UNIVERSITY OF BIRMINGHAM

Carbon Management Plan

July 2025

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Executive summary

This Carbon Management Plan summarises the University's approach to carbon reduction, aiming to achieve net zero carbon (NZC) by 2045, and our annual reporting of progress.

This will see not only the University reducing its environmental impact but that of our suppliers, partners, and contractors alike, as we use our influence, partnerships and convening power to promote sustainable practices across our regional and global networks. Our approach aligns with our responsibilities as a signatory to the Concordat for the Environmental Sustainability in Research and Innovation Practice and most importantly, our civic purpose. As a University founded on social responsibility, we are committed to addressing the sustainability and climate challenges facing our world. This plan was reviewed and approved by the Sustainability Steering Group in July 2025; the Sustainability Steering Group are responsible for providing strategic oversight and co-ordination of the University's approach to delivering sustainability.

Introduction

As a University founded on social responsibility, we are committed to addressing the sustainability and climate challenges facing our world. Guided by the UN Sustainable Development Goals and our role as a leading global institution, we aim to drive positive change, not only through our research, education, operations and partnerships, but through the behaviour and actions of our students and staff, and our engagement with our local communities. Our ambition is to embed sustainability into everything we do—empowering our community to lead, innovate, and act for a more sustainable future, from our local region to the global stage.

This is reflected by the sustainability pillar of our 2030 Strategic Framework. The University of Birmingham has committed to making annual gains in reducing our carbon footprint, aiming to achieve net zero carbon for scope 1 and 2 by 2035 and overall by 2045.

Student Involvement

The University's Guild of Students were involved in shaping the 2030 Strategic Framework and setting our NZC targets. The NUS Carbon Targets initiative has ranked us as "Leading the Way" on commitments to reduce carbon emissions and taking action against the climate emergency.

To deliver on our net zero target, we have embarked upon an ambitious plan that includes and engages our students, colleagues, and other stakeholders. This Carbon Management Plan (CMP) outlines our approach to achieving NZC targets, through reduction of demand, production of cleaner energy where feasible, and offsetting of emissions.

Carbon accounting and emission scopes

The Greenhouse Gas (GHG) Protocol is the recognised global standard for carbon accounting. This categorises emissions into three 'Scopes' so that responsibility for them can be accurately allocated. Essentially, Scope 1 and 2 are those emissions that are owned or controlled by an organisation, whereas Scope 3 emissions are a consequence of the activities of the organisation but occur from sources not owned or controlled by it.

We are committed to continually improving the robustness of our data. In 2023 we changed the methodology to calculate our carbon emissions to realign with best practice set out in the Environmental Association of University and Colleges' (EAUC) Standardised Carbon Emissions Framework (SCEF); this resulted in a re-calculation of our carbon emissions in our baseline year, 2020/21.

A detailed breakdown of our re-baseline exercise and impact on our carbon reporting is presented in our Carbon Management Plan 2024, which can be requested from the Sustainability Team (sustainability@contacts.bham.ac.uk).

Baseline

Table 1 shows the breakdown of the University's carbon footprint across each scope for our baseline year 2020/21. Our carbon footprint is comprised of scope 1 and scope 2 emissions and scope 3 emissions including purchased goods and services, capital goods including building and refurbishment and transportation of goods to the University. This provides context for the number of areas where emissions reduction will need to be targeted.

Scope	Source	Baseline emissions (tCO2e)	Contribution to total (%)
1	Natural Gas	42,923	13.57%
	Fleet (owned / operated)	75	0.02%
	Refrigerants	225	0.07%
	Other fuels	192	0.06%
2	Purchased electricity	4,652	1.47%
	Heat & steam	24	0.01%
3	Procurement emissions	191,866	60.67%
	Fuel & energy procurement emissions	9,145	2.89%
	Waste	628	0.20%
	Business travel	9,767	3.09%
	Staff commuting & working from home	6,962	2.20%
	Student commuting (during university terms time and international home visits)	48,565	15.36%
	Leased buildings (downstream)	1,031	0.33%
	Water and wastewater	185	0.06%
	Total	**316,240**	100%

Table 1 – Carbon Emissions Baseline Table

Targeting carbon reduction

The University of Birmingham has a long history of carbon management, reduction and reporting dating back to 2006, with the publication of our first carbon management plan (CMP) in the first phase of the Carbon Trust's Higher Education Carbon Management Programme. We achieved our 2020 target to reduce our Scope 1 & 2 carbon emissions by 20% in absolute terms against a backdrop of increasing student numbers, construction of new buildings and increasing turnover.

This CMP outlines our approach towards the University's institutional Measure of Success (or KPI), aiming to achieve net zero carbon emissions across all scopes by 2045, 5-years ahead of the UK Government's 2050 legally binding target.

Milestones

The University will continue to work towards our absolute reduction targets, whilst also adopting relative metrics to support the progression of our carbon management program. To ensure that we remain on track toward our decarbonisation targets, an evolving plan of projects and initiatives, that will contribute to the reduction of carbon emissions, will be delivered; this work is overseen by the Sustainability Steering Group.

The NZC overall and interim targets for absolute emissions reduction will support delivery of the UK's legally binding target and aligns with the COP21 Paris Agreement, which seeks to limit the increase in global temperature to 1.5°C above pre-industrial levels. The strategic and interim targets we are aiming to achieve, are set out here:

- Milestone 1 (interim target) – By 2027, 18% carbon reduction, for Scopes 1 & 2 (against 2020/21 baseline)
- Milestone 2 – By 2035, to deliver NZC for Scopes 1 & 2
- Milestone 3 – By 2045, to achieve NZC for Scope 3

Monitoring and Reporting

Our Milestone 1 interim target will remain under review pending the proposed development of sector specific guidance. This approach is consistent with our position as a global leader in climate change research and will ensure our continuing alignment the COP21 Paris Agreement.

Carbon emissions will be calculated annually, allowing the monitoring and adjustment of our pathway to NZC with increasing accuracy. We intend to take a transparent approach to reporting, holding ourselves accountable to our NZC commitments by publishing our progress. Academic reporting of carbon emissions generated by University of Birmingham are reported annually through the Higher Education Statistics Agency. In parallel, we are developing an in-house carbon accounting framework.

Implementing Carbon Reduction

A range of activities have been co-created through our Sustainability Steering Group and sustainability action groups. SMART targets are agreed where appropriate, with the aim of reducing our environmental impact and enhancing the positive contributions we can make to tackling the climate crisis (see Appendix A). Activities have been collaboratively developed and will be regularly updated to maintain relevance and ambition; our pace and scale of delivery will be informed by a range of factors including costs, resources, co-benefits and viability of implementing low carbon technologies on our campus.

Focus of our activity will be in five parts and are explored in further detail below:

- Scopes 1 and 2
- Scope 3
- Community Involvement
- Biodiversity
- Offsetting

Scopes 1 and 2

As noted above, the University is aiming to achieve a target to deliver Net Zero Carbon for scopes 1 and 2 by 2035, with an interim target of 18% carbon reduction for scopes 1 and 2 by 2027. Several key actions will be required to deliver our decarbonisation target for scopes 1 & 2. As natural gas accounts for 89% of scope 1 and 2 emissions, the priority for decarbonising will be to move away from using gas to produce heat and power, to become an electrically powered campus (e.g. installation of low carbon heat pumps to decarbonise our Energy Centre). To facilitate this, initial activity will focus on reducing energy demand, such as LED lighting upgrades and heating, ventilation, and air conditioning controls optimisation as these are enabling measures for the electrification of buildings. Alongside this, fabric upgrades will be aligned to our Estates strategy where feasible, focusing on buildings that will remain on the decarbonised district heat network.

The University has received £2m grant funding under the Salix Public Sector Decarbonisation Scheme towards installation of an air source heat pump at the Institute of Biomedical Research. This will take the building's heating and cooling demands off the steam network and it is estimated that this project will deliver a c 3.5% reduction in our institutional scope 1 & 2 carbon footprint. The physical works are expected to be onsite during summer 2025 and the project is due to conclude by early 2026.

To date, 13 of our buildings at our Edgbaston Campus have rooftop solar electric panels to generate our own renewable energy and 75% of buildings at our Edgbaston Campus have energy-efficient LED lighting systems installed. We have committed to incorporating sustainability into the design of all major refurbishments or new buildings, as part of our 2045 Campus Vision, demonstrated by our new Molecular Science Building. At our Dubai

campus, we have reduced our electricity consumption by 25% through energy saving initiatives.

Scope 3

Scope 3 emissions relate to emissions that are not under our direct control such as the procurement of goods and services, business travel, and student and staff commuting. Our scope 3 emissions account for 87% of our total emissions, and as such, we will need to ensure that robust targets are set to ensure we achieve our scope 3 goal of net zero carbon by 2045. A baseline for the University's scope 3 emissions has been developed (as shown in Figure 1) and we are exploring options to continually improve the quality of our scope 3 data to inform meaningful targets for carbon reduction. Annual activity to improve the accuracy of our scope 3 data and enable reductions is overseen by the Sustainability Steering Group and delivered through our Net Zero Action Group and Data & Benchmarking Action Group. We target the following scope 3 areas:

- Business Travel
- Staff and Student Commuting
- Waste
- Water
- Procurement

Business Travel

Over the next 12 months, the University will introduce updated business travel guidance (which will be supported by accurate reporting) that aims to reduce carbon emissions resulting from business travel by encouraging the following:

- Use of Travel Management Company (Clarity) wherever possible for bookings
- Use of travel hierarchy principle
  1) Question necessity to travel at all
  2) Reduce travel
  3) Travel without flying where feasible and practical
- Mindful flight travel. It is important that those who do need to fly consider and use the least-carbon intensive modes of flight travel wherever feasible, e.g. considering cabin class, direct flying, travelling light and using the University travel booking tool.
- Use of virtual meeting technology and sustainable commuter travel options by staff and students to and from campus.

Staff and student commuting

We have also set targets to reduce our student and staff commuting to and from campus, which will be measured via our yearly travel survey. Key milestones include a target to reduce carbon emissions from single occupant car journeys by 270 mtCO2e by the end of 25/26 FY (Reduction of 5% from 23/24)

Waste

While waste is a small contributor to our overall carbon emissions, we recognise our responsibility to reduce waste and increase recycling rates. By August 2026, we are aiming to achieve a recycling target of 40% (currently 35%). These assumptions are reliant on engagement and behaviour change. It is anticipated that changes in UK waste legislation introduced 2025, as well as introduction of the following interventions will further drive changes in behaviour:

- Expansion of food waste collections focussing on building kitchens and areas of high footfall.
- Streamlining waste streams following audit and in anticipation of future compliance changes which will expand segregations further.
- Behaviour change campaign, aiming to increase recycling rate by introducing coffee cup schemes; utilising the sustainable champions network to educate and develop targeted campaigns.

Water

As part of our work to reduce emissions across our Estate and mitigate our environmental impact, the University is committed to reducing water usage, both on campus and within our residential accommodation stock. As such, the University has set a 10% water reduction target for absolute consumption and effluent by the end of the 2025/2026 academic year (for UK sites). We are developing a water infrastructure and management plan to review how we operate, invest in and rationalise our water system and direct improvement activity.

Procurement

Our suppliers are at a mixed level of carbon maturity, from industry leaders to those having taken no action. To meet our NZC targets, we will need to engage with our supply chain to encourage and lead (where feasible) decarbonisation at a faster rate. We have measured and mapped our supply chain to identify the suppliers having the biggest impact on our carbon performance and we are piloting a tool to more accurately measure our supply chain carbon emissions and encourage alignment with our sustainability goals.

To influence carbon reduction within our supply chain, we will prioritise improvement activity in the following areas:

a) developing and embedding sustainable procurement standards and practices in our contract management processes

b) continually improving the accuracy of our supply chain sustainability data and reporting

c) engaging and supporting our suppliers to adopt sustainable procurement standards and practices

d) engaging and supporting University staff to adopt sustainable procurement standards and practices

Community Involvement

While a significant component of achieving NZC will involve activities beyond the control of the individual (e.g. upgrades to buildings, changes to the energy centre), having a focus on behaviour change will ensure that staff and students are educated and supported to take personal action in a way that is aligned to our NZC targets. Various workstreams are already underway to engage staff and students across the University, and drive increases in energy and water efficiency and better waste management through behaviour change. The Engagement Action Group leads activity to engage our University community in sustainability and foster commitment to environmentally responsible practices across our campus, as described by our ‘Green Goals’.

We have already launched annual schemes such as Green Impact, ‘Green Week’ and a sustainability champions network to help progress these goals and we have introduced a Green Impact Laboratory Accreditation scheme at our Edgbaston Campus, to foster commitment to environmentally responsible practices in our laboratories. Over the next 12 months, we will seek to increase membership of our sustainability champions network, across our University community, to 400 members and hold a sustainability themed ‘Green Week’ in partnership with The Guild.

The University also acknowledges the importance of reputation-related factors in regards to supporting our carbon management aims. We closely monitor league table positions and benchmarks, such as the QS and People and Planet Sustainability league tables. We will seek to improve our standing relative to our peers in the higher education sector, measuring our progress and performance year on year.

Biodiversity

Increasing biodiversity at the University is an important consideration in the management of our decarbonisation plan. The University has published a Biodiversity Plan outlining our ambition, goals and objectives to use our influence to address the global nature crisis

and nurture and protect the University's natural capital, for the benefit of our community now and in the future. University of Birmingham has committed to the Nature Positive Universities pledge and will proactively share examples of our progress through their network. The Biodiversity Action Group oversee the delivery of the Biodiversity Plan, and activity aligned to the following key priorities:

- Raise awareness of the importance of biodiversity and foster commitment to nature conservation
- Enhance biodiversity on campus
- Establish sustainable field facilities on campus
- Promote human connection with nature

Biodiversity Plan 2024 (PDF)
Biodiversity Plan 2024 (Word)

Offsetting

Whilst our current focus is on reducing our absolute emissions as far as is practicably possible, we recognise that to meet our Net Zero Carbon targets, it will be necessary to offset any remaining "residual" emissions. At this stage, it is anticipated that any offsetting would be steered through the EAUC Carbon Coalition initiative to ensure maximum value for money and confidence in the projects being invested in.

Offsetting for travel booked using university funds should be avoided unless off setting has been agreed by the University Sustainability Steering Group, in partnership with an external research funder. In these instances, staff are required to book travel via the University travel booking portal and use the off-setting option selected. Only a small number of external research funders offer this facility at present.

Governance, Authority and Reporting NZC

There is a strong governance model in place for ensuring the Net Zero Carbon targets are met. This has been developed to drive action linked to strategy by providing a mechanism for effective reporting into senior leadership and optimising engagement with key stakeholders. The governance model is set out below.

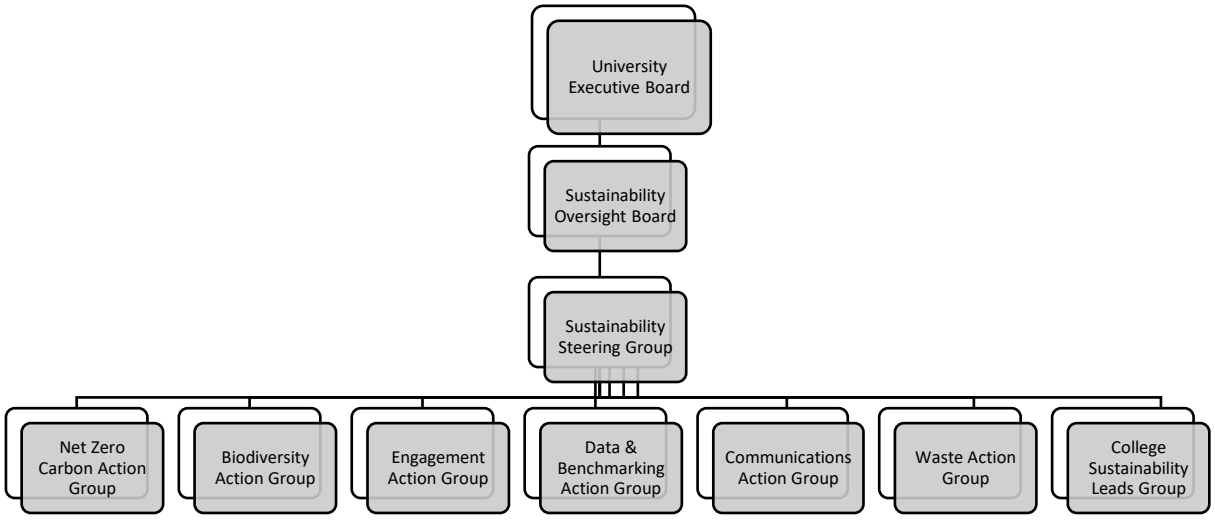

Figure 1 – University of Birmingham Sustainability Governance Structure

Sustainability Oversight Board (SOB)

The SOB is chaired by the Vice-Chancellor and is responsible for:

- Holding the Sustainability Steering Group to account for progress against the University's sustainability ambitions, as set out in the Strategic Framework;
- Reviewing and approving plans that deliver against the University's sustainability ambitions;
- Reviewing the effectiveness of management processes and controls over delivery against the sustainability ambitions;
- Overseeing the resource profile for delivery of the University's sustainability plans;
- Ensuring connectivity between Sustainability and other key strategic initiatives.

Sustainability Steering Group

The Sustainability Steering Group provides strategic oversight and co-ordination of the University's approach to delivering the Sustainability Goals and Priorities outlined in the Sustainability Pillar of the Strategic Framework.

Specific tasks to be delivered to achieve our Sustainability Strategic Priorities are grouped into thematic areas and agreed by Sustainability Steering Group. Activity

aligned to each theme is led by accountable leads and delivered through cross-campus action groups. Specific key tasks carried out by the Sustainability Steering Group include:

- Overseeing the development and work of the cross-campus sustainability action groups
- Checking on progress, monitoring performance and examining all business cases for proposed projects and additional resourcing.
- Reporting progress to the Sustainability Oversight Board and University Executive Board.

Roles and responsibilities of Sustainability Steering Group members:

- Executive Sponsor of NZC - Professor David Hannah – Deputy Pro-Vice-Chancellor for Sustainability and Director of the Birmingham Institute for Sustainability & Climate Action (BISCA).
- University Lead of NZC - Zoe Hurley- Head of Sustainability (University Business Lead for Scopes 1, 2 & 3).
- Accountable Lead for scope 1 & 2 – Steve Jordan – Director of Estates
- Accountable Lead for scope 3 - Simon Bray – Director of Campus Services
- Professor Julia Myatt – Academic Director of Sustainability Education
- Mark Senior – Chief of Staff
- Danielle Edwards – Deputy Director of Finance (Projects)
- Monica Guise – Director of Facility Services
- Rebecca Lambert – Director of Planning and Performance Insight
- Alison Lundy – Sustainability Project Officer and EA (Secretary)
- Tara Lamplough – Head of Business Partnering, IT Services
- Dr Laura Graham – Biodiversity Action Group Lead
- Kathryn Hobbs – Deputy Director, Communications and Reputation
- Professor Jonathan Radcliffe – Professor in Energy Systems and Policy
- James Sharman – Decarbonisation and Sustainability Manager
- Charlie Crofts – Procurement Sustainability Lead, Early Careers rep
- Max Williams - Sustainability Officer, Guild of Students
- Abhijeet Patel - Sports Officer, Guild of Students

Sustainability Action Groups

A brief description of each group is provided below:

- Net Zero Carbon Action Group - To develop a clear plan and lead initiatives to embed environmentally responsible practices and deliver projects and programmes designed to reduce emissions generated by energy consumption,

travel, food and catering practices and our supply chain (including digital suppliers). Oversee delivery of water reduction priorities.

- Engagement Action Group - To develop a clear plan to foster commitment for environmentally responsible practices across the University community and lead targeted engagement activity
- Data & Benchmarking Action Group - To improve access and use of data to enable environmentally responsible practices and evidenced-based decision making within the University. Supports and steers sustainability league table assessment and progression.
- Waste Action Group - To develop a clear plan to foster commitment to environmentally responsible waste management and circular economy practices across the University (including digital waste)
- Communications Action Group – To develop and deliver a communications plan to support delivery of the Sustainability Goals and Priorities
- Biodiversity Action Group – To oversee delivery of the Biodiversity Plan and fulfil our duties as a Nature Positive University

Membership of each working group has been purposefully designed to promote cross functional working. Similarly, there is expected to be a high degree of overlap between the activity of the groups, to be managed through shared membership, clarity of ownership and joint working.

The above action groups have agreed SMART objectives to deliver annually, working towards the Sustainability Goals and Priorities outlined in our Strategic Framework. Action Groups will also assess resource requirements to ensure priority is given to projects and initiatives that deliver the highest impact and best return on carbon saving (e.g. £ invested / tonne saved) where relevant; reporting resource impacts and delivery to the Sustainability Steering Group as required.

Other groups

The following groups also report into SSG.

- Research / BISCA – This group will ensure that major University initiatives are developed and that they share our research and impact on sustainability and that we contribute to sustainability through national and global collaboration. BISCA updates are provided through SSG Chair, Professor David M. Hannah.
- College Sustainability Leads Group – bringing together academic Sustainability Leads in each College alongside other sustainability professionals, in termly meetings.

The Governance structure will be reviewed annually, to ensure it is fit for purpose in supporting the University in achieving its sustainability ambitions.

Appendix A – SMART Targets Table

Impact Area	Objective	Target	KPI
Procurement *	Reduce procurement related emissions and improve the sustainability of our supply chain	1) Reduce Scope 3 emissions from procurement* by 2% by the end of 25/26 AY 2) Reduce Scope 3 emissions from procurement* by 2,902 mtCO2e by the end of 25/26 AY	Reduction in Scope 3 emissions from procurement*
Water	Reduce water consumption across Campus	1) Reduce absolute water consumption and effluent for UK sites by 10% by end of 2025/26 academic year (compared to 23/24) , equating to a 20.1mtCO2ereduction in emissions.	% reduction in water consumption, and resulting reduction in Scope 3 emissions.
Waste	Reduce waste and increase recycling rates across campus	1) Increase recycling rate to 40% by August 2026	% of waste going to recycling
Business Travel	Minimise the environmental impact of University related business travel	1) Reduce carbon emissions from business travel taken by University staff by 2% by the end of 25/26 FY, compared to 23/24 2) Reduce carbon emissions from business travel by University staff by 390.7 mtCO2e by the end of 25/26 FY, compared to 23/24 3) Reduce the business travel emissions, from spend on expenses and corporate cards, by 115 tCO2e (5%) by the end of 25/26 FY, compared to 23/24 to increase the precision and reliability of business travel data	Reduction in scope 3 emissions from business travel, and improvement in accuracy of business travel data.
Staff Commuting	Minimise the environmental	1) Reduce carbon emissions from single occupant car journeys by 270 mtCO2e by 25/26 FY (Reduction of 5% from 23/24)	Reduction in carbon emissions from single use car journey (data collected through annual travel survey)

	impact of staff commuting		
Community Involvement	Increase awareness and engagement of students and staff around climate and sustainability issues	1) Increase sustainability champion membership to minimum 400 members by the end of academic year 25/26 2) Deliver a Sustainability Champions engagement event 25/26 3) Deliver one Green Week per year in collaboration with the Guild of Students	Number of sustainable champions, delivery of event and Green Week
Biodiversity	Increase biodiversity across our campus	1) Deliver biodiversity net gain (BNG) in alignment with local planning regulations by at least 10% beyond the pre-development levels, as set out in the Environment Act 2021, which applies to most developments.	Delivery of Biodiversity Net Gain of 10%
Construction and refurbishment	Ensure sustainability and climate resilience are built into construction and refurbishment projects	1) We will deliver a reduction in Scopes 1and 2 emissions of 3.5% by end of 25/26 financial year (compared to our 2020/21 baseline) through installation of heat pumps in the IBR building	Reduction in Scope 1 and 2 emissions

*Inclusive of purchased goods and services, capital goods including building and refurbishment, and transportation of goods to the institution.