the implementation of our commitments and targets will be reported within our annual global emission reports and, for the campuses in Scotland, our annual Public Bodies Climate Change Duties (PBCCD) reports.

Our priority actions

For each theme, an implementation pathway is being mapped to provide a route to success.
An example is provided below for our main Estates projects. Additional pathways will be uploaded
to the Heriot-Watt University website.

Estates Impact Pathway

Estate Optimisation
- Use our space to its fullest potential
- Life cycle carbon modelling to compare estate development scenarios including retrofit and new build
- Digital twins to plan retrofit of existing buildings and develop pilot heat decarbonisation projects.

Energy Optimisation
- Accelerating on-going action to conserve energy by optimising building services across our estates, leading to immediate reductions in Scope 1 and Scope 2 energy emissions.

Energy Transition: heat decarbonisation
- Tackling our Scope 1 direct emissions means transitioning away from natural gas.
- Detailed heat decarbonisation planning will build on existing studies investigating alternative heat sources.

Targeted Scope 3 Emissions
- Scope 3 action will target not only emissions in our core commitment (ie. business travel, water and waste) but emissions across our whole value chain.
- Managing demand for goods and services is essential to sustainable operations.

Energy Transition: renewables
- Sustainablly boosting our generation of renewable electricity:
  - reduces our dependence on imported grid electricity
  - cuts our Scope 2 and Scope 3 emissions
  - improves the economics of electrifying heat and transport.

Residual Emissions
- Offsetting/insetting under an ethical approach that focuses on maximising co-benefits.

COMMUNITY ENGAGEMENT

INTERNAL SKILLS AND RESOURCES

FINANCE AND INVESTMENT

PARTNERSHIPS

Community Engagement

The community engagement for the Climate Action Framework will tie into the development plan for the wider **Community Engagement Programme**. The community engagement programme aims to start a conversation about sustainability and ignite behaviour change so that we, as a university, can take action to address the climate crisis. The programme will enable and empower our students, staff and external communities to become advocates for a more sustainable future. We will only achieve success with the aligned energy and collaborative effort of our community of students, staff, alumni and business and community partners- the journey to net zero must include every member of the Heriot-Watt community. The delivery of every action within this Climate Action Framework depends on essential contributions from our community, and it is critical that we engage effectively in communicating the urgency and scale of the climate crisis, the University's response and the role of all members of our community in the transition to net zero.

We plan to launch the University's **Net Zero Community Hub**. The Hub will be an important channel of communication and a focus for sustainability engagement. The co-developed community engagement programme will start a conversation about sustainability and ignite behavioural change so that we can all take action to address the climate crisis. Physically based at the Edinburgh Campus but with digital links across our campuses, the Hub will act as a central focus in facilitating engagement around environmental sustainability and a net-zero transition as we build on the community outcomes of the Hutton Series on Climate Change. The building will be constructed as a net-zero exemplar and will provide space to showcase the University's pioneering net-zero research and education outcomes.

Our approach to residual emissions

In establishing a net-zero target for the University, we prioritise achieving emission reductions in our direct and indirect emissions via our own actions and through engagement with our community, value chain and stakeholders. Reaching net-zero will require that we compensate for our residual emissions, including any unavoidable remaining emissions associated with business travel, losses of refrigerant gases and some limited uses of energy while relevant sectors continue to decarbonise.

We will adopt a rigorous and ethical approach (aligned with the relevant Government and university recommended guidance from The Royal Anniversary trust, EAUC etc.) when choosing mechanisms to counterbalance our residual emissions, considering opportunities associated with both "insetting" (working with or investing in our own landholdings or value chain to reduce emissions) and "offsetting" (purchase of carbon credits to offset emissions). Best practice around insetting and offsetting is likely to evolve, possibly with increasing emphasis on scalable emission removals and negative emission technologies (NETs) over time. Our newly established University Committee for Global Environmental Sustainability will oversee work to develop and refine our approach with regular reporting from the relevant working group on activities to compensate our residual emissions, including alignment with relevant standards and possible participation in sector-wide initiatives.

Our approach will include:

- Making sure that emission offsets and insets are not used as a substitute for action to reduce our emissions

- Where offsets are to be used, ensuring that high-quality offsets are specified with respect to additionality (for example supporting initiatives where emission removals result directly from offset revenue streams, that would not have otherwise occurred) and permanence

- Investigating opportunities for synergies and links between our research and those offsets/ insets used to balance our residual emissions

- Careful evaluation to maximise the potential environmental and socioeconomic co-benefits of any spend on insetting and offsetting, for example in support of just transition, benefits for local communities and action to tackle the biodiversity crisis. Where possible we will prioritise investment in local projects in the geographies within which we operate

- Investigation of land-based insetting opportunities – during 2023 and 2024 we will investigate tools and processes to allow us to develop a register of our land-based emissions associated with the University estate, as a first step towards possible nature-based insetting.

- Being fully transparent in the offsetting and insetting mechanisms that we use and our reasons for selecting them.

Climate Change Mitigation and Adaptation

Many of the actions in this Climate Action Framework relate to mitigating climate change by accelerating our emission reduction efforts. It is important this remains a core focus at this critical point in society's efforts to limit and prevent the most serious climate impacts, but it is also important that we start to adapt to the changes that are already occurring, and that we contribute to global efforts to increase resilience.

The nature of warming impacts will vary between our campus locations, with severe weather events including extreme rainfall potentially comprising some of the most significant impacts for Scotland and Malaysia, while Dubai may experience reduced rainfall but increasing flooding risks associated with sea level rise. Adapting to the changing climate is of ever-increasing importance as the effects increase in their intensity, and weather events previously viewed as extreme become more frequent.

Climate change adaptation features extensively within the University's teaching and research, and through the implementation of this Framework, relevant campus masterplans and the University's GES Strategy we will prioritise using our estate to demonstrate associated research, for example across areas including rainfall attenuation, flood risk management and approaches to solar shading. The University's forthcoming Sustainable Development Brief will highlight the University's priorities towards integrating adaptation into our project processes, to make sure that our new build and retrofit/refurbishment projects are resilient to the effects of the changing climate. Measures will include ensuring that rainfall and flood risk modelling reflect projected precipitation changes and that we factor future climate scenarios in building performance modelling to avoid overheating.

Partnership working is fundamental to our adaptation work, and we will continue to engage widely across our research and operations, contributing to national climate change adaptation programmes and local / regional projects.

We will also continue to integrate and formalise climate change adaptation arrangements within our planning and governance processes, ensuring that associated risks are included within relevant risk registers.

Large scale projects for partnership consideration

A number of potential large scale schemes have been identified for further consideration and scoping to achieve our required emissions reductions. These projects have been used to define the curve modelling our path to net zero (page 14). The need for additional financial input requirements is recognised and our University will work to be an active part of wider discussions within the university landscape to aim to develop solutions. Private and public partnerships and collaborations will be key to success with a number of funding proposal submissions underway. There are also several commercial models and approaches which are being investigated to ensure we leverage and maximise the use of funds from external partners, public bodies etc. Following prioritisation, and feedback from the University Committee for Global Environmental Sustainability each project will require approval via the existing University approval routes and report progress to all appropriate committees. Projects will be prioritised according to a range of factors including overall cost, financial payback, partnerships, community collaboration and therefore contribution to the wider sustainability commitments and themes.
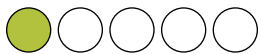
Estate and Energy

Project	Edinburgh Campus heat decarbonisation and building retrofit scheme				
Summary	Implementation of low/zero carbon heat scheme at Edinburgh Campus, provisionally based on air source heat pump (ASHP) technology, with improvements to building fabric and services to reduce heat demand, improve energy efficiency and allow transition to lower temperature systems. We will continue to investigate other opportunities, for example geothermal energy, in parallel. Further detailed investigation ongoing. Costs vary according to depth of retrofit undertaken and options for centralised / decentralised heating plant.				
Indicative investment	●●●●●	Approx. 2035 tCO_2e/yr saving	5,694	Scheduling	Phased 2026-2034 (pilot projects earlier)

Project	Borders Residences heat decarbonisation and building retrofit scheme				
Summary	Implementation of heat electrification scheme, provisionally based on air source heat pump (ASHP) technology, with associated building energy performance improvements.				
Indicative investment	●●●○○	Approx. 2035 tCO_2e/yr saving	145	Scheduling	2028

Project	Solar photovoltaic generation, Malaysia Campus				
Summary	Replacement of oil-fired heating system, provisionally based on air source heat pump (ASHP) technology.				
Indicative investment	Landlord led project	Approx. 20305tCO_2e/yr saving	23	Scheduling	Modelled by 2027/28

Project	Solar photovoltaic generation, Malaysia Campus				
Summary	Substantial scheme local to campus. Feasibility being developed with local partners, uncertainty around project means it has not been incorporated into net-zero modelling at this stage.				
Indicative investment	Pipeline project only	Approx. 2035 tCO_2e/yr saving	To be determined	Scheduling	To be determined
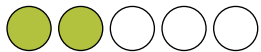
Project	Solar photovoltaic generation, Scotland campuses				
Summary	Schemes at Borders, Edinburgh and Orkney. Edinburgh schemes may be limited until local electricity grid constraints lifted, likely 2026.				
Indicative investment	●●●○○	Approx. 2035 tCO_2e/yr saving	1,460	Scheduling	Phased 2025-2029

Programme	James Nasmyth Building steam boiler removal, Edinburgh Campus				
Summary	Replacement of steam boiler (with significant standing heat losses) by small/local electric steam generators.				
Indicative investment	●○○○○	Approx. 2035 tCO_2e/yr saving	14	Scheduling	2024/25

Low	●○○○○
Low to Medium	●●○○○
Medium	●●●○○
Medium to High	●●●●○
High	●●●●●
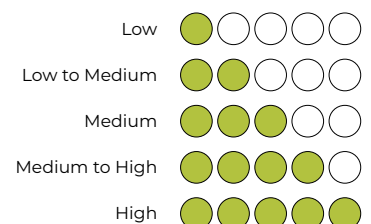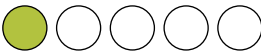
Project	Campus energy efficiency improvements, Malaysia Campus				
Summary	Programme of projects led by campus energy transformation team to improve power management and reduce energy consumption.				
Indicative investment	Under development	Approx. 2035 tCO_2e/yr saving	584	Scheduling	Ongoing programme of improvements

Project	HV transformer replacement programme, Edinburgh Campus				
Summary	Programme to replace older high voltage transformers within the University's private 11kV network serving the Edinburgh Campus. Modern units provide lower standing and operating losses.				
Indicative investment	●●○○○	Approx. 2035 tCO_2e/yr saving	67	Scheduling	2025

Programme	Dubai Campus, Smart Campus and building optimisation initiatives				
Summary	Programme in development, reductions conservatively based on assumed 2.5% annual incremental efficiency in utilities.				
Indicative investment	Under development	Approx. 2035 tCO_2e/yr saving	338	Scheduling	Ongoing programme of improvements

Programme	Water leakage reduction programme, Edinburgh Campus				
Summary	Despite significant reductions in water losses over recent years, parts of the original water distribution system remain along with substantial opportunities to reduce base load consumption (water leakage). Significant utility cost savings.				
Indicative investment	●○○○○ Costs require development	Approx. 2035 tCO_2e/yr saving	5	Scheduling	2024

Programme	Dubai Campus				
Summary	Incremental savings in utilities from ongoing efficiency projects (new campus is efficiently operating, has Gold LEED rating with limited opportunity for on-site renewables (other than research scale).				
Indicative investment	●○○○○	Approx. 2035 tCO_2e/yr saving		Scheduling	On-going

Travel and Transport

Programme	Fleet transition, Scotland campuses				
Summary	Target to transition all non-specialist vehicles to zero emission by 2025/26, ending leases / replacing fossil fuel vehicles.				
Indicative investment	Some increases in lease costs, partially offset by lower running costs	Approx. 2035 tCO_2e/yr saving	70	Scheduling	Incremental, to 2025/26

Programme	Sustainable Business Travel Policy implementation				
Summary	Modelling assumes that post-pandemic working changes (e.g. embedding use of collaborative technologies) will manage business travel, in particular flying, at a level below the baseline. The University's new Sustainable Travel Policy will define our approach to managing travel impacts and formalise associated targets.				
Indicative investment	Significant financial saving	Approx. 2035 tCO_2e/yr saving	1,239	Scheduling	From 2023/24

Circular Economy and Waste

Programme	Circular economy and waste improvements				
Summary	Opportunities to reduce emissions falling within the University's net-zero target emissions (Scope 3 from waste) and those subject to broader commitments regarding supply chain Scope 3. Quantification of emission reductions / setting associated targets to be completed following production of campus circular economy and waste plans.				
Indicative investment	Many changes likely to be cost neutral or to provide savings	Approx. 2035 tCO$_2$e/yr saving	To be determined	Scheduling	Plans produced 2023 and 2024

Our broader climate role and ambitions

The imperative for us to accelerate our climate action is clear, and via the implementation of the operational measures described within this Climate Action Framework we will take the swift action needed to transform our organisational climate impacts.

Our broader climate role, across our research, teaching and policy interventions, is far-reaching and presents opportunities to not only assist our own transition but critically, to achieve transformational change, at scale, in broader society. The University's research strength is being built upon by the University's new Global Research Institute, iNetZ+. The creation of iNetZ+ represents a significant increase in our impact via powerful, large-scale multi-disciplinary research tackling some of the most pressing net-zero transition challenges. The University also plays a leading role in the **UK Industrial Decarbonisation Research and Innovation Centre (IDRIC)**, established to address cross-cutting challenges and accelerate transition in the UK's key industrial clusters.

Developing new transformative technologies is vital to achieving a net-zero future, but beyond the technological level there are complex enabling challenges across areas including policy, business motivation, the finance gap and public awareness. Heriot-Watt's research and engagement activities are helping to find innovative approaches to these systemic challenges, and thereby help to accelerate the net-zero transition.

The University's Prospectus for Recovery and Future Growth illustrates how we will also contribute to meeting the critical learning needs around energy transition, developing the skills required to support sustainable economic growth and achieve net-zero. Across the full range of our net-zero activity we will work to support a just transition, where the benefits of climate action including job creation are shared widely, and where costs do not burden underprivileged groups.

Acknowledging the significance of our broader climate role, and in alignment with our GES Strategy, we will work to quantify the global emissions' impact of our radical innovations in research and policy and investigate setting innovative targets across the University's activities, for example addressing our total or net climate impact.

Get involved

Responding to the climate crisis will involve every one of us, and action across almost every aspect of how we live, study and work. To find out more about what you can do to support the University's net-zero targets, visit our **sustainability webpages.**