UWE Bristol

Transforming futures: Our Path to 2030

Acting today for a sustainable tomorrow. Together, we're transforming our world for better, for all, for good – as we push ahead on our #OurPathTo2030.

Sustainability Report 2022–23

Everything that's in this report

Introduction

Net zero carbon

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Sustainability
At the heart of every decision we take

As a thriving local university with global reach, we strive to continuously improve in all aspects of sustainability.

Our climate and sustainability related teaching, research and innovations are making significant real world positive impacts. And we'll keep walking the talk, by continually improving how we embed sustainability into how we operate our university and facilitate sustainable campus living.

Because climate change is a threat to all of us.

We must take every opportunity to reduce our carbon emissions, preserve and restore nature, and adapt to the rapidly changing conditions of the 21st century.

In this report, we set out our progress and share our highlights from academic year 2022–23.

Professor Sir Steve West CBE, DL, Vice-Chancellor, President and CEO, UWE Bristol

Green Gown Green Skills Award

The Green Skills for Jobs and Entrepreneurship programme, led by UWE Bristol, in collaboration with NatWest and the Black South West Network, won the Diversity, Equity and Inclusion Award at the 2022 Green Gown Awards.

The programme provides access to green jobs, training and business opportunities to Black, Asian and minoritised young people, and recent graduates living in our region.

The judges commended the programme, saying *"it addresses an important issue in the environmental profession. The project has achieved so much over such a short period of time, reflecting the passion of the people involved. A very replicable project that fits the award criteria very well."*

The defining issue of our time

As a university, as a diverse community of global citizens, we have a shared responsibility to work together to address the urgency of the climate and ecological emergency.

We continue to drive the remarkable transition to a decarbonised and regenerative economy in the west of England and beyond. And we are constantly investing heavily in campus improvements and new technology.

But beyond building a truly sustainable university, one where sustainability is embedded into every area and every individual is empowered to make sustainable choices, we're using our powerful voice to highlight and champion sustainability – throughout our university community, and across the west of England and beyond.

We're sharing our progress, showing everything we've done and continue to do against our **Strategy 2030**, in this 2022–23 Sustainability report.

A healthier, happier, socially-just future for all.

Everything we do, every action we take, every measure we adopt, is set within the context of the United Nations Sustainable Development Goals (SDGs).

We'll continue to be guided by science and objective evidence. And we'll only ever implement sustainability policies and solutions within a social justice framework with inclusivity at its heart.

We promise to:

- Show ambition and leadership in addressing the sustainability challenge.
- Work in partnership with The Students' Union at UWE Bristol, with city-region agencies and with national bodies
- Ensure that all UWE Bristol departments understand their sustainability obligations, impacts and opportunities and that appropriate actions are incorporated into annual service and financial planning cycles.
- Devise new ways of delivering sustainable teaching, research and estates operations.
- Use our procurement processes and purchasing power to influence our supply chain, through local and ethical procurement. We'll work with our suppliers to encourage the highest standards of sustainability performance.
- Learn from our failures and our successes, and share our accumulated knowledge and experience on the journey to sustainability.

This is Strategy 2030 in action

Having declared a Climate and Ecological Emergency in February 2020, and launched our Strategy 2030, we're committed to:

- Being carbon neutral as an organisation, with net zero emissions of greenhouse gases by 2030.
- Working through the ISO 14001 standard to set clear targets and plans to reduce water and energy use, cut waste generation including food waste, and support biodiversity.
- Eliminating all but essential single-use plastic and meeting the 2025 targets for recycling and reuse (as signatories to the UK Plastics Pact).
- Establishing each of our campuses as a clean air and smoke-free zone.
- Investing in and securing year-on-year improvement in travel sustainability for staff, students and visitors.
- Working with our students to explicitly address climate change and environmental challenges through our teaching, learning and curriculum.
- Supporting research that addresses issues relating to climate change, environmental challenges and biodiversity.

A suite of action plans sits beneath Strategy 2030. Through this strategy and these action plans, we continue to work to address the urgency of the Climate and Ecological Emergency, and fulfil our role in the achievement of the UN SDGs.

This way for more on our commitment to action on climate

Net zero carbon

Achieving net zero carbon by 2030

We continue to carry out significant work to reach this ambition – across our wider operations.

Carbon and energy management

Throughout 2022-23, we continued to develop the detail of our plans to reduce energy use and decarbonise on the road to our net zero carbon target.

We further incorporated plans for solar panel installation and heat network extension. We've also carried out feasibility studies and developed estimates of planned projects in the wider developments for building upgrades and refurbishment across our university.

Take a closer look at how we're actively managing – and driving down – our energy use and carbon footprint:

Heat Decarbonisation

Solar PV

New build student accommodation

Engagement and carbon literacy

Scope 3 Action Plan

Heat Decarbonisation

Frenchay Campus

In March 2023, we secured a £3.6million grant from the Salix finance scheme to expand our District Heat Network (DHN) across our Frenchay campus. We've made big progress with our DHN plans following this funding and the design and tendering process will continue – with construction expected to take place from 2024-25. We have a separate heat decarbonisation plan in place for Nettlehaven House, which includes Salix upgrades and the installation of an Air Source Heat Pump (ASHP). We're carrying out similar studies for the Farmhouse and Nursery.

Bower Ashton campus and other sites

By 2030, our Bower Ashton campus will be connected to a local (off-campus) ASHP, so we'll install our own ASHP or GSHP on site.

We're still working on plans for Hillside Gardens and Arnolfini campuses, but ASHP are an appropriate solution for both sites.

Solar PV: Frenchay campus and other sites

We have successful tenders for Solar panels on N Block, plus an extension of the panels on T Block. The designs have been completed and the panels are expected to be in place and operating by the end of 2023. We are also looking at the feasibility of installing solar panels on other buildings and other UWE Bristol campuses, including Blocks B and C at Bower Ashton and buildings at Hillside Gardens.

We're also exploring solar carports – to see if we can install them at all UWE Bristol sites.

> **Installing solar PV panels makes sense three times over for UWE Bristol, by helping it achieve its goal of halving its carbon emissions, saving on energy costs and producing a good return on its investment."**
>
> Richard Harris, Renewable Energy Consultant

> **The sustainability initiatives on campus, such as the solar PV system, not only highlight UWE Bristol's dedication to minimising environmental impact but also provide students with opportunities to see sustainability in practice."**
>
> Fabio Jeldrim-Vidier , School Director – Academic, School of Engineering, UWE Bristol

New build student accommodation

We're making excellent progress on our new-build student accommodation on Frenchay campus, which will be one of the world's most sustainable accommodation schemes built to Passivhaus standards.

Passivhaus is the gold standard in energy efficiency, and ensures that buildings use less energy than standard build, and will be fossil fuel free to ensure minimised carbon emissions in operation.

Engaging students, staff and communities, and increasing carbon literacy

Climate education course

In September 2023, we rolled out a brand new climate education course for all UWE Bristol students. A free online course, it's designed to give students a broad basis of knowledge on climate change and sustainability, and encourages them to think about their own actions and changes they can make – and help others to make – to mitigate against climate change.

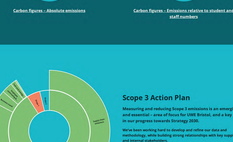
There's more on our climate education course here.

Workshop, programmes and initiatives

We also continue to run team workshops for staff on their carbon and sustainability impact. As well as helping them to better understand how their work contributes to our sustainability goals, and how they can reduce their carbon and sustainability-related effects, we want to show them how they can practically and effectively reduce their impact. This year, we ran sessions with the Arnolfini, Future Students, Cosmo Hall, Student Accommodation, the Students' Union and the Estates department.

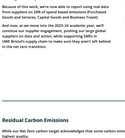
We've also contributed to specific University programmes through guest lectures and support for the environmental management and energy management degree students. We supported and continue to support a different form Bristle Festival, which is a free-to-attend festival in Bristol which offer education and training for local businesses and young people in our region.

Carbon and energy management KPIs



Carbon figures – Absolute emissions

Carbon figures – Emissions relative to student and staff numbers



Scope 3 Action Plan

Measuring and reducing Scope 3 emissions is an emerging – and essential – area of focus for UWE Bristol, and a key pillar in our progress towards Strategy 2030.

We've been working hard to develop and refine our data and methodology, while building strong relationships with key suppliers and internal stakeholders.

In March 2023, we recruited a dedicated Carbon and Supply Chain Sustainability Officer. This role has been vital in data analysis and relationship-building, but also in developing our plan of engaging and delivering net zero focused workshops for SMEs.

Our strategy for addressing Scope 3 emissions is based on 3 areas.

Data

Accurately measuring supply chain emissions and using data to drive our strategy.

Internal engagement

Engaging staff and students, shaping behaviours, policies and processes.

External engagement

Working with suppliers and collaborating with partners to decarbonise our supply chain and the regional transport system.

Further improving our data collection and validation

This year, we've improved our data collection and validation methods in the following ways:

- We've brought measurements of Scope 3 emissions in line with new sector standards.
- We've introduced a methodology for calculating student commuting emissions (previously only international student travel was calculated).
- We've adopted the DASC international travel emissions tool for calculating emissions from international student travel.
- We've also developed a calculation tool to estimate the carbon savings associated with the UWE Bristol Sustainability Hub.

Actively engaging our suppliers

We've started more in-depth engagement with key suppliers on reporting and reducing supply chain emissions. Initially, by focusing on two key areas: Construction and IT.

Because of this work, we're now able to report using real data from suppliers in the Scope 3 emissions categories of Capital Goods and Services, Capital Goods and Business Travel.

And now, as we move into the 2023-24 academic year, we'll continue our supplier engagement, pushing our large global suppliers on data and action, while supporting SMEs in UWE Bristol's supply chain to make sure they aren't left behind in the net zero transition.

Residual Carbon Emissions

While our Net Zero carbon target acknowledges that some carbon emissions may be unavoidable, we're determined that any offsets are of the highest quality.

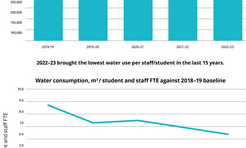
We've been developing a potential means for managing this through the Advisory Group and Financial Working Group for SOS-UKs Farming for Carbon and Nature programme.

Water Management Plan

We're focused on water emissions or improving visibility of where water is used across campus sites, through improved monitoring of meter data. Alarms and weekly visual monitoring of consumption patterns enables our Carbon and Energy team to quickly become aware of unusual consumption patterns, so leaks can be resolved quickly.

As a result of active leak management, absolute water use is reducing across all UWE Bristol sites.

UWE's Centre for Quiet Spaces plans to restore to replace their wastes-based aquaponyl pitch with a sand-based surface, which will keep us on track to save even more water in the future.



2022-23 brought the lowest water use per staff/student in the last 15 years.

Targeted, effective environmental management

In July 2023, UWE Bristol's environmental management system was recertified to the international standard ISO14001:2015 by a team of external auditors.

We continue to have – and are fully committed to – clear targets and plans to reduce water and energy use, cut waste generation (including food waste), and support biodiversity. The standard also means we're committed to continually improving the way we manage these plans and targets.

ISO 14001 ENVIRONMENTAL MANAGEMENT

UKAS MANAGEMENT SYSTEMS 0012

UWE Bristol Hospitality for planet friendly food

Sustainable food

Our Hospitality Services are committed to providing good quality, locally sourced food across non-franchised UWE Bristol catering outlets. We encourage and support a healthy, active lifestyle, and offer a wide range of meals which promote a balanced diet.

One of our sustainable food plan objectives was to open **a plant-based** Sky Garden Food Court and **vegan** Hub Kitchen, with its 100% plant-based menus. Given our ambitious plans across all catering outlets, we now have **around 37% of main meal options that are plant-based**. That's up by 5.3% compared to last year.

We also work with all our suppliers to encourage proximity purchasing to minimise food miles. By locally sourcing food and ingredients, we contribute to thriving local economies and sustainable livelihoods while avoiding damaging natural resources and reducing our contribution to climate change.

Our commitment to sustainable food sourcing led us to produce a **Sustainable Palm Oil Policy**. This policy sides us with getting our food from companies that are members of the Roundtable on Sustainable Palm Oil (RSPO) standard on the use of palm oil in food products. The policy is in place and our target is to be fully compliant by 2030.

Working with colleagues across the university and the Students Union, we achieved our **Fairtrade Universities and Colleges Award** for 2022-24 in the summer of 2022.

Taking away single-use containers

Following up on our 2018 hot beverage cup trial, we introduced a **Take Away Cup Trial** in 2019 to 2020 to see if a reusable cup system would meet a take away customer. For food, they were collected at least 12 months of data, we'll be able to see the impact it's having and whether we need to do more to drive down single use containers.

Food for Life

Our Frenchay OneZone, UWE Bristol Hospitality's flagship restaurant, currently holds the Food for Life Silver award – we have achieved this accolade eight years in a row.

The Food for Life Served Here Award is an independent endorsement, backed by annual inspections, for food providers who are taking steps to improve the food they serve.

Our sustainable purchasing increased from 43% to 59% compared to last year. And 41% of our suppliers are within a 30-mile radius of Bristol.

This award shows our commitment to making healthy eating easier for customers, and how we're using eco-friendly, ethical ingredients. We continue to encourage the use of local produce, to support our local economy and protect the environment for the future.

Investigating climate impact on modern slavery risks in public sector supply chains

Reducing our food waste

From reusing food to being creative with our use of ingredients, we're continually looking at ways that we can minimise food waste across all our catering outlets. We've also placed food waste bins in back-of-house kitchen areas to increase the proper disposal of food waste into a compostable waste stream.

Food (and drink) with more thought

Here are some of the other ways that we're thinking and acting more sustainably.

- Used coffee grounds are now used as fertiliser on our own grounds.
- We're working with a celebrity chef to give students and staff the opportunity to learn how to cook sustainably priced meals using fresh ingredients.
- We're rolling out the Too Good to Go food app across the majority of catering outlets from January 2024.
- We're running healthy eating and wellbeing promotions throughout the year for students and staff and students more incentives to buy healthier options.
- We're selling low sugar/sugar free drinks (canned and bottled drinks) at a reduced price tariff.
- We're encouraging students to take part in Grow-Harvest-Cook sessions as part of our Living Well programme. Every two weeks, we run fun sessions with students where they learn how to make healthy, wholesome meals they can easily cook up at home.

A quick stop at the Repair Café

In March 2023, UWE Bristol Engineering staff were granted funding to open a 'repair café' on our Frenchay campus. Thanks to the Repair Academy of Engineering, this funding ensured the project would run until May 2024.

This allowed UWE Bristol staff and students to make links to the wider Bristol community, repair items, reducing disruption to community repair facilities, and to offer a free service to the community, engineering equipment. They've been helping to solve problems, fix broken goods and upskill those involved in the scheme, supporting the circular economy.

Nature positive: Landscape and biodiversity

From our get-away-from-it-all garden, to improving conditions for pollinators, we've seen several exciting landscape and biodiversity projects come to fruition across the UWE Bristol estate in 2022-23.

Come and look at everything we've done:

And… relax… in our Restoration Garden

This unique outdoor space on our Frenchay campus, completed in April 2023, provides students and staff with an everyday escape. It's somewhere they get away from their everyday distractions, just while the work they normally do and to take a rest from mental effort of any kind.

It's an enclosed natural haven, where you can connect with elements of nature in a beautiful, tranquil location close to the heart of our busy campus. The gardens proven to be a valuable asset to our green infrastructure, providing a tranquil environment for wellbeing, providing an external meeting and teaching space and – essentially – a tranquil secluded space for people to come and relax.

The planting's on the wall. The Green Wall

As part of the regeneration of F Block on our Frenchay campus, our Estates department has delivered another beautiful external space: the OneZone terrace. There's a new layout, with improved seating, green canopies, Beeline planting and the first Green Wall on Frenchay campus.

It's a wonderful example of how we can introduce green spaces into the built environment. And it doesn't just look beautiful. Its vertical planting has attracted not only a variety of pollinators but other positive visitors too.

The UWE Beeline

Tree planting

Plant propagation

Grassland management

Artificial habitats

Engaging staff and students

Building with Nature

Embracing the circular economy

Getting round to waste reduction: embracing the Circular Economy

As signatories to the UK Plastics Pact, we're taking positive action to eliminate problem plastics for good.

Returnable coffee cups

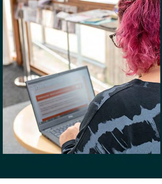
Working with **City To Sea** and our own Hospitality team, we launched a returnable coffee cup scheme in June 2023, in the Atrium Café and Wild Kitchen. We had 454 uses of the scheme between June and October 2023, with staff and students signing up for the free app.

We've been working with **Team Entrepreneurship** students to gather information about barriers to use, and behaviour around single use cups. The pilot finished in December 2023 and we're working with Hospitality to define next steps. Ideas that we're looking at include increasing the single use cup levy, more impactful communication around the impact of single use cups, and finding a better recycling solution.

Donating UWE Bristol tech

We continue to donate good condition, useable UWE Bristol tech to various charities and community groups, as you can see here - and we'll continue this into 2023-24. We're also adding a page to the UWE Bristol website where charities can be directed to and request items.

Charity	Item	Number
Independent People 16-25	PC computers, screens and accessories	15
3rd Chippenham Scouts	Projector	1
St Mungos	Laptops – Elitebook 840 G3	15
Sesame Girls Secondary School, Kisoro, Uganda	PC computers, screens and accessories	10
	TOTAL	41



Reusing and recycling UWE Bristol tech

Working with **Stone**, we've sent 4595 pieces of tech for reuse and recycling. We're working closely with Stone and our Waste and ITS teams to get more of our tech reused and diverted from disposal.

Also, through our partnership with **CollectEco**, we donated reusable furniture, equipment and materials. The result was:

- £70,174 value donated to the community
- 16 good causes supported
- 18,417kg CO2e avoided
- 12,237kg diverted from landfill

We'll continue working with **CollectEco** where we have surplus usable furniture within our estate. We're also looking at purchasing reused items from them for our own refurbishment projects.

University of The West of England
2023/24
Our contribution to our local community
1.4 Million
gallons of water
We saved enough to supply 130 average UWE homes
We saved enough water to fill 3 Olympic swimming pools
We saved enough water to fill 400 gallons of water CO2
We saved enough water to fill 498 bathtubs of CO2
Food waste saved
59,488
Food waste saved equivalent to 22,308 meals
Food waste saved
4,327 tonnes
Equivalent to 11 buses
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Clean air zones

Air pollution is described by the WHO, the EEA, the EU and the UK government as a major environmental health risk. Here's everything we've done – everything we continue to do – to protect people, communities and our environment.

We're establishing clean air zones across our three campuses

Air pollution is described by the WHO, the EEA, the EU and the UK government as a major environmental health risk. Here's how we're tackling it.

Campus clean air zones

In November 2022, Bristol's *City Centre Clean Air Zone* went live - covering our City Centre operations in the Arnolfini, Spike Island and Watershed facilities in the Harbourside. Like other Clean Air Zones in the UK, it's designed to lower harmful emissions in the air by discouraging drivers of older petrol and diesel vehicles from entering the city.

As part of our Strategy 2030, we've set the ambition to establish clean air and smoke-free zones at each of our three campus locations: Frenchay, Glenside and City campus. We want to improve air quality for staff, students and visitors, and reduce the risk of exposure to adverse pollutant concentrations.

By measuring prevailing air conditions, and by delivering targeted interventions through our Travel and Carbon and Energy Management plans, we'll protect staff, students and visitors from poor air quality.

Now, let's look at the prevailing air quality at each UWE Bristol campus.

UWE Bristol air quality summary

City campus

Glenside campus

Frenchay campus

Now, next

UWE Bristol air quality summary

Here, we set out the annual average concentrations of (where data are available) three key pollutants on our campuses: Nitrogen Dioxide (NO_2), Particulate Matter with an aerodynamic diameter of 10 µm (PM10 and 2.5 µm (PM2.5).

The quality of data from the instruments used to collect it will vary. So, the data here should be considered indicative or unverified unless stated otherwise.

Automatic analysers in use by **Bristol City Council** and three at **Coldharbour Lane** are considered the most accurate measurements, with instruments and data collected, verified and ratified on an annual basis.

Diaphor air quality sensors in use on Frenchay Campus are considered medium-tier quality, with co-location exercises undertaken before purchase by Earthwise.

Data derived from the Umbrella network are considered low quality. This is because of the low-cost nature of the sensor. These data are still being reviewed for verification and calibration.

Diffusion tube data used to understand the concentrations of NO_2 in Bristol City are widely used by Local Authorities and uncertainties are well understood. For the purposes of these reports, these data are considered robust.

The English air quality objectives, and the more stringent WHO thresholds, are set out in the appendix.

City Campus

While there were no automatic monitoring stations at Bower Ashton, there were two Diffusion Tube monitoring stations nearby – as described in the table below.

The annual average concentrations at these locations have dropped between 2021-22.

Bower Ashton measurements

Monitoring point	Passive NO_2 (µg/m³) Annual Mean - 2021	Passive NO_2 (µg/m³) Annual Mean - 2022
Ashton Park School (5d0)	26.3	23.3
Except local buses sign Blackmoor Lane (5h8)	26.5	24.2

Our City Campus is dispersed across three other locations (excluding Bower Ashton): Arnolfini, Spike Island and the Watershed.

There were no automatic or passive monitoring data for the Arnolfini or Spike Island locations. There were three diffusion tube monitoring locations near the Watershed.

It's worth noting that diffusion tubes situated on Anchor Road show concentrations of NO_2 close to, or above, the annual objective limits.

The College Green diffusion tube monitoring station measured lower concentrations of NO_2 through 2021 and 2022. In addition, the closest automatic monitoring station to both the Watershed and Arnolfini, located on Colston Avenue, shows an annual mean for 2022 (the most recent year with ratified air quality monitoring data) still breaking the 40 µg/m³ annual average objective.

Traffic, gas boilers, construction activity and background emissions are the main issues affecting air quality at City Campus.

Now that much our City Campus is within **Bristol's Clean Air Zone**, we believe that the actions taken to limit vehicle access into the zone will help reduce concentrations experienced near to and around our campus buildings. The net effect will be to bring air quality into compliance with English air quality objectives by 2025.

Arnolfini, Spike Island and Watershed measurements

Building	Monitoring point	Automatic NO_2 (µg/m³) Annual Mean - 2021	Automatic NO_2 (µg/m³) Annual Mean - 2022	Passive NO_2 (µg/m³) Annual Mean - 2021	Passive NO_2 (µg/m³) Annual Mean - 2022
Arnolfini	N/A	N/A	N/A	N/A	N/A
Spike Island	N/A	N/A	N/A	N/A	N/A
Watershed	Anchor Road(d02)	N/A	N/A	38	42.7
Watershed	Anchor Road (107)	N/A	N/A	43.3	45.3
Watershed	College Green (d01)	N/A	N/A	29.4	30.8
Watershed	Colston Avenue Automatic Analyser	40.8	38.2	N/A	N/A

While levels have risen across Bristol City Centre, this is probably down to the post-COVID rebound in travel for the period reported here. We expect these to drop as the effects of the CAZ take effect from late 2022.

Glenside Campus

There are no air quality monitoring data for the Glenside Campus. The nearest monitoring station is located on Fishponds Road, near the junction with **Alexandra Park**.

The site is categorised as a continuous urban traffic location and measures pollution using a chemiluminescent NO_2 analyser. It's likely that air quality at, or nearby, the campus will comply with English Air Quality Objectives and EU Limit Values for NO_2 and PM_{10}.

Traffic, gas boilers, construction activity and background emissions are the main issues affecting air quality at Glenside Campus. We expect to disperse of traffic emissions from road and background sources. Modelling of air pollution undertaken by the Horizon 2020 **ClearCity project** provides our best estimate of air quality on and in the vicinity of the campus.

The modelling study showed that air quality met English Air Quality Objectives for NO_2 and PM_{10}.

Glenside campus measurements

Monitoring point	Chemiluminescent NO_2 (µg/m³) Annual Mean - 2021	Chemiluminescent NO_2 (µg/m³) Annual Mean - 2022
Fishponds Road (A03)	29.4	26.6

In 2022, the site reported an annual average concentration of 26.6 µg/m³, well below the air quality objective.

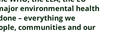
Frenchay Campus

Traffic, gas boilers, construction activity and background emissions are the main issues affecting air quality on the Frenchay Campus.

There are three tiers of air quality monitoring data available for Frenchay Campus, two of which we report here. The highest quality data are derived from the automatic monitoring station situated on the A4174, near the junction with Coldharbour Lane.

Two Medium-tier *Diaphor* air quality monitoring stations are situated on campus; one at the bus station and another at a background location near the Farmhouse.

Finally, the campus has up to 19 monitoring points using low-cost air quality sensors. We're still reviewing the data from these.



Frenchay campus measurements

Monitoring point	Automatic NO_2 (µg/m³) Annual Mean - 2022	Automatic NO_2 (µg/m³) Annual Mean - 2023	Automatic PM_{10} (µg/m³) Annual Mean - 2022	Automatic PM_{10}(µg/m³) Annual Mean - 2023	Automatic $PM_{2.5}$ (µg/m³) Annual Mean - 2022	Automatic $PM_{2.5}$ (µg/m³) Annual Mean - 2023
Coldharbour Lane monitoring station (outside)	21	17.9	26.1	17.9	8.6	7.6
Diaphor LIMS Background	12.8	8.1	11.2	9.5	7.6	7.3
Diaphor LIMS Bus Station	18.6	19.2	12.7	10.4	10.1	8.8

As you can see, the Coldharbour Lane monitoring station doesn't report concentrations of NO_2 or particulate matter above the national objectives of an annual mean of 40 µg/m³.

According to the *Diaphor* mentors, NO_2 has risen at the bus station, as services have returned to normal, but dropped at our central location away from this transport hub.

$PM_{2.5}$ and PM_{10} at an annual average have dropped across the board. On campus *Diaphor* monitoring stations1 this brings $PM_{2.5}$ below the WHO threshold of 15 µg/m³ annual mean and PM_{10} below the UK limits of 18 µg/m³ at an annual mean.

Comparing background and bus station *Diaphor* monitoring station data show that concentrations of NO_2 at the bus station are ~11 µgm³ above background measured concentrations while PM_{10} concentrations are 1-3 µgm³ above and $PM_{2.5}$ 0.5 µgm³ below background.

Now, next

Over the next decade, changes in the emission profile of many sources contributing to air quality at each campus will help us meet the Clean Air Zone ambition.

With penetration of EVs into the car and van fleet, reduction in emissions from road transport will be a key driver. The composition of the emission characteristics of buses and the changing fuel mix in power generation will reduce local and background air pollution.

However, we're likely to see types of pollutants we're concerned about change as we move towards smaller, lighter particles from road, tyre and brake wear. And, as the zero carbon operation approaches the near decade, we'll see changes in the reaction behaviour of pollutants driven by photochemistry.

There's no doubt that we'll need will need to pay much more attention to ozone concentrations and other photochemical reaction products in the later years of this decade.

English air quality objectives and current WHO pollutant thresholds

Pollutant	UK National Objectives	WHO Air Quality Guidelines
NO_2	Annual mean: 40 µgm³. Hourly mean: 200 µgm³ (not to be exceeded more than 18 times per year)	Annual mean: 10 µgm³. Hourly mean: 25 µgm³ (not to be exceeded more than 24 times per year)
PM10	Daily mean: 50 µgm³ (not to be exceeded more than 35 times per year). Annual Mean: 40 µgm³	Annual mean: 15 µgm³. Daily mean: 45 µgm³
PM2.5	Annual mean: 20 µgm³	Annual mean: 5 µgm³. Daily mean: 15 µgm³.

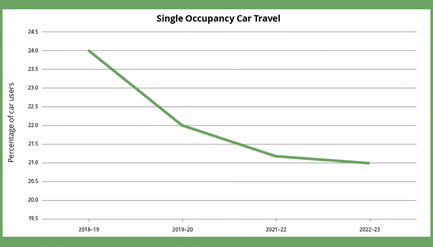
Sustainable travel

Year-on-year improvements in sustainable travel

Travel in our city region has faced several challenges and shocks over the last few years. But we're now starting to see a more settled travel landscape emerge – as we all adapt to new services and adopt new ways of working.

We're seeing new travel patterns emerge

Overall, our survey results continue show that roughly the same number of people are travelling by car now as back in 2019. But while students have broadly returned to the more familiar patterns of travel, staff (and our region's wider working population) have adopted a far more agile, flexible approach to travel.



We've seen reduced staff car travel at peak times (due to hybrid working practices) and a small increase in student car use (due mainly to current challenges on the regional bus network).

We're also seeing more people moving from public transport to walking and cycling, and an increase in local short distance trips during the day.

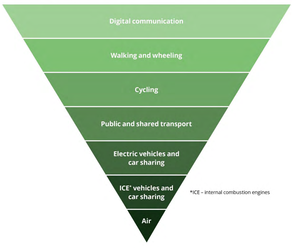
Challenges facing public transport continue

There's no doubt that public transport has suffered disproportionately, with route cancellations and recruitment difficulties. But, with local government, service operators and key stakeholders putting their combined effort into rebuilding the network, it's made strong progress. We're now seeing improved reliability and strong growth in year-on-year passenger numbers.

Recognising the challenges facing public transport

It's the question we all need to ask ourselves. Is travel essential? We continue to encourage more active and more sustainable travel choices to help reduce our collective environmental footprint, like walking and cycling.

Breaking it down: Our Sustainable Travel Hierarchy



Our commitment to our Strategy 2030 remains unwavering, and we continue to work towards the foundations set in the Travel Action Plan – balancing the need to travel alongside our net zero carbon ambitions.

Walk, cycle, scoot

We all know how good cycling and walking are for us – and the environment around us. So, we continue to help our students and staff adopt active travel modes, by providing support by continually investing in our campus facilities, providing bike loans, cycle maintenance and salary sacrifice schemes.

We're also working with local micro mobility providers to make sure that electric scooters are available to hire on all our sites – and we'll soon be adding electric bike and e-cargo bike to the mix too. And, very soon, we'll be launching a first-of-its-kind mobility hub at our Frenchay campus, linking together all various modes of travel available for all our users.

Bus and coach

There are no more options to travel by bus and coach. Additional bus services have been added to our network, including the new M4 metrobus route which link us directly to Parkway rail station for the first time.

There's also the new **WESTlink** service in in North Bristol. **WESTlink** runs without a fixed timetable or route and can be booked through its app or by phone. Additional national coach services also now operate from our Frenchay campus, providing links to many UK cities.

Future travel

We have a clear EV strategy in place. We now only replace UWE Bristol fleet with zero emission vehicles. (We'll only consider fossil fuel vehicles if there's no real alternative.) We're also investing in the latest EV charging technology – and now have car chargers available at our Frenchay, Glenside and Bower Ashton sites.

Education for sustainable development

With the publication of the Education for Sustainable Development (ESD) Guidance by Advance HE and the Quality Assurance Agency (QAA) in 2021–22, Education for Sustainable Development received significant – and well-deserved – national attention.

Here's a quick overview of 2022–23 key activities aligned to our 2022–23 ESD objectives:

- **This, our fourth accreditation to SOS-UK's criteria, was achieved by submitting evidence against all 50 of their criteria.**
- **We hosted a Responsible Futures Host Partnership event for stakeholders on how to prepare, participate and reflect on a Responsible Futures audit.**
- **We created or updated more than 20 programme maps in our teaching offer, relating academic programmes and disciplines to the UN Sustainable Development Goals (SDGs).**
- **We surveyed 419 students about their views and expectations, and used their feedback to inform our activity for 2023–24 academic year.**
- **We've ensured robust engagement with academics to strengthen our sustainability education offer during the restructure of faculties and departments.**
- **We devised a format for the ESD report that meets the expectations of Principles for Responsible Management Education (PRME) Global's Sharing Information on Practice (SIP) reports. The combined report was accepted by the PRME Global Office New York.**
- **We hosted the PRME Local Network event for South West and South Wales.**
- **We've ensured the next generation of academics' sustainability knowledge across our disciplines – by delivering ESD in both 2022–23 runs of our Postgraduate Certificate in Academic Professional Practice, reaching over 60 new staff.**
- **We provided formal support to several key sustainability-related organisations:**
  - **Bristol City Council**
  - **South Gloucestershire Council**
  - **West of England Combined Authority**
  - **Global Goals Centre**
  - **Bristol Green Capital Partnership**
  - **Bristol Natural History Consortium**
  - **UN PRME**
  - **SOS-UK**
  - **EAUC**
  - **Advance HE**

Global Goals Teach In

UWE Bristol staff enthusiastically supported the Global Goals Teach In again in March 2023.

Together, Dr Georgina Gough, Associate Professor in Education for Sustainable Development, and KESE reps Dr Verity Jones and Dr Jon Mulholland, ran a webinar series to promote pledges for action by academics. Other KESE reps also promoted engagement within their discipline areas.

As a result, UWE Bristol was in the top ten of UK institutions in terms of number of staff pledging to incorporate the SDGs into their teaching.

SDG curriculum mapping

In 2022–23, we reviewed individual programmes in maps in disciplines including Psychology, Social Work, Education, Accounting and Finance and Law. We also mapped modules across the Bristol Business work with a focus on Marketing, Events and Tourism and Human Resource Management.

This mapping ensures we address the Sustainable Development Goals while maintaining a balance between their economic, social and environmental dimensions. It addresses how these dimensions inter-link and allows us to reflect on the content, delivery and outcomes of UWE Bristol's educational provision.

In addition, our Sustainable Economies Research Group mapped their work against the SDGs to inform their planning. UWE Bristol academics in Accounting also produced a map linking the accountancy profession to the ambitions of the SDGs.

Responsible Futures

In 2022–23, Knowledge Exchange for Sustainability Education (KESE) were focused on preparing evidence for our Responsible Futures. This evidence represents the work of academic and professional staff from across UWE Bristol.

We submitted our evidence against all 50 criteria and, following a very thorough audit in May 2023, we achieved successful reaccreditation for two years and maximum points across 21 categories. A fantastic achievement – and our fourth accreditation against this standard.

We highly value the feedback which we receive from these audits, we use it to inform our forward planning for our ESD work.

Responsible Futures
accredited institution

Responsible Futures Host Partnership for 2022–23

In 2022–23, UWE Bristol and The Students' Union at UWE Bristol were one of two Host Partnerships for Responsible Futures UK in 2022–23 – and the first institution to hold this status twice.

As Host Partnership, we co-delivered two sector-wide webinars on Partnership working for ESD (December 2022) and Employability and ESD (April 2023). We explored the employment skills gaps and ESD competencies for employability, considering processes for development and assessment of competencies.

In July 2023, we ran a seminar for UK HEIs sharing our experiences of preparing for and going through a Responsible Futures audit. The webinar was well-received by new and established partnerships alike.

Research for sustainable development

Strategy 2030 sets the goal for UWE Bristol research to address the climate and nature emergency. The means by which this is to be achieved are set out in the Research and Enterprise Strategy and the Climate Action and Sustainability Strategy.

Our research is collaborative, agile and student facing, with local focus and global reach. It identifies UWE Bristol research as addressing intractable problems, enabling a pipeline of research engagement which is supported by focused Groups, Centres and Institutes.

Strategy 2030 lays out the expectation that UWE Bristol research will build on our considerable success and further strengthen our support for student enterprise and opportunities, business start-ups, innovation and enterprise, knowledge exchange and collaboration between university researchers, business and other partners.

Together these will further strengthen the actions locally, nationally and internationally that support the development of a sustainable and equitable future.

Research highlights

- Algae ball research recognised with international biological engineering award
- Somnus Scientific and the Health Tech Hub at the UWE Bristol win at the Medilink UK Healthcare Business Awards 2022
- UWE Bristol research to investigate climate impact on modern slavery risks in public sector supply chains
- Valuing biodiversity in urban areas and new developments
- Applying real estate management solutions to the marine environment
- Climate Action Hub: empowering youth engagement project report
- Researchers develop new method to detect date rape drug in drinks
- Plastic ingestion widespread in Welsh seabird, study suggests
- Co-creating new knowledge through children, teachers and other supporters of learning in relation to climate complexity

Research Entities, Bidding, Research Outputs and the SDGs

Here at UWE Bristol, we maintain an active, vibrant research ecosystem of groups, centres and institutes. **See the full list**.

We've summarised the impact of our research in a series of case studies, the majority of which address one or more the UN SDGs.

Taken together, you can see the wide range of current and recent work by UWE Bristol staff, clearly addressing environmental, sustainability and ecological challenges.

Changing Climate Network, Local, National and International Activities

To better share understanding, to build capacity and capability for net zero carbon initiatives, we maintain an active Changing Climate Network.

This continues to organise events, promote engagement with public consultations and promote networking and funding opportunities on and offline.

During 2022–23 these included a **Passivhaus Skills Workshop** alongside stakeholders in the Purdown View student accommodation build, an event on the new UK governing body 'The Office for Environmental Protection', a Partnership meeting with Bristol City Leap and collaborations with the Global Goals Centre to set up a 'meanwhile' tenancy for sustainable department Store **SPARKS Bristol** in the city centre.

Climate Hub

Many of these were brought together in the Climate Action Hub, a new space in **UWE's award-winning** School of Engineering. It was set up out of a desire to harness the existing passions and entrepreneurial mindset of UWE Bristol researchers and students for collaborations focused on addressing the climate and ecological emergency, and to empower communities to act on things that matter to them.

Bristol Climate & Nature Partnership

UWE Bristol is a founding member of the **Bristol Climate & Nature Partnership**, previously known as the Bristol Green Capital Partnership.

The Bristol Climate & Nature Partnership is a unique network united by one vision: a zero-carbon, nature-rich, socially just future for our city.

We contribute to its Climate Leaders programme and our researchers, through a University Advisory Group, engage locally with net zero carbon initiatives in the west of England. These include South Gloucestershire Council's Climate Emergency Action Plan and the independent Bristol Advisory Committee on Climate Change.

Analysis of SDGs addressed by research awarded funding in Sustainability and Climate Research Resilience theme during 2022–23

UWE Bristol Research Repository deposits tagged to the Sustainability and Climate Change Theme

Sustainability and Climate Change Bidding Activity

Sustainability and Climate Change Resilience Bidding Activity to Address the Sustainable Development Goals

Sustainable Development Goals Rankings – 2022 v 2023

Acknowledgements

Thank you

The UWE Bristol Sustainability Report 2022–23 was created in collaboration with thematic leads for each area, using their expertise and knowledge to inform the content.

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- Steph Constantine
- Chris Donnelly

Next steps

Pushing on together

We’ve achieved a great deal and are committed to doing more. To doing what is needed. Because together, we have the power to transform our world – for the better, for all, for good.

Join us as we push ahead on our **#OurPathTo2030**

Click on the icons below to discover more about our work on sustainability.

Carbon figures – Absolute emissions

	Baseline year 2018/19	2022/23	Target 2025/26	Target 2029/30
Scope 1	0.22	0.17	0.21	0
Scope 2	0.22	0.12	0.08	0
Scope 3	1.97	2.95	1.27	0.98
Total footprint	**2.41** *(2.19 market based)*	**3.24** *(3.09 market based)*	**1.56**	**0.98**

All figures location based. All figures in tCo2e per FTE student and staff

Carbon figures – Absolute emissions

	Baseline year 2018/19	2022/23	Target 2025/26	Target 2029/30
Scope 1	6,062	6,122	5,741	0
Scope 2	6,030	4,339 *(market based 26)*	2,195	0
Scope 3	53,648 *(53,539 market based)*	106,114 *(104,922 market based)*	34,496	26,288 *(50.4% reduction)*
Total footprint	**65,740** *(59,637 market based)*	**116,575** *(111,070 market based)*	**42,431**	**26,288**
Category 1: Purchased goods and services	24,707	35,919	15,887	12,255
Category 2: Capital goods	10,947	14,621	7,039	5,430
Category 3: Fuel and energy related activities	1,269	1,671	816	629
Category 5: Waste	No data	53	34	26
Category 6: Business travel	3,734	4,147	2,401	1,852
Category 7: Employee commuting and home working	3,696	3,332	2,377	1,833
Category 9a: Student daily commuting	8,942	16,652	2,141	1,652
Category 9b: Student termly travel (UK domestic)		1,483	191	147
Category 9c: Student termly travel (international)		26,577	3,418	2,636
Category 14: Downstream leased assets	353 *(244 market based)*	1,659 *(467 market based)*	227	175

All figures location based. All figures in tCo2e.

Engaging our staff and students

We've seen the number of students and staff engaging with our grounds and biodiversity through our Beeline champions and MYUWEGARDEN groups continued to rise, reaching up to 265 people in 2022/23.

We've also started working with creative writing students, encouraging them to put the writing skills to use by helping us to promote and market the Beeline. Here's a great example from Rhys:

When the stresses of university life become too much to bear, take a walk around the UWE Beeline, your Green Corridor through Frenchay Campus."

Rhys Williams

Our community garden sessions continue to thrive, with our Grounds team delivering 32 supported sessions across our Frenchay and Glenside campuses.

Tree planting

We've continued to expand our tree population in 2022/23, despite Ash Dieback Disease still being prevalent and present across UWE Bristol land. Our additional planting has resulted in an overall net gain of 23 trees.

Building with Nature

Building with Nature

To make sure that we continue to deliver quality green infrastructure that benefits people and the natural world, we've integrated the Building with Nature (BwN) standard into both UWE Bristol Grounds and Estates processes. In February 2023, Dr. Gemma Jerome, BwN director, delivered a bespoke training session to our Estates department and all grounds staff.

We were also represented on the BwN Good Green Infrastructure Stewardship Roundtable, where industry representative discussed how the standards could be used to improve place keeping of aspects of green infrastructure. Our new student accommodation project SAP5 has also been designed as a BwN scheme, with the intention of applying for the award.

Bee Bold: Space for Nature award winners

The buzz for bees is louder than ever at UWE Bristol. In June 2023, we were delighted to be as announced as one of six winners of this year's Bee Bold Awards.

Launched in 2022 by West of England Metro Mayor Dan Norris, the Bee Bold Awards recognise businesses, organisations and schools that are taking positive action to support bees and pollinators. It's a key part of our region's ambition to increase wildlife by 30% by 2030 to help tackle the ecological emergency.

Our Beeline project has created a range of different areas of pollinator-friendly spaces across our three campuses. The Bee Bold selection panel commended us for our utilising green spaces for pollinators while also taking the opportunity to engage with staff and students.

More Beeline assessment points across our campuses

We've seen an increase in the number of assessment points across all campuses in 2022/23. With new seating, edible planting, fruit trees/bushes and Meadowscape enhancements to our existing Beeline locations as well as some new high-profile additions.

We've created a Beeline demonstration area in the heart of our Frenchay campus too, plus a new habitat demonstration bed. We've also added new planters at Bower Ashton as the Beeline starts to connect across our other campuses.

Artificial habitats

Our freshly created habitat demonstration area, with its 10m-long Beebank, is full of dead hedge areas, rock piles, log piles for amphibian and reptiles. We've also created more leaf piles, log piles and other natural material habitats that can last throughout the season by adding bespoke habitat lawns to our Meadowscape cutting regime. Even more places and space for nature to thrive.

In the autumn of 2023, five new Wildpods landed at our Frenchay, Glenside and Bowers Ashton campuses. These are multi-habitat planters designed to attract wildlife into smaller spaces.

Plant propagation

We've continued our trend towards larger production numbers of Biennials and annual companion plants, to supplement the Beeline's edible herbs. Herb and Beeline plants have lower production rates, primarily due to lack of growing space. We're exploring new solutions and and we've applied for external funding through the West of England Bee Bold pollinator fund. This would allow us to build a new 20m polytunnel to increase growing space for the Beeline.

This year, our Grounds team has continued to successfully grow some amazing and unusual pollinator plants to enhance the planting across campus. One such example is the super pollinator *Echium pininana* – also wonderfully known as Giant Viper's Bugloss.

Grassland management

We continue to actively manage our grassland to enhance plant species diversity, improve connectivity and support animal habitats. We've recently developed opportunity maps for our Frenchay grasslands. These maps give direction for our Grounds team, clarifying and identifying the specific areas for meadow enhancement.

In November 2023, we had a Grand Garden Day Out – adding more than a thousand plants to meadows across all campuses in one great, green fingered day.

We now have a well-balanced and well-established combination of native and near native wildflowers. As well as their aesthetic value through the year, they provide extended feeding opportunities for pollinators. We're always improving our grasslands, and we have native bulb and wildflower additions to existing meadows planned for late summer/autumn 2023, plus further adjustments to our cutting regimes.

Sustainability and Climate Change Resilience Bidding Activity to Address the Sustainable Development Goals

Data from 2022–23

SDG	No. Submitted Bids
SDG01 – No Poverty	8
SDG02 – Zero Hunger	8
SDG03 – Good Health and Well-Being	46
SDG04 – Quality Education	17
SDG05 – Gender equality	7
SDG06 – Clean Water and Sanitation	11
SDG07 – Affordable and Clean Energy	15
SDG08 – Decent Work and Economic Growth	22
SDG09 – Industry. Innovation and Infrastructure	50
SDG10 – Reduced Inequalities	15
SDG11 – Sustainable Cities and Communities	60
SDG12 – Responsible Consumption and Production	20
SDG13 – Climate Action	66
SDG14 – Life Below Water	7
SDG15 – Life on Land	16
SDG16 – Peace, Justice and Strong Institutions	5
SDG17 – Partnerships for the Goals	11

Sustainable Development Goals Rankings – 2022 v 2023

2022	Goal	2023
101–200	1 NO POVERTY	36
201–300	2 ZERO HUNGER	201–300
401–600	3 GOOD HEALTH AND WELL-BEING	201–300
401–600	4 QUALITY EDUCATION	401–600
97	5 GENDER EQUALITY	55
99	6 CLEAN WATER AND SANITATION	93

2022	Goal	2023
201–300	7 AFFORDABLE AND CLEAN ENERGY	101–200
63	8 DECENT WORK AND ECONOMIC GROWTH	101–200
401–600	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	401–500
76	10 REDUCED INEQUALITIES	44
201–300	11 SUSTAINABLE CITIES AND COMMUNITIES	301–400
101–200	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	79

2022	Goal	2023
43	13 CLIMATE ACTION	57
101–200	14 LIFE BELOW WATER	101–200
101–200	15 LIFE ON LAND	101–200
101–200	16 PEACE, JUSTICE AND STRONG INSTITUTIONS	70
101–200	17 PARTNERSHIPS FOR THE GOALS	301–400
101–200	Overall rank	101–200
82.1–88.5	Overall score	82.2–88.2

Analysis of SDGs addressed by research awarded funding in Sustainability and Climate Research Resilience theme during 2022–23

SDG	Research
SDG01	Common Wealth Pension Policy Briefing; Temperature management of babies born before arrival at hospital in the South West: Driving the implementation of recommended changes to call handler advice.
SDG02	Common Wealth Pension Policy Briefing; Mealworm protein for animal feed: Automating and optimising production; Taro Agric Consulting – African Agri-Food KTP – 2nd submission.
SDG03	Science for Environment Policy renewal 2022–23; Somerset Wetlands Nature Recovery Project, Carbon Research Project; Common Wealth Pension Policy Briefing; Natural England Green Infrastructure Framework – 2023 Stakeholder Training Programme – tender; Partnership PhD Welsh Government – Coal tip reclamation in Wales, past experiences and sustainable futures; Developing qualitative approaches to tackle social class and class-based inequalities; Partnership PhD: Understanding the relationship between donkey welfare and ecosystem health; UK Air Quality Monitoring Network Redesign and Commissioning: Air Quality Technical Support for the Environment Agency; East Lothian Centre Line Removal Trialling; European Competence Centre for Science Communication – COALESCE; Evaluation of routes to introduction of a diagnostic for vector borne diseases of maize, Maize Streak Virus (MSV) and Maize Chlorotic Mottle Virus (MCMV) into Africa; Science Communication Going Global – India Partnership; Sustainability Bridging Grant; Student record for SWBio2 BBSRC Doctoral Training Partnership (DTP) – AS; Blood donations in research institutes; Early Career Researchers in Qualitative Health Research: Building resilience; Consultancy agreement for – Tackling the Root Causes of Unhealthy Planning, Economics and Decision-making; Threads of Emergence; An exploration of the experiences of outdoor events attendees with special dietary requirements; Evaluation of the Tilia bleeding canker microbiome; HE Careers Project Weston College.
SDG04	RAE Visiting Professor Scheme in Sustainability; Pig ID: developing a deep learning machine vision system to track pigs using individual biometrics; Dorset CC Apprenticeships; NPQ delivery for Teacher Development Trust cohort 2; Start School; SWW AHRC DTP2 – 2020–21 cohort; SWW AHRC DTP2 – 2021–22 Cohort; The Turing Scheme 2023–24.
SDG05	Making And Knowledge Exchange for Repair and Sustainability; Temperature management of babies born before arrival at hospital in the South West: Driving the implementation of recommended changes to call handler advice.
SDG06	Science for Environment Policy renewal 2022–23; Somerset Wetlands Nature Recovery Project, Carbon Research Project; Ecologies of Water-Care in the Himalaya – water security and climate adaptation in Changthang, Ladakh; Partnership PhD – Achieving the modal shift and transport decarbonisation targets of the Wales Transport Strategy and Net Zero Wales; Partnership PhD – Exploring the effects of visioning positive climate futures for young people in Wales; FS24 – DfT AI Vision and Roadmap; Partnership PhD – Exploring the adaptability of the Welsh air quality monitoring network to measure airborne microplastics; Bats and Tunnels: an experimental approach to identify effective Lighting strategies for tunnels occupied by bats.
SDG07	British Academy Net Zero Policy Discussion Paper; Common Wealth Pension Policy Briefing; RAE Visiting Professor Scheme in Sustainability; Albright Product Design Ltd and University of the West of England – KTP; Towards Solar Facades as Participatory Public Art.
SDG08	Albright Product Design Ltd and University of the West of England – KTP; Evaluation of Measures to Reduce HGV Drivers Shortage (Call Off From Framework 6980045); SME Leaders' Strategic Roadmap to overcome the Digital Gap in Labour Productivity; Immersive Experience Lab; Tender – Somerset Council Apprenticeship Framework DL.
SDG09	British Academy Net Zero Policy Discussion Paper; Making And Knowledge Exchange for Repair and Sustainability; Mealworm protein for animal feed: Automating and optimising production; Disrupting the UK inertial sensor supply chain to increase resilience and safety for self-driving vehicles – under embargo – 10065170; Albright Product Design Ltd and University of the West of England – KTP; Codification of the Highway code for Human and software in the Loop Driver education; Bonded structure fatigue project; Co-creation Of Future Flight Ecosystems and Enterprise; Dorset CC Apprenticeships; SME Leaders' Strategic Roadmap to overcome the Digital Gap in Labour Productivity; Simulated Urban Environment for Last Mile Drone Logistics – 10080134; East Lothian Centre Line Removal Trialling; To what extent, comparatively, might changes in international law constrain the use of the military instrument of power by Russia, China, and UK in the 2020s and 2030s?; Bio-inspired (Marimo) systems; An enhanced and extended CAVForth automated bus service (10041630) – under embargo; KTP Capacity Building Fund; Governance and Trustworthiness of Future Flight; Design of universal test specimen and attachments for characterization of mechanical behaviour; MykoBead: an innovative and low carbon loose-fill bead insulation made from waste bio-based feedstocks; Council of Europe report: Risks and opportunities of the Metaverse.
SDG10	Temperature management of babies born before arrival at hospital in the South West: Driving the implementation of recommended changes to call handler advice; Multi-purpose Soil Survey: Informing geohazard mitigation and biodiversity management (BVI).
SDG11	Year 4 Funding For South Gloucestershire Climate Emergency University Advisory Group; British Academy Net Zero Policy Discussion Paper; Natural England Green Infrastructure Framework – 2023 Stakeholder Training Programme – tender; Partnership PhD – Achieving the modal shift and transport decarbonisation targets of the Wales Transport Strategy and Net Zero Wales; Partnership PhD – Exploring the effects of visioning positive climate futures for young people in Wales; Partnership PhD Welsh Government – Coal tip reclamation in Wales, past experiences and sustainable futures; AR home heat visualisation for decarbonisation engagement: Mixed-media engagement devices to reimagine, capture and transform perceptions of domestic heating systems; Disrupting the UK inertial sensor supply chain to increase resilience and safety for self-driving vehicles – under embargo – 10065170; FS24 – DfT AI Vision and Roadmap; Partnership for Heritage: Safeguarding Traditional Architecture and Intangible heritage of Tataouine (Tunisia) and the Nafusa mountains (Libya); Developing qualitative approaches to tackle social class and class-based inequalities; Evaluation of Measures to Reduce HGV Drivers Shortage (Call Off From Framework 6980045); Walking as a Mode of Transport; Towards Solar Facades as Participatory Public Art; Simulated Urban Environment for Last Mile Drone Logistics – 10080134; Road Investment Scrutiny Panel; Documentation and damage assessment of the Al-Qahira Castle in Taiz, Yemen; Digitalization of the archival materials of the National Preserve "Kyiv-Pechersk Lavra"; CRAFTeD 2 – Stakeholder engagement to co-design pathways to UK freight decarbonisation.
SDG12	Year 4 Funding For South Gloucestershire Climate Emergency University Advisory Group; Science for Environment Policy renewal 2022–23; RAE Visiting Professor Scheme in Sustainability; AR home heat visualisation for decarbonisation engagement: Mixed-media engagement devices to reimagine, capture and transform perceptions of domestic heating systems; Co-creation Of Future Flight Ecosystems and Enterprise
SDG13	Year 4 Funding For South Gloucestershire Climate Emergency University Advisory Group; Science for Environment Policy renewal 2022–23; Somerset Wetlands Nature Recovery Project, Carbon Research Project; British Academy Net Zero Policy Discussion Paper; RAE Visiting Professor Scheme in Sustainability; Natural England Green Infrastructure Framework – 2023 Stakeholder Training Programme – tender; Ecologies of Water-Care in the Himalaya – water security and climate adaptation in Changthang, Ladakh; Partnership PhD – Achieving the modal shift and transport decarbonisation targets of the Wales Transport Strategy and Net Zero Wales; Partnership PhD – Exploring the effects of visioning positive climate futures for young people in Wales; Partnership PhD Welsh Government – Coal tip reclamation in Wales, past experiences and sustainable futures; Making And Knowledge Exchange for Repair & Sustainability; AR home heat visualisation for decarbonisation engagement: Mixed-media engagement devices to reimagine, capture and transform perceptions of domestic heating systems; Mealworm protein for animal feed: Automating and optimising production; Codification of the Highway code for Human and software in the Loop Driver education; Partnership for Heritage: Safeguarding Traditional Architecture and Intangible heritage of Tataouine (Tunisia) and the Nafusa mountains (Libya); Bonded structure fatigue project; Walking as a Mode of Transport; Partnership PhD – The use of eDNA to inform bat conservation in caves and beyond; Partnership PhD – The effects of management practices on Acute Oak Decline and the rhizosphere microbiome of parkland oak trees; UK Air Quality Monitoring Network Redesign and Commissioning: Air Quality Technical Support for the Environment Agency; To what extent, comparatively, might changes in international law constrain the use of the military instrument of power by Russia, China, and UK in the 2020s and 2030s?; Sustainable Flight in Minecraft – How might we design air travel for the future?; Evaluation of the Coastal Transition Accelerator Programme; 6th British Bat Research Symposium; The development of a global low cost microplastics monitoring network; Environment Agency science communication training; Spatiotemporal variation characteristics of compound dry and hot events and their impacts on vegetation growth across the mid-latitudes of Eurasia; Environment Agency Science Communication Training (Sept 2023); Consultancy – lesson plans for WECA Schools Summit; Foundational Theories for Nonlinear Diffusion Equations
SDG14	Science for Environment Policy renewal 2022–23; Somerset Wetlands Nature Recovery Project, Carbon Research Project; Natural England Green Infrastructure Framework – 2023 Stakeholder Training Programme – tender; Ecologies of Water-Care in the Himalaya – water security and climate adaptation in Changthang, Ladakh.
SDG15	Year 4 Funding For South Gloucestershire Climate Emergency University Advisory Group; Multi-purpose Soil Survey: Informing geohazard mitigation and biodiversity management (BVI); Pig ID: developing a deep learning machine vision system to track pigs using individual biometrics; Partnership PhD – The use of eDNA to inform bat conservation in caves and beyond; Partnership PhD: Understanding the relationship between donkey welfare and ecosystem health; Partnership PhD – The effects of management practices on Acute Oak Decline and the rhizosphere microbiome of parkland oak trees; Partnership PhD – The impacts of anthropogenic noise on bats – experimental studies to identify thresholds and inform industry guidance.
SDG16	Year 4 Funding For South Gloucestershire Climate Emergency University Advisory Group; Multi-purpose Soil Survey: Informing geohazard mitigation and biodiversity management (BVI).
SDG17	Year 4 Funding For South Gloucestershire Climate Emergency University Advisory Group; Disrupting the UK inertial sensor supply chain to increase resilience and safety for self-driving vehicles – under embargo – 10065170.

Sustainability and Climate Change Bidding Activity

Number by Research Entity 2022–23

Research Centre/Group	No. Submitted Bids
Centre for Research in Biosciences	26
Centre for Architecture and Built Environment Research	20
Centre for Transport and Society	17
Engineering Modelling and Simulation Research Group	16
Centre for Water	13
Communities and Resilience	13
Air Quality Management Resource Centre	12
Science Communication Unit	9
Centre for Sustainable Planning and Environments	9
Centre for Machine Vision	8
Innovation	7
Operations Management and Supply	7
Psychological Sciences Research Group	6
Centre for Fine Print Research	6
Digital Cultures Research Centre	5
Robotic Engineering and Computing for Healthcare – FET	5
Bristol Robotics Laboratory	5
Centre for Public Health and Wellbeing	3
Social Science Research Group	2
Bristol Leadership and Change Centre	2
Centre for Health and Clinical Research	2
Computer Science Research Centre	2
Big Data Enterprise and Artificial Intelligence Laboratory	2
Applied Marketing Research Group	2
Bristol Research in Economics	2
Education & Childhood Research Group (ECRG)	2
Institute of Bio-Sensing Technology	2
Bristol Bio-Energy Centre	2
Mathematics and Statistics Research Group	2
Unconventional Computing Group	1
Research in Public International Law (RIPIL)	1
The WHO Collaborating Centre for Healthy Urban Environment	1
Data Research Access and Governance Network (DRAGoN)	1
Global Crime	1
Creative Technologies Laboratory	1
Justice and Security Research Group	1

UWE Research Repository deposits tagged to the Sustainability and Climate Change Resilience Theme

Year	Deposits	No. of Authors
2023	131	115
2022	118	94
2021	118	117
2020	67	68
2019	41	49
2018	17	15