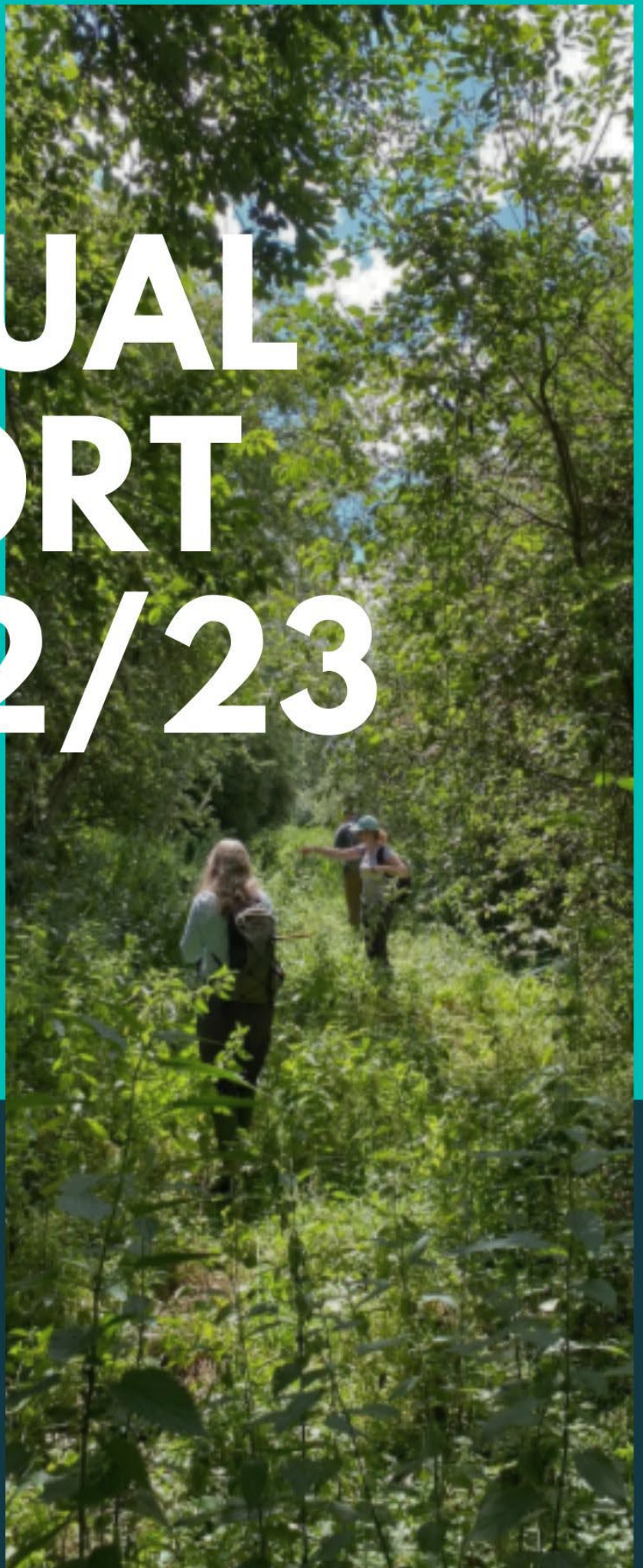


ANNUAL REPORT 2022/23

CAMBRIDGE
ZERO₂



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WELCOME

Last year marked a sobering milestone as the hottest so far on record, underscoring the stark reality of climate change. From devastating heatwaves to rampant wildfires and catastrophic floods, worldwide events vividly demonstrated the need for immediate action. They served as urgent reminders that climate change is not a distant threat but a current reality affecting us all.

Our work at Cambridge Zero gives us hope. Collectively we have the power to instigate significant change, yet achieving it demands unparalleled collaboration across various domains: research, education, decarbonisation, policymaking, industry and public engagement. This report shows how Cambridge Zero is helping to support the development and deployment of innovative solutions.

We know that research plays a vital role in accelerating the transition to a resilient, just, net-zero future. We commissioned a survey of University of Cambridge research which revealed more than 400 research projects dedicated to climate change, using more than £610mn of research income to push the boundaries on everything from batteries to bio-diversity and photovoltaics and policy advice to artificial intelligence. Read on to find out how Cambridge Zero supports researchers by accessing funding opportunities, creating opportunities for collaboration and education, and ensuring that climate research gets the attention that it deserves.

Our ambition at Cambridge Zero is to create a single-entry point for funders, policymakers, potential staff, collaborators, industry, students and the media to easily discover the wealth of activity happening at Cambridge and direct them to where they can best engage with us. We believe that by harnessing the power of collaboration and innovation, we can help build a more resilient and sustainable world.

Professor Emily Shuckburgh, Director of Cambridge Zero (Darwin)

CAMBRIDGE ZERO MISSION

A bold response to the climate crisis.

Cambridge Zero was founded in 2019 to maximise the University of Cambridge's contribution towards achieving a resilient and sustainable zero-carbon world.

Cambridge Zero is harnessing the full range and breadth of the Collegiate University's capabilities, both in the UK and globally, to develop solutions that work for our lives, our society and our economy.

We do this by acting as both a hub and an umbrella, integrating and enhancing the University's activities, in particular through:

- research and innovation to drive technological and social change,
- education and training to provide the skills needed to deliver a just and sustainable future,
- engaging with a broad coalition of stakeholders to develop solutions collectively, and
- leading by example by supporting institutional sustainability

OUR IMPACT 2022-2023

RESEARCH

- 300 people registered for our Cambridge Zero Research Symposia.
- 100 academics from more than 35 different departments attended Cambridge Zero Science Discovery workshops.
- Cambridge Zero supported funding proposals across all 6 schools of the University.
- Since July 2023 Cambridge Zero has supported and is supporting responses to funding calls worth a cumulative total of over £145million (£80m submitted, £65m in development, by end of September 2023).
- During that period 21% (£17.1m) of supported submitted proposals were successful (securing over £5m directly for Cambridge).
 - £4.6m for a Green Transition Ecosystems project to create a Public Map Platform (see Research section for details)
 - £12.5m for a Research Hub for Decarbonised Adaptable and Resilient Transport Infrastructures (DARe) (see Research section for details)

EDUCATION

- 1,100 students engaged across our mailing lists
- 212 attendances at 8 Climate Challenge events with 41 students across 17 teams
- 234 attendees across 7 events organised by Postgraduate (PG) Academy
- £4500 allocated to 12 different student-led projects and events through Student Societies Climate Fund (SSCF)
- 43 students trained through Engage for Change
- 75 attendances across 11 Green Officer Network events, including Cambridge University Endowment Fund (CUEF) Q&A
- First in-person Green Careers Fair attended by 299 students and 23 employers
- 102 attendances across 4 Cambridge Zero-organised Green Careers Festival (GCF) panel events
- 220 applications for 9 places in the Future Leaders Programme 2023.

DECARBONISATION AND SUSTAINABILITY

Cambridge Zero was recognised by the University's Environmental Sustainability Team for its student and staff engagement projects.

- 43 Green Impact awards presented by the Environmental Sustainability Team
- Over 693,000 trips made on the Universal bus network.
- Work with Cambridge University Endowment Fund and Cambridge Institute for Sustainability Leadership to decarbonise our investments and educate other institutional asset managers on sustainable finance

POLICY ENGAGEMENT

- Nine lunchtime discussion seminars featuring guest policy stakeholders
- Nearly 1,000 views on YouTube and more than 120 mentions online of ActNow Film produced for COP27

INDUSTRY, INNOVATION AND BUSINESS ENGAGEMENT

- We doubled members of the Decarbonisation Network to 400
- 116 companies represented at events sponsored or co-badged with Cambridge Zero
- More than 2,500 companies were connected to Cambridge Zero via the Maxwell-CZ ecosystem
- The first UK Chapter of the World Materials Forum attracted CEOs and CTOs from 22 companies. The Forum was launched in partnership with the Maxwell Centre and Royce Cambridge
- The Climate Governance Initiative at the Centre for Climate Engagement connected more than 100,000 companies to Cambridge Zero

COMMUNICATIONS AND PUBLIC ENGAGEMENT

- The University of Cambridge/Cambridge Zero and climate change received more than 20,000 mentions online and in print media
- Cambridge Zero had more than 500,000 total impressions on social media
- Cambridge Zero Director Professor Emily Shuckburgh's attendance at Climate Week NYC attracted more than 55,000 views from highly influential attendees in person and online
- One research communications highlight was an article by Cambridge Zero Fellow Dr Ramit Debnath on how "Killer Heatwaves endanger India's Development," which appeared in nearly 1,000 news stories and led to an invitation to present at the G20
- Cambridge Zero Climate Change Festival had 55 events and 1,000 views

OUR PROGRAMMES

Our work is focussed on supporting research and education across the collegiate University and is organised across the following programmes:

RESEARCH

ACCELERATING PIONEERING RESEARCH AND INNOVATION TO DRIVE TECHNOLOGICAL AND SOCIAL CHANGE

Cambridge Zero’s Research Programme collaborates across various academic entities including Schools, Departments, research centres, central administrative offices for research and the University fundraising office. Our aim is to scale up activities and facilitate interdisciplinary cooperation to accelerate climate-related research. We screen opportunities for multidisciplinary climate-related research funding proposals and communicate them to the wider Cambridge community. We help establish and coordinate collaborations through various means, including emails, in-person events, online town-halls, and bespoke support for funding proposals.

Additionally, we assist the Cambridge community in establishing and nurturing relationships with public funding bodies and philanthropy. Our role extends to engaging with stakeholders such as government, policy makers, NGOs, and industry to garner support and benefits for climate-based research activities at the University and among our partners.

If you have an idea for a climate-related research proposal at the University of Cambridge but need others to help, Cambridge Zero can introduce you to other like-minded Cambridge researchers, helping you to build a team around common research interests. We can also provide coordination and facilitation enabling you to work collaboratively, identify funding opportunities and create interdisciplinary grant applications. If you are an Early Career Researcher thinking about your next project, we can help to introduce you to potential PIs or to join relevant research networks already in place. Please get in touch with a member of our Team to discuss your research. Please register for our Cambridge Zero Research mailing list [here](#).

OUR TEAM

Name:	Dr Shaun Fitzgerald (Girton)
Title:	Director of Research, Cambridge Zero, and Director of the Centre for Climate Repair
Description:	Shaun is a Fellow of the Royal Academy of Engineering and works at the interface of academic research, business, government policy and public engagement.

Name:	Dr Erik Mackie
Title:	Head of Research Engagement
Description:	Erik works with researchers from across Cambridge and beyond to coordinate and deliver interdisciplinary research activities, events and funding proposals related to climate change and net-zero.

Name:	Dr Nik Petek-Sargeant (Homerton)
Title:	Research Engagement Manager
Description:	Nik works with researchers from across Cambridge and beyond to coordinate and deliver interdisciplinary research activities, events, and funding proposals related to climate change and net-zero.

RESEARCH FUNDING

We support researchers from across all six schools of the University to develop research proposals for climate-related funding calls.

In 2022-2023 we supported funding applications-for projects across 18 different departments.

These case studies show examples of proposals that we have developed and supported, which went on to receive significant funding.

Research Hub for Decarbonised Adaptable and Resilient Transport Infrastructures (DARe)

Leads: Dr Jennifer Schooling at the Department of Engineering, University of Cambridge with support of Cambridge Zero, and the Universities of Newcastle (Hub lead), Glasgow and Heriot-Watt.

Funding Awarded: £12.5m (of which £3.4m awarded to Cambridge)

In September 2023, partners across Cambridge collaborated with colleagues from Newcastle, Glasgow and Heriot-Watt universities to launch a new national research hub to aid in the decarbonisation of the UK's complex and interconnected transport infrastructures. By providing expertise, modelling, and data tailored to each area and each transport challenge, it will identify solutions for delivering a resilient, net zero transport system that aligns with the needs of people and communities. The research hub will also serve as a national facility where researchers launch an open-source platform, opening data to policymakers, local authorities, and the frontline of transport systems. Funding of £10 million was awarded by the Department for Transport National Highways, HS2 Ltd, Network Rail and UK Research and Innovation (UKRI).

"The UK is cementing its position as a world-leader in net-zero tech with this new investment into climate resilience. This Hub will be a centre of academic excellence, helping us keep our transport network resilient into the future"

UK Transport Secretary, Mark Harper

Public Map Platform

Leads: Professor Flora Samuel, Department of Architecture working in partnership with Cardiff and Wrexham Universities with the support of Cambridge Zero.

Funding Awarded: £12.5m (of which £3.4m awarded to Cambridge)

The project will involve investigating and measuring the social, environmental, and cultural benefits of the green transition in Anglesey, Wales to create an [online Public Map Platform](#). This will offer a range of well-designed and accessible information to communities, local authorities and policymakers alike, as well as opportunities for local communities to contribute to the maps. The data will be presented on an accessible website tailored to a range of audiences, and scalable for use across the UK. It will provide a way for future generations to chart the green transition in Anglesey and will help other local authorities around the UK to plan for their own green transitions. The project is one of four Green Transition Ecosystem projects in the UK funded by the Arts and Humanities Research Council.

"Climate change cannot be addressed without revealing and tackling the inequalities within society and where they are happening. Only when we know what is happening where, and how people are adapting to climate change can we make well-informed decisions"

Professor Flora Samuel (Dept of Architecture Head, Darwin College)

RESEARCH EVENTS

We organise internal and external-facing **Research Events** to help connect and develop research communities around particular issues.

Our events in 2022-2023 included Research Symposia and collaborative Discovery Science Workshops, which covered broad themes such as climate and disease; energy materials for net-zero; carbon capture and climate repair, behavioural change and education, and circular economy and waste.

Research Symposia

In autumn 2022, Cambridge Zero collaborated with [Hughes Hall Centre for Climate Engagement](#) to run four Research Symposia.

Their aim was to showcase the ground-breaking research related to sustainability, climate change and net-zero taking place across Cambridge, to connect researchers from across different communities and disciplines, and encourage new collaborations. These events received a total of 296 registrations.

Economic & Societal Change: Achieving sustainable development using natural capital, social capital and sustainable finance (October 2022)

Speakers:

- Dr David Reiner, Professor of Technology Policy at Cambridge Judge Business School - "Climate Action: Lessons from History".
- Dr Anil Madhavapeddy (Pembroke), Director of the Cambridge Centre for Carbon Credits and Professor of Planetary Computing at the Department of Computer Science - "Financing Forests: A Credible Approach to Halting Tropical Deforestation"
- Dimitri Zenghelis, Senior Associate at Bennett Institute for Public Policy and Project Leader at The Wealth Economy: Natural and Social Capital, shed light on - "The Wealth Economy: Measuring Social and Natural Capital".
- Dr Claire Barlow (Newnham), Senior Lecturer in Engineering - "Plastic Food Packaging: Balancing the Evils".
- Dr Markus Hellenbrand, Postdoctoral Research Associate at the Department of Materials Science and Metallurgy - "Computers and the Internet: Climate Hazard or Opportunity?"
- Dr Tong Xu, Fellow at the Centre for Environment, Energy and Natural Resource Governance (C-EENRG) and Assistant Professor at the Institute of Urban Environment, Chinese Academy of Sciences (CAS) - "Governmental Energy Innovation Funding and Institutions"..
- Dr Ronita Bardhan (Selwyn), Associate Professor of Sustainable Built Environment - "What Is So Hard About the Hard-to-Decarbonise Sector? - The Case of Residential Buildings."
- Emma Houiellebecq (St John's, PhD Engineering) - "Impacts of Climate Change in Fragile Contexts."
- Soniya Gupta-Rawal (CJBS, PhD Quantitative Marketing) - "Upskill to Upscale: Capital-Centric Opportunities for Skill Training of Micro-Entrepreneurs in Emerging Markets".

Carbon Capture & Climate Repair: What, where, when, how, by whom and for whom? (November 2022, in collaboration with the [Centre for Climate Repair at Cambridge](#)).

Speakers:

- Dr Shaun Fitzgerald (Girton), Director of the Centre for Climate Repair and Director of Research at Cambridge Zero - "Why Do We Need More Than Emissions Reduction? And What Are the Options?"
- Dr Alexander Forse, University Assistant Professor Yusuf Hamied Department of Chemistry - "Capture Carbon Dioxide with Batteries and Supercapacitors."
- Professor Alison Smith (Corpus Christi), Lady Hopper FRSB, Department of Plant Sciences - "The potential of microalgae for sustainable solutions".
- Dr Lucrezia Nava Lecturer (Assistant Professor) in Corporate Social Responsibility at Bayes Business School - "The Way to Net-Zero and Beyond".
- Dr Kevin Martin, Centre Manager of the Digital Education Futures Initiative (DEFI) - Building carbon sequestration solutions through education in the rural Global South.
- Dr Lucy Tweed, Research Associate in Geological Carbon Storage - Thermal effects of CO2 injection into depleted reservoirs.
- Dr Charlotte Wheeler, Research Associate in the Cambridge Centre for Carbon Credits - "The Right Trees in the Right Place".
- Dr Olga Tutubalina, Royal Society Wolfson Visiting Fellow at the Scott Polar Research Institute and Sophie Weeks, President, Scott Polar Educators International) - "Innovative Approaches to Sustainable Land Use in Øvre Dividal National Park, Norway."
- Ariel de Fauconberg PhD Management Studies (Jesus), Gates Cambridge Scholar, Bracken Bower Prize-winner - "The Real Deal" an exploration of team formation processes in early-stage climate technology ventures.

Behavioural Change & Education: Tackling misinformation and promoting institutional and individual action (November 2022)

Speakers (who were followed by a series of two-minute "lightning talks" by Early Career Researchers on their work):

- Dr Lee De Wit (Trinity), Associate Professor in the Department of Psychology - "Large Scale Behaviour Change in Politically Polarized Times."
- Dr Atiyeh Yeganloo (Queens'), Research Associate at the El-Erian Institute of Behavioural Economics and Policy at Cambridge Judge Business School - "Probability Biases in Repeated Prisoner's Dilemma Game."
- Dr Malte Dewies (Queens'), Research Associate at the El-Erian Institute of Behavioural Economics and Policy at Cambridge Judge Business School - "Nudging to Reduce Illegal Garbage Disposal."
- Dr Cristina Peñasco (Queens'), Assistant Professor in Public Policy - "How to Replicate the World's Greatest Successes in the Transition to Decarbonised Economies."
- Sander Van Der Linden (Churchill), Professor of Social Psychology - "Psychological Inoculation Against Misinformation About Climate Change."
- Sam Stephenson (St Catharine's, PhD Engineering) - "Discursive Barriers: Understanding How the Language of Climate Change Inhibits Mitigation Policy."
- Simone Schnall (Jesus), Professor of Experimental Social Psychology - "The Challenges of Inspiring Prosocial Behaviour Change."
- Hugh Thomas (Magdalene, PhD Engineering) - "What Is the Realistic Mitigation Impact of Changing Passenger Travel Behaviour?"
- Jennifer Hawkin (Darwin), a Research Student in the Department of Engineering - "Are Net-Zero Proposals Feasible with Limited Zero Emissions Resources?"
- Professor Dame Theresa Marteau (Christ's), Director of the Behaviour and Health Research Unit in the School of Clinical Medicine - "Changing Behaviour Globally at Scale: The Challenge of a Great Food Transformation."

Speakers:

- Dr Olivier Restif (Robinson), Alborada Associate Professor in Epidemiology from the Department of Veterinary Medicine - "Environmental drivers of Hendra virus spill over from Australian bats."
- Dr Catherine Merrick (Trinity Hall), University Associate Professor in the Division of Microbiology and Parasitology - "Human malaria and its prospects in a climate-changed world."
- Dr Nerea Irigoyen, Research Group Leader in Virology from the Department of Pathology - "Flavivirus (re)-emergence: are we facing a new pandemic?"
- Dr Angelique Mavrodaris (Darwin), a Clinical Research Fellow at Cambridge Public Health - "Climate and Ageing Populations."
- Monique Merchant (Clare Hall), a Research Associate in the Department of Pathology - "Tools to monitor and combat the spread of insect-borne viruses in the wake of climate change."
- Elizabeth Isaac (St Edmund's, PhD Geography) - "Pestilence, Famine and Climate: Understanding the spatial dynamics of bubonic plague across Eurasia and the Mediterranean littoral between 1850 and 1960."
- Maria Ikononova (Christ's, PhD Engineering) - "Management of Physical Infrastructure Systems to Protect Public Health from Climate-Related Hazards."

Lightning talks were given by:

- Mariana Perez Duque (Gonville and Caius, Department of Genetics),
- Olesya Kolmakova (Department of Plant Sciences)
- Dan Cossey (Trinity, Department of Zoology)

Discovery Science Workshops

We hosted a series of three interdisciplinary workshops titled **Cambridge Zero Discovery Science Workshops** focused on three themes:

1. **Energy Materials for Net Zero,**
2. **Environmental, Social and Ethical Dimensions of Materials for Net Zero**
3. **Circular Economy and Waste**

These workshops brought together more than 100 academics from over 35 different departments at Cambridge to discuss their work and opportunities for future research collaborations. They were sponsored by the Natural Environment Research Council (NERC)

Energy Materials for Net-Zero

Speakers highlighted the importance of developing new materials with better functionality in energy consumption, conversion, and storage, which is crucial to achieving net zero targets.

Dr Bartomeu Monserrat (Robinson) from the Department of Materials Science and Metallurgy, showcased successful materials, modelling collaborations with experimental groups, spanning superconductivity, light-emitting materials, and X-ray detectors.

Dr Jenny Zhang (Corpus Christi, Chemistry) presented her recent paper on a new electron transfer pathway in photosynthesis published in Nature magazine, expressing interest in future large-scale collaborations.

Dr Ioan-Bogdan Magdau (Engineering) discussed the application of machine learning to model electrodes, extending beyond conventional computational modelling.

The battery-focused keynote session featured Dr Kara Fong's (Churchill) theory model for calculating non-measurable properties in Lithium-ion battery electrolytes, and Dr Zhuangnan Li emphasized the importance of developing Lithium-Sulphur batteries for higher energy density, lower cost, and greater environmental friendliness.

Additionally, Dr Aurelia Li (Darwin) represented Immaterial Cantab, a Cambridge spin-out company focusing on metal-organic frameworks for carbon capture and hydrogen storage, showcasing their reliable synthesis and simulation processes with plans for full automation using robots.

Environmental, Social and Ethical Dimensions of Materials for Net-Zero

This workshop focused on the demand for net-zero materials to impact ESG.

Professor Jennifer Gabrys from the Department of Sociology argued that achieving net-zero requires a rethinking of our social-material worlds, rather than simply replacing one fuel source with another. She highlighted the centrality of digital technologies and the implications of materials demand for land-use, biodiversity, and water for communities in "sacrifice zones."

Dr Karishma Jain, Deputy Director of the EPSRC Centre for Doctoral Training in Nanoscience and Nanotechnology, discussed the limitations of a focus on efficiency-based technologies. She emphasized that more imaginative approaches for scientific and technological development are needed to ensure long-term benefit for the planet and humanity.

Professor Jeremy Green (Jesus), from the Department of Politics and International Studies, spoke about the transition to net zero in an increasingly fractured geopolitical landscape, where clean energy technologies and associated materials constitute the heart of a "competitive re-industrialization" with major impacts for the Global South.

Circular Economy and Waste

Attendees discussed how the use of earthworms, algae farming, tracking waste via GPS and making water-resistant cellulose packaging might improve the circular economy and the management of waste.

This was a popular topic, and the event was attended by 40 researchers from across 22 departments.

Professor Charlotte Lemanski (Newnham), Department of Geography, spoke about waste management in South African townships, highlighting the need for innovative solutions in low-income areas where waste management is often inadequate.

Dr Samsurin Welch (Queens'), Associate at the Circular Economy Centre, Judge Business School, discussed business models and the role of digitization in monetising the circular economy, emphasising the importance of technology in driving change.

Professor Jaideep Prabhu (Clare), also from the Judge Business School, explored the topic of frugal innovation and presented examples of products that had been successfully brought to market at a fraction of the cost of their mainstream commercial equivalents.

RESEARCH FELLOWS

Cambridge Zero supports Postdoctoral Research Fellowships in areas related to climate-change across the University, and in 2022 we awarded an inaugural Cambridge Zero Postdoctoral Fellowship to Dr Ramit Debnath for his work to improve public understanding of climate change. Dr Debnath is also a Sustainability Fellow at Churchill College, a research associate with the Energy Policy Research Group (Judge Business School), Centre for Natural Materials Innovation (Architecture), Centre for Climate Repair (Engineering), and the Bennett Institute of Public Policy (POLIS), as well as a visiting faculty associate in computational social science at Caltech. Since his appointment, Dr Debnath has published many papers about climate change and the transition to net-zero. The following case study is an example of how his work engages the media, the public and policymakers in climate-related research.

Using a heat index to measure climate change in India

Lead: Dr Ramit Debnath, Cambridge Zero Fellow

In April 2023, Dr Debnath and co-author Dr Ronita Bardhan (Selwyn) Deputy Head of the Department of Architecture published new research in the [PLOS Climate journal](#) on climate change in India. The study was the first to use a “heat index” to measure the recurring impacts of Indian heatwaves on the country’s population. The index measures how hot the human body feels relative to the surrounding conditions when humidity and air temperature are added together. The research showed that deadly heatwaves fuelled by climate change in 2022 made almost 90 percent of Indians more vulnerable to public health issues, food shortages and increased risks of death. These outcomes suggested that recurring heatwaves were a threat to India’s developmental goals, the authors wrote.

Impact: The research was covered by more than 110 News outlets, including CNN, Bloomberg, Telegraph, Times of India, WIRED and TIME Magazines. The paper was cited 6 times in new publications. Social media posts by Cambridge Zero received nearly 19,000 impressions. Dr Debnath and his co-author Dr Bardhan were invited by G20 to present their findings.

“The heat index helped us figure out what needs to be done to improve how India measures its vulnerability to climate change”

Dr Ramit Debnath, Cambridge Zero Fellow

RESEARCH CENTRES

Cambridge Zero continued to support numerous innovative research centres at the University of Cambridge. The four centres listed below were launched with our help. We are proud to support their development, and to continue working with them collaboratively on a range of projects.

Centre for Landscape Regeneration

The [Centre for Landscape Regeneration \(CLR\)](#) launched in 2022 following a £10 million investment from [UKRI NERC](#). The Centre is delivering a five-year programme to restore some of the UK's most valued landscapes. The Centre is led by the University of Cambridge in partnership with [NIAB](#), [RSPB](#), the [Centre for Ecology and Hydrology](#) and the [Endangered Landscapes and Seascapes Programme](#).

This is an ambitious programme of research that aims to provide the knowledge and tools needed to regenerate the British countryside using cost-effective nature-based solutions that harness the power of ecosystems to provide broad benefits including biodiversity recovery and climate mitigation and adaptation. The network of stakeholders – including farmers, practitioners, communities, policy and industry – is key.

The CLR is co-led by Professor Emily Shuckburgh (Darwin, Trinity) from Cambridge Zero and Professor David Coomes (Fitzwilliam, Gonville & Caius) from the [Conservation Research Institute](#), it involves a team of over 60.

An extensive programme of fieldwork and data collection in the Cambridgeshire Fens was completed in 2023. Field sites such as farms and nature reserves were selected across the region and surveys included insects, plants, greenhouse gas emissions, microbes and soil composition as well as trialling new, low-cost technologies to monitor CO2 emissions.

The next phase of the project also adds a focus on the Scottish Cairngorms and the Lake District. We are working closely with [Cairngorms Connect](#) and [Cumbria Connect](#) to enable collaborations across the local scientific and stakeholder communities.

Cambridge Centre for Carbon Credits

The [Cambridge Centre for Carbon Credits \(4C\)](#) is in its second year, researching approaches to tropical forest conservation by developing scalable systems to generate highly credible carbon credits that are globally comparable. 4C maintains around 20 research posts, ranging from students to faculty to post-doctoral researchers, and has published papers this year on nature-based additionality, permanence, livelihood impacts and biodiversity. There have also been research advances in computer science towards building planetary scale computing platforms to handle the vast amount of data involved in the analysis required.

4C has also engaged with a range of policymakers to communicate the results of the research and will host a major workshop on permanence in 2024 with the Integrity Council for Voluntary Carbon Markets (IC-VCM) with participants from organisations worldwide. Efforts also continue to launch a central University carbon offsetting scheme for unavoidable air travel, using the 4C systems that trace credits from issue through to retirement.

Centre for Climate Repair (CCR)

Centre for Climate Repair is a mission-driven organisation advancing research on high impact climate repair projects that can be rolled out at scale within the next 5-10 years. Its vision is a pathway to a sustainable future for mankind in tackling the root causes of climate change and ensuring we limit the amount of overshoot.

In April 2023, CCR officially became part of the Department of Applied Mathematics and Theoretical Physics, making it part of the numerous research groups within the University.

CCR's mission is threefold: reduce CO₂ emissions, remove excess CO₂ from the atmosphere, and re-freeze the Arctic, with a focus largely on the removal aspects of CO₂ and re-freezing the Arctic. The work on reducing CO₂ largely supports the NERC-funded Centre for Regeneration.

On removal, CCR has four different projects at different stages of development:

1. Marine Biomass Regeneration (MBR)
2. The role of giant kelp in the surface waters of the deep ocean
3. Accelerated oxidation of methane
4. Horizon-Europe funded project with 14 other institutions called "Strategies for the Evaluation and Assessment of Ocean based Carbon Dioxide Removal (SEAO₂-CDR)".

And on the re-freeze the Arctic, five different areas are being looked at:

1. Marine Cloud Brightening (MCB)
2. Stratospheric Aerosol Injection (SAI)
3. Ice thickening
4. Sea curtains
5. Governance and Society.

These are also at different stages but have created valuable partnerships. In particular, the MCB research which is led by Professor Hugh Hunt in the Department of Engineering is developing in collaboration with TU Delft under the leadership of Herman Russchenberg (modelling and cloud physics).

And on the Ice Thickening project, which is led by Dr Shaun Fitzgerald in the Department of Engineering and supported by Professor Grae Worster (Trinity) in the Department of Applied Mathematics and Theoretical Physics, CCR has created an invaluable collaboration with Real Ice.

The Institute of Computing for Climate Science (ICCS)

The Institute of Computing for Climate Science (ICCS) was founded in 2022, as a collaboration between Cambridge Zero, the Departments of [Applied Mathematics and Theoretical Physics](#) (host department of the Institute), [Computer Science and Technology](#), and [University Information Services](#) at the University of Cambridge. Its mission is to study and support the role of software engineering, computer science, artificial intelligence, and data science within climate science.

Since its launch, the ICCS has launched a series of monthly Journal Club Talks. The ICCS hosts a monthly journal club on the second Tuesday of each month with members of the Virtual Earth Systems Research Institute (VESRI¹). Members VESRI and ICCS present research papers or concepts that have been significant to their research and are of interest to the other teams. This is an opportunity for researchers to see the cross-cutting work that is being done across the VESRIs and draw connections with their own work. Recordings of the journal club are taken and posted online on our [YouTube page](#). Recent videos have been embedded below, with the most recent recording first.

ICCS hosted the [12th International Conference on Climate Informatics](#) in April 2023. This conference series aims to bring together researchers and users across different disciplines and sectors to forge international collaboration between climate science, data science, and computer science, share state-of-art developments in climate data and informatics, and accelerate the rate of discovery in climate science and adaptation of climate applications. In July 2023, the ICCS held its second annual summer school. Attendees were invited to attend a variety of technical training sessions, workshops as well as present their own research to others. Talks ranged from reducing uncertainty in climate models to using machine learning to emulate sea ice processes. ICCS research software engineers taught participants how to use GitHub effectively for collaborative development, followed by an introduction to GPU programming, how to use Pytorch for machine learning as well as demonstrating how the Hugging Face platform is useful for working with large, non-textual datasets.

Key accomplishments over the past year include the publication of 28 research papers and providing comprehensive training to empower climate researchers with technical expertise and opportunities to create networks.

¹ VESRI provides sustained, multi-year funding and embedded technical expertise towards transformational climate modelling research by jointly exploiting advances in models of the Earth systems, Earth observations, computational tools, and bringing tools and approaches from outside the climate sciences to bear within it. VESRI aims to improve climate modelling, change the direction of multiple models globally, and to ultimately accelerate the pace of earth systems and climate research.

INTERDISCIPLINARY RESEARCH CENTRES (IRCS)

Cambridge Zero works closely with many different IRCs to support and promote their work and to try to secure funding for events and projects. One of these is the Energy IRC.

ENERGY IRC

The Team

Name:	Dr Suman-Lata Sahonta
Title:	Research Manager, Energy IRC
Description:	Supports Cambridge Zero by coordinating multidisciplinary research funding in the zero-carbon energy space and facilitating knowledge exchange between academic and industrial research.

Name:	Dr Shafiq Ahmed
Title:	Co-ordinator, Energy IRC
Description:	Helping researchers connect across disciplines on projects such as energy policy, energy efficiency and sustainable energy.

Name:	Raheela Rehman
Title:	Project Officer, Energy IRC
Description:	Leading communications campaigns to raise the profile of the University's energy transition research.

The Energy IRC supports over 200 academics working across five of the University's six schools on research in the energy space. The IRC's mission is to secure energy research funding through government, industry and philanthropic means, and to raise the profile of Cambridge-led research towards a global transition to a sustainable and renewable energy landscape.

The Energy IRC engages with the University's academic body by coordinating cross-School research funding proposals, hosting seminars from UK and international speakers, partnership development with energy sector companies and the UK's energy regulatory framework and running academic-industry workshops to support the University's broad range of energy research networks. The IRC's membership is split into 10 of these interdisciplinary research networks including energy materials, the built environment, and energy policy, amongst others.

The Energy IRC provides a core research support function for Cambridge Zero through the above activities, as well as enabling Cambridge Zero to co-develop activities with linked internal organisations (such as the University's Decarbonisation Network, other IRCs, the University's Strategic Partnerships Office, Cambridge Enterprise, and School Councils) to ensure a cohesive and strategic approach to energy research support.

In the past year, the IRC has worked with CZ and SPO to support the founding of a new Decarbonisation Network Special Interest Group (SIG) on Energy Materials, Devices and Manufacturing with engagement from around 30 energy sector companies. New advisory partnerships with SSE, Arm, NSG Pilkington, UK Power Networks and Cambridge Cleantech have been made to facilitate academic-industrial research collaborations and to promote knowledge exchange that can inform the University's energy research strategy and track energy research impact. The Energy IRC is grateful to the [Winton Programme](#) and the [Higher Education Innovation Fund \(HEIF\)](#) for their continued support.

EDUCATION

INSPIRING LEADERSHIP, EDUCATION AND TRAINING TO PROVIDE THE KNOWLEDGE AND SKILLS NEEDED TO DELIVER A DIFFERENT FUTURE

Inspiring leadership, systems thinking, and action-based learning are at the heart of our education work.

Cambridge Zero aims to use cutting-edge knowledge to enhance life-long education in a holistic way to provide the knowledge and skills people need to deliver a different future and to live well in a changing world.

This year we have substantially built on our work in education, utilising the full breadth of the University to build impactful collaborations with Cambridge University Press & Assessment and Cambridge Partnership for Education; working with Departments to integrate climate and sustainability into taught curricula; piloting new co-curricular programmes with current students; and identifying ongoing opportunities to work with primary and secondary schools within our region of the UK.

OUR TEAM

Name:	Dr Amy Munro-Faure
Title:	Head of Education and Student Engagement
Description:	Responsible for Cambridge Zero's education activity alongside student engagement and empowerment.

Name:	Catrin Darsley
Title:	Education Manager
Description:	Leads on the development, management and delivery of education activities around climate-change and sustainability.

Name:	Elizabeth Simpson
Title:	Student Engagement Co-ordinator
Description:	Manages day-to-day delivery of student engagement programmes.

Name:	Charlie Barty-King
Title:	Green Officer Network Coordinator
Description:	College Green Officers network coordinator

Geography curricula review to align with sustainable education

Lead: Christine Özden, Global Director for Climate Education, Cambridge University Press and Assessment

Cambridge Zero facilitated a collaboration between Cambridge University Press and Assessment and the Department of Geography to review the subject curricula. Teaching faculty members, academics and researchers showcased current climate-related geographic research and identified opportunities to embed content, context and skills into qualification specifications under review at Cambridge University Press & Assessment. This work led to the reframing of the OCR Geography GCSE specification to further embed climate and sustainability. The reframed specification will impact around 30,000 learners a year. The Cambridge International Geography IGCSE textbook will be revised to include a foreword and climate case studies from key academics in the Department of Geography. The work has also had a significant impact on the structure and framing of the Cambridge International AS and A Level Geography syllabi (these qualifications are among the "top 10" of Cambridge International AS and AL qualifications and reach tens of thousands of students around the world). The redeveloped qualifications will be taught for the first time after 2025.

"We want to bring climate and sustainability-related research, thinking and evidence to bear across our international GCSE, AS and A Level Geography curriculum. Through colleagues within Cambridge Zero, we have been able to access research and teaching expertise in the Department of Geography to prompt dialogue as to how this expertise can positively impact the design and development of these qualifications."

Christine Özden, Global Director for Climate Education, University Press and Assessment

EMBEDDING CLIMATE AND SUSTAINABILITY KNOWLEDGE AND SKILLS IN CAMBRIDGE TEACHING

The **MasterCard Foundation Scholars Programme** at Cambridge is designed to provide students from under-represented communities in Africa with fully funded opportunities to complete their Master's training, grow in transformative leadership, and contribute to climate resilience and sustainability. Cambridge Zero has continually engaged with this programme and had representation on all task and finish groups, which have been designing ongoing delivery.

Multiple departments are leading the way in identifying opportunities to integrate teaching that focuses on climate and sustainability knowledge and skills. Cambridge Zero has played a supportive role in sharing or initiating the following changes. The first cohort of students completed the new Natural Sciences IB course in **Quantitative Environmental Science**, led by Professor Alexandra Turchyn (Gonville & Caius). The School of Clinical Medicine recruited its first **Climate Teaching Fellow** to review and embed climate and sustainability-related content into the clinical course. The **Department of Chemical Engineering and Biotechnology** initiated a project to integrate climate and sustainability learning opportunities and teaching into its new undergraduate degree, the Chemical Engineering and Biotechnology Tripos.

Climate Teaching Fellow, School of Clinical Medicine

Lead: Dr James Smith, Assistant Director of Public Health Studies and Sustainability Lead, Cambridge Public Health Interdisciplinary Research Centre.

A new climate change fellowship was created in 2023 by the University of Cambridge and Royal Papworth Hospital NHS Trust, with the support of Cambridge Zero. James Smith appointed Rebecca Davis to the role last August, with the aim of integrating education on climate change and health into the curricula provided by the University of Cambridge School of Clinical Medicine. A GP by background with a keen interest in sustainable healthcare, Rebecca is also developing opportunities for collaborative education between the University of Cambridge, Papworth Hospital and Addenbrooke's Hospital on the Cambridge Biomedical Campus.

The principal work to date has focused on meeting with subject leads, supporting upskilling faculty and integration of environmentally sustainable healthcare concepts into seminars and lectures. Wider aspects of the role are highly varied and have included delivering a new weekly session to students at Papworth, teaching junior doctors and departments within hospitals on campus, meeting local respiratory pharmacists and more recently organising a panel discussion 'Exploring Careers within Sustainable Healthcare' as part of Cambridge Zero's Green Careers Festival.

Having the dedicated role has helped expedite and widen the work previously being done by James and the Clinical School. The focus on integration throughout the curriculum has helped increase awareness and normalise the notion that sustainable healthcare is a key concept for doctors to be knowledgeable about. In turn, practicing sustainably is a vital skill for all current and future clinicians.

"The Lancet has stated 'Climate Change is the biggest global health threat of the 21st century' though also 'the biggest health opportunity'. This role has provided a unique and wonderful opportunity to learn more about sustainable healthcare, meet some inspiring people and be a part in helping address the biggest issue of our time"

Dr Rebecca Davis, Climate Change Education Fellow and GP, University of Cambridge Clinical School of Medicine

UNDERGRADUATE CURRICULUM AUDIT AND BROADER CLIMATE AND SUSTAINABILITY EDUCATION BASELINE REPORT

Cambridge Zero conducted a study to understand the current state of climate and sustainability education across the University in the 2022-23 academic year. This included working collaboratively with each of the six academic Schools to develop a case study of current good practice within each School; a desk-based audit of current courses, involving a review of content and skill (or competence) development opportunities within every undergraduate paper (or module); an audit of recently published QAA Subject Benchmark Statements for sustainability-related guidance relevant to Cambridge courses; and the results of University-wide consultation with staff and students. This report will be released in the 2023-24 academic year.

Cambridge Zero | Marshall Foundation Scholarships

Lead: Jesus College

New PhD studentships for Climate Science Research were made possible in 2023 following philanthropic support from alumnus James Marshall (Jesus 1986). Candidates for the Cambridge Zero | Marshall Foundation Scholarships will start in 2024, researching ways to develop sustainable solutions for the planet, society, and the economy. They will be recommended by the Schools of Technology and Physical Sciences, in partnership with Cambridge Zero, and hosted by Jesus College. James Marshall said: "It is my firm belief that through interdisciplinary collaboration and cutting-edge research, we can find sustainable solutions that benefit not only the environment but also society and the economy. We need to be more aggressive in trying out and implementing these solutions at scale and I am looking forward to seeing the impact this work can achieve."

"I am incredibly grateful to our forward-thinking alumnus James Marshall, whose investment in this studentship will achieve change far beyond our campus"

Sonita Alleyne, Master of Jesus College

CLIMATE KNOWLEDGE AND SKILLS BEYOND THE CURRICULUM

Recognising that learning and development are not limited to the classroom, we have continued to deliver and expand our co-curricular programmes for Cambridge students. We aim to engage with students across disciplines to equip them with the knowledge and skills to tackle climate challenges.

Cambridge Zero Climate Challenge 2023

Lead: Cambridge Zero in collaboration with Carbon13, CISL Canopy, the Maxwell Centre, Cambridge Enterprise and Energy IRC, sponsored by Moda Living.

The Climate Challenge is a climate-focussed entrepreneurship training programme and competition for postgraduate students and postdoctoral researchers. Participants attend weekly training sessions over the Lent Term, covering topics from intellectual property rights to pitching ideas. They then form small teams to develop their own scalable solutions to help tackle the climate crisis.

The theme of the 2023 Climate Challenge was “a just transition”, which encouraged participants to find solutions that reduce emissions or enable climate adaptation in a manner that is inclusive or generates other social benefits. In 2023, 41 students across 17 teams submitted early-stage scalable proposals to climate challenges.

The winners were Team AlgaeSorb, who pitched algae as a potential business solution for reducing methane emissions from landfill and waste-water sites. They were awarded £1500 by a judging panel composed of Dr Nicky Dee of Carbon13, serial entrepreneur Simon Hombersley, Professor Jaideep Prabhu (Clare), the Jawaharlal Nehru Professor of Indian Business and Enterprise at the Cambridge Judge Business School, Lindsay Hooper, Executive Director of CISL and Chris Gibbs from the University’s technology transfer unit Cambridge Enterprise.

“The Climate Challenge was an incredible opportunity to not only meet like-minded students but learn invaluable skills on crafting and designing impact-driven projects”

Anish Chaluvadi (King’s College) of Team AlgaeSorb, Gates-Cambridge Scholar and Nanoscience and Nanotechnology PhD student at King’s College

ENGAGE FOR CHANGE

Harnessing student innovation and ideas is also key to our **Engage for Change** programme, delivered by Cambridge Hub with additional support from the Environmental Sustainability Team. A total of 37 students participated and each initiated a sustainability intervention in their College or Department, engaging a further 398 secondary participants. Nearly all respondents (97%) to a survey of the programme said they are more likely to tackle social and environmental challenges as a result of Engage for Change.

Our programmes not only enable student innovation, but also equip students to make change in their future careers. This year's **Green Careers Festival**, run in collaboration with the Careers Service, saw the first in-person Green Careers Fair, with 23 employers and 299 students in attendance. In addition, 102 students attended four Cambridge Zero panel events, focussed on Sustainability in Media and Publishing, Sustainability consulting for STEM and non-STEM graduates and Climate Law.

Cambridge Zero continued to fund and support the **Cambridge Climate Literacy Project**, facilitated by Cambridge Hub. Through this student-to-student training model, 78 students gained a certification from the Carbon Literacy Trust and made personal climate action pledges to reduce their carbon footprint.

Several of our programmes facilitated student climate leadership within the University community. We continued to support the **Postgraduate Academy** to host events, training and workshops for fellow postgraduate students engaged in climate research, with 234 attendances across seven events. We ran a support programme for elected student **Green Officers** across the 31 colleges and fostered collaboration between them, which resulted in two intercollegiate **Cambridge Green Weeks**. We trialled new programmes this year, including the student-led digital publication '**A Matter of Degrees**', which featured student journalism relating to the University's climate and sustainability related-activity. While this will not continue into the next academic year, the successful **Student Societies Climate Fund** pilot will, through which we allocated £4,544 to 12 student-led projects and events. These included a community garden in the Architecture Department and a climate speaker series by the Railway Club.

This year we launched our student mailing list in collaboration with the Environmental Sustainability Team, through which we communicated events and opportunities to students. As a result of our presence at the Freshers' and Refreshers Fairs, we had over 800 students sign up to this list.

Green Officers and Cambridge Green Weeks

Lead: Cambridge Zero working with the Cambridge Climate Society Committee

Cambridge Zero facilitates the Green Officer Network, which brings together elected student environmental and sustainability representatives from across the University's 31 colleges. The Network fosters collaboration between Green Officers to discuss and collaborate on environmental issues at the University and beyond. The Network also organises the Cambridge Green Weeks. Cambridge Zero also offers a termly Green Officer Support Programme, which includes socials, training, knowledge-sharing, networking and special access tours. Eleven events were held over 2022-2023, welcoming a total of 75 Green Officers.

"Witnessing the passion and hard work of the Student Green Officers was truly inspiring, and it's a testament to what we can achieve when we work together towards a common goal, making the theme of "Action" all the more fitting"

Deidre Boodoosingh (Wolfson), Green Officer Coordinator at Cambridge Climate Society

FUTURE LEADERS PROGRAMME

The Future Leaders Programme is a paid summer work placement programme for current and recent undergraduate students at the University of Cambridge and beyond. The programme aims to equip students with transferable skills and competencies that they can take into future work experiences, including interpersonal skills, communication skills and confidence in the workplace. It aims to enhance students' knowledge and understanding of topics related to climate change, sustainability and environmental science and allow them to explore their interests in different available career pathways relating to climate change, sustainability and environmental sciences.

The 2022 **Future Leaders Programme** recruited seven project assistants across Cambridge Zero and the Sustainability Team, who contributed to projects ranging from the University's sustainable business travel policy to the development of an ecological literacy training programme, alongside a programme of support and professional development.

In 2023, Cambridge Zero Future Leaders Programme collaborated with the [Centre for Landscape Regeneration](#) to hire nine project assistants working on projects ranging from supporting the development of an international higher education climate network to fieldwork investigating the effect of chemical additives on the production and consumption of greenhouse gases by fenland peat. We received 220 applications for the Future Leaders Programme 2023. Nearly half (49%) of these were from University of Cambridge students. Roles with the Centre for Landscape Regeneration were funded by NERC in line with the [NERC Diversity and Inclusion Living Action Plan](#), which aims to improve diversity and inclusion in environmental science. For this reason, we encouraged applications from under-represented and disadvantaged groups, and aimed to improve the accessibility of the programme overall.

One of our Future Leader interns, Shumona Nath (Murray Edwards), supported the [Department of Chemical Engineering and Biotechnology](#) with the Department's plans to launch a new direct entry Tripos (launched Michaelmas Term 2023). Collaborating with cutting-edge researchers, green-industry alumni, and teaching academics, Shumona created an *Education for Sustainability Framework*, which will be used to teach and inspire students on the new Tripos.

"It's given me such a real sense of what sustainability means in the real world"

Shumona Nath, FLP Project Assistant

Future Leaders Programme supports the Centre for Landscape Regeneration (CLR)

Lead: Dr Helen Driver, Research Programme Manager at the CLR

Cambridge Zero Future Leaders Programme and the CLR worked together to provide an accessible internship programme, working closely with participants in advance of and throughout the eight-week programme to ensure that all access needs were met. The success of these adjustments was reflected in positive feedback from our project assistants.

"We were delighted to be part of the programme this year. Our Future Leaders were a crucial part of our research team over the summer and conducted high quality research"

Dr Helen Driver, Research Programme Manager at the CLR.

POLICY ENGAGEMENT

Our work in policy engagement is focussed on shaping ambitious, evidence-based responses to climate change across local, national, and international levels, integrating academic evidence and expertise into the policymaking process, facilitating focussed discussions on climate-related policies, and ensuring comprehensive evaluation of the impacts.

COP28 Scholarship Programme

Lead: Steve Davison, Cambridge Zero, working with UK Universities Climate Network (UUCN), the UK Embassy Science and Innovation Network in UAE and the Research England funded Centre for Postdoctoral Research in Infrastructure, Cities and Energy (C-DICE).

At COP27 in 2022, Cambridge Zero and the UK Universities Climate Network started conversations with the UK Embassy Science and Innovation Network in UAE and the Research England funded Centre for Postdoctoral Research in Infrastructure, Cities and Energy (C-DICE) which led to the creation of 10 Networking Scholarships for UK early career researchers to attend COP28 the following year. Sponsoring partners supported the scholarships with direct travel and accommodation costs, with UUCN facilitating introductions and development of individual structured programmes for each researcher. Their reports can be found online [here](#).

“Early career researchers are the future leaders in science and innovation across the globe. Providing opportunities for international networking and collaboration at this stage may develop and sustain climate research beyond COP28”

Steve Davison, Director of Strategy, Cambridge Zero

CAMBRIDGE ZERO POLICY FORUM

Name: Dr Rob Doubleday (Christ's)
Title: Executive Director at the Centre for Science and Policy

Name: Lauren Milden
Title: Policy Advisor at the Centre for Science and Policy

Name: Dr Carmen Smith
Title: Engagement Coordinator at the Centre for Science and Policy

The Cambridge Zero Policy Forum is a multidisciplinary community of senior academics contributing evidence and expertise to public policies for the transition to a sustainable, inclusive, and resilient net zero society. The Policy Forum is a collaboration between Cambridge Zero and the Centre for Science and Policy (CSaP). Professor Emily Shuckburgh (Director, Cambridge Zero), Emily Farnworth (Director, Centre for Climate Engagement, Hughes Hall) and Dr Rob Doubleday are Co-Chairs of the Policy Forum.

This year, the Policy Forum ran nine in-person lunchtime seminars featuring guest policy stakeholders who joined participants for a chaired discussion. Speakers included Rachel Fisher (Deputy Director, Land Use Policy, Defra), Dr Nick Watts (Chief Sustainability Officer of the NHS) Chris Stark (CE, Climate Change Committee), Rt Hon Chris Skidmore MP, and Craig Bennett (Chief Executive Officer at the Wildlife Trusts). The Policy Forum worked with the Cambridge Zero Postgraduate Academy to prepare [articles summarising these seminars](#). The Policy Forum also supported a multidisciplinary response to the call for evidence for [Chris Skidmore MP's independent review](#) into the delivery of net-zero climate commitments.

Previous reports by the Policy Forum highlighted the importance of behaviour change for achieving net-zero. Liaising with Cambridgeshire County Council, the Policy Forum convened a roundtable to explore questions posed by stakeholders at the County Council on [changing organisational behaviours](#), particularly in the context of net-zero.

Following the successful [book launch of Simon Sharpe's Five Times Faster: Rethinking the Science, Economics, and Diplomacy of Climate Change](#) – in partnership with CSaP and Christ's College – the Policy Forum also ran a reading group with [Prof Srinivasan Keshav \(Fitzwilliam\)](#), which featured guest speakers. Outputs from the sessions are available at: <https://www.csap.cam.ac.uk/Research-Policy-Engagement/cambridge-zero/>.

The Policy Forum supported the second cohort of Cambridge Zero Darwin College David MacKay Research Associates to run events as part of the Climate Change Festival, addressing the following topics: ocean-based carbon dioxide removal, passive cooling and climate change and the law. The Policy Forum also recruited the second cohort of Research Associates, who will be organising events as part of the Cambridge Festival in 2023 and working with the College's Sustainability Engagement Coordinator.

Local priorities report

Lead: Cambridge Zero Policy Forum (CZPF), Centre for Science and Policy (CSaP) and the Centre for Climate Engagement (CCE)

In September 2022, the Cambridge Zero Policy Forum (CZPF) collaborated with the Centre for Science and Policy and the Centre for Climate Engagement to conduct a panel study on investment in resilient and sustainable infrastructure in the Cambridgeshire and Peterborough sub-region. This theme is important because while climate change is a global problem, solutions primarily need to be deployed locally. The results were published in a report [Local Priorities for investing in resilient & sustainable infrastructure](#) in 2023. The report made seven clear recommendations, based on senior academic discussions with external witnesses, for ways to facilitate resilient and sustainable infrastructure. The evidence gathered includes contributions from individuals with both practical experience and technical expertise covering renewable energy infrastructure, with a focus on community energy projects; retrofitting existing buildings; and strategic land use planning.

"The report provides a useful resource for local, regional and national policymakers exploring this topic, as well as organisations and academics. It shows the importance of both public and private funding structures for deploying local climate solutions, the need to tailor solutions to the right level of government, and the benefits of effective community engagement for local climate action."

Emily Farnworth, Cambridge Zero Fellow, Director of The Centre for Climate Engagement and co-Chair of the CZPF

COP27 IN SHARM EL-SHEIKH

Cambridge Zero led UK universities international engagement with COP27 in Egypt on behalf of the UK Universities Climate Network (UUCN). We supported Egyptian universities in their engagement with COP, advised the Egyptian Government on the creation of a COP27 universities working group, and helped develop a partnership between UUCN, the Egyptian Academy of Scientific Research and Technology (ASRT) and the British Council, that led to co-creation of UK/Egypt policy briefings on climate change and global health and climate change and food security.

Cambridge Zero also supported CISL at COP27 by helping to facilitate and promote the University's strong presence at the event.

The conference provided the first opportunity for a meeting of the Higher Education Climate Network of Networks (NoN), an international collaboration on climate change. Cambridge Zero's Director of Strategy, Steve Davison, co-convened the meeting alongside Kristy Facer, Director of the Secretariat of the [President's Advisory Committee on Environment, Climate Change and Sustainability](#).

The meeting was attended by COP27 Climate Champion Dr Mahmoud Mohieldin.

Networks represented at the meeting included:

- COP28 Presidency Team,
- UAE Universities Climate network (UCN) and COP28 Engagement Team,
- Climate Champions, Alliance of World Universities (U7+),
- Research and Independent Non-Governmental Organization Constituency (RINGO),
- International Sustainable Campus Network (ISCN),
- Second Nature (University Climate Change Coalition [UC3],
- Climate Leadership Network [CLN]),
- Least Developed Countries University Consortium on Climate Change (LUCCC),
- The Alliance for Sustainability Leadership in Education (EAUC),
- Global Alliance of Universities on Climate (GAUC),
- the UK Universities Climate Network (UUCN),
- UNFCCC Capacity Building Team,
- Asian Universities Alliance (AUA),
- Italian University network for Sustainable Development (RUS),
- Association of Pacific Rim Universities (APRU),
- Association of Commonwealth Universities (ACU), and
- International Universities Climate Alliance (IUCA).

Also at COP27, Cambridge Zero collaborated with the Institute for Policy Research (IPR), the UK Universities Climate Network (UUCN) and Imperial College London to launch a film project called **ActNowFilm**, platforming youth voices to call on policymakers for urgent action on climate. This was premiered at COP27 on GAUC (Global Alliance of Universities on Climate) day in the China pavilion. It was drawn from films submitted by over 140 young people from 32 countries and features young people from across the world sharing their lived experiences of climate change; their hopes and ambitions for the future; and their 'asks' of the climate change negotiators, as well as their own climate pledges. They present the case for why climate action is important to the future generation. The film received 914 views on YouTube and 126 mentions online.

Cambridge Zero's COP27 review panel had 8,938 impressions on social media and 187 attendance bookings, and our pre-COP event had 105 bookings.

Professor Emily Shuckburgh was involved in other policy engagement events over the year, including participating in a [panel discussion](#) of Government's Mission Zero, the report of the Independent Review of Net-Zero, chaired by Rt Hon Chris Skidmore MP. Later in 2023, she encouraged nearly 1,000 UK scientists to write to Prime Minister Rishi Sunak asking him not to approve any new oil and gas developments in the UK. This was covered by major media outlets including the Guardian, Independent and Times newspapers, and resulted in 300 mentions online including 246 media stories.

INDUSTRY, INNOVATION AND BUSINESS ENGAGEMENT

OUR TEAM

Name:	Dr Aga Iwasiewicz-Wabnig
Title:	Director of Partnership Development at the Maxwell Centre
Description:	Leads the development and implementation of our strategy for industrial engagement.

Name:	Dr Ethan Aines
Title:	Industrial Knowledge Exchange Manager
Description:	Ethan leads delivery of Cambridge Zero's industrial knowledge exchange initiatives.

OUR WORK

Cambridge Zero directly interacts with numerous companies, business networks and consortia, helping to connect industry with University expertise to accelerate the net-zero transition. We facilitate connections to academics across many disciplines, including energy, economics, manufacturing, industrial decarbonisation, and human behaviour. Representatives from 116 companies have attended events sponsored or co-badged with Cambridge Zero.

Throughout the year, Professor Emily Shuckburgh presented to large audiences of business people, including a speech at the **Times Earth Business Summit** and a talk as part of the **Prince of Wales' Business & Sustainability Programme**. She gave a keynote lecture at an **IMechE** Prestige event on climate change and shared her reflections at the **KPMG Leaders 2050 COP** event for young leaders.

A partnership with the luxury brand **CHANEL** began with a series of talks and workshops by Cambridge Zero to their staff and is now growing into a larger review of their sustainability strategy.

Jointly, with our networked organisations we amplify the combined reach into the world of business. For instance, through the **Maxwell-CZ ecosystem of connections** we access 2,500+ companies, including local **partnerships with Cambridge Cleantech** and **Cambridge Network**, but also internationally. Cambridge Zero also participates in the development of the **Innovate Cambridge** initiative.

To capitalise on our growing network and convening power, the new **Cambridge Breakthroughs** model is a collaboration between Cambridge Zero and the Maxwell Centre that convenes academic, industry and government perspectives around strategically selected challenge areas. We began exploring the role of potential future hydrogen economy and associated technologies, focusing on decarbonisation of the East region. We plan to position the following Breakthrough conversation around challenges in decarbonisation of real estate, supplementing academic thought leadership in decarbonisation of the built environment with specific case studies and prompts from industry.

Cambridge Zero Demonstrators Lab at the Maxwell Centre currently supports the collaboration between physics and engineering researchers and a start-up led by a clinician. They aim to demonstrate an energy-efficient, multiplexing PCR machine² which tackles both energy inefficiency associated with the traditional process, but also opens avenues to broader clinical applicability, including in developing nations.

The **UK Chapter of the World Materials Forum** was launched in partnership with the Maxwell Centre and Royce Cambridge. The inaugural chapter meeting brought together CEOs and CTOs from 22 companies with leading academics from eight UK universities in November 2022 to discuss challenges and opportunities in the decarbonisation of bulk materials, energy storage, and energy efficient electronics.

² Polymerase chain reaction (PCR) machines are cost-effective and highly efficient tools used to amplify small segments of DNA or RNA that are selected from the genome using a primer.

LAW AND GOVERNANCE ENGAGEMENT

The **Centre for Climate Engagement (CCE)**, Hughes Hall, translates and transfers academic insights in law and governance to drive boardroom action on climate change. In 2022-2023, it published expert briefings on a range of topics including a [report on the links between climate change, air pollution and health](#) and the need for a holistic approach to policy development. It published the [key outcomes from the United Nations Climate meeting, COP27](#), explaining how they might affect non-executive board directors, and discussing how to raise questions on climate reporting and disclosure in the boardroom. The CCE also prepared a [briefing on the Government's Net-Zero Review](#) in 2022 and explained what it meant for non-executive directors.

The CCE's Law for Climate Action programme launched its free-to-use [Law and Climate Atlas](#) which supports lawyers to help their clients navigate the net-zero transition and enables lawyers to recognise how climate change is impacting their practice – including physical climate risks, emerging technologies, and new policy measures shaping legal frameworks. It maps the intersections between climate change and law to bring focus to how climate change impacts many different areas of law – and how each area and its lawyers can help to drive change.

The CCE's spotlight interview series explored law for climate action through the lens of a range of experts in their fields. These included Dr Markus Gehring (Hughes Hall), Associate Professor of Law, Professor Marie-Claire Cordonier Segger (Lucy Cavendish), Senior Director of the Centre for International Sustainable Development Law and Executive Secretary of the Climate Law and Governance Initiative for COP27, Nigel Brook, who heads Clyde & Co's UK reinsurance team and leads the firm's global campaign on Resilience and Climate Change Risk, and Samuel Ruiz-Tagle (Hughes Hall), Research Associate in Administrative Law and Governance at the CCE.

The CCE Academic Engagement Programme established a network of over 300 academics at over 100 institutions from across the globe. It ran the inaugural [International Conference on ESG and Climate Governance](#), in partnership with Singapore Management University. The conference attracted 100 high-profile attendees from all regions, relevant disciplines and career points, with 50:50 men and women and 50:50 practitioner and academic participants.

The [Climate Governance Initiative](#), a non-profit organisation based at The Centre for Climate Engagement (CCE) and created in collaboration with the World Economic Forum, is dedicated to mobilising boards to accelerate the transition to net zero and build climate resilience. It exists to develop and support a global network that mobilises chairs, non-executive and independent directors on every continent to take climate action by enhancing their knowledge and skills in climate governance. The Initiative reached the milestone of 100,000 members across 71 countries during 2023. The UK chapter of the Initiative is called [Chapter Zero](#) and has over 2,200 members.

UNIVERSITY OF CAMBRIDGE INSTITUTE FOR SUSTAINABILITY LEADERSHIP (CISL)

In 2023, CISL published its second [Annual Review](#), reflecting the impact of the Institute and its global network of nearly 40,000 leaders across business, finance and policy. CISL has an even more critical role to play in educating, convening, providing insight, and fostering innovation than ever before in support of the systemic shifts we urgently need to see.

Developing ideas, research and resources for better decision-making

CISL developed innovative and diverse research collaborations to advance economic change including; a major [study](#) in partnership with DLA Piper to help boards of businesses in service of a sustainable future; a new [framework](#) to help develop mainstream leadership for a sustainable future and new [guidance](#) to help the finance industry address the risks and opportunities from nature loss and climate change.

"CISL's Leadership for a sustainable future really resonates. It provides a practical model [for] developing better leadership capabilities for everyone in our complex and challenging world"

Karen Pflug CSO, Ingka (IKEA's largest retailer)

Empowering individuals and organisations to lead change at scale

Over the year, 10,000 students completed CISL [education programmes](#), including new ground-breaking [online courses](#) to help professionals build capacity at scale; postgraduate programmes to build individual expertise in sustainability leadership and executive programmes delivered in the UK, Singapore, Australia and South Africa to help senior executives align their strategies & purpose with sustainability.

"The CISL programmes have provided our people with the vital tools and knowledge they need to be agents of change, both within and beyond Chanel"

Kate Wylie Chief Sustainability Officer & President Fondation CHANEL

Building transformative alliances across business, finance and policy

Throughout the year CISL's [Corporate Leaders Groups](#) advocated business and policy solutions on climate and nature in the UK and Europe.

"CISL's collaborative ecosystem, bringing together government, the private sector and academia, is helping to scale up the ambition and innovation we need for a sustainable future"

Nigel Topping UN High Level Climate Champion at COP26

Catalysing entrepreneurial leadership to accelerate solutions to global challenges

CISL's [Canopy](#) incubator now has over 40 members who operate from CISL's sustainably retrofitted headquarters in Cambridge. In 2023 the Canopy collaborated with UNICEF and leading innovation accelerators across the globe to launch the [Under 30 Climate Innovators Shaping the Future Initiative](#) to co-curate a pipeline of proven, youth-led, ready-to-scale innovations from diverse communities.

"Our partnership with CISL's Canopy will support ventures with transformative climate innovations and help unlock their potential for global impact"

Thomas Davin Director, UNICEF Office of Innovation

COMMUNICATIONS AND PUBLIC ENGAGEMENT

Cambridge Zero works in partnership with CUDAR and the Office of External Affairs and Communications to increase exposure of the University's climate-related work, to ensure that the University is recognised globally as a leader in this space, and to engage alumni, policymakers, key influencers, high-value philanthropists, the global media and the general public with climate change (including solutions, challenges and other issues).

OUR TEAM

Name:	Paul Casciato
Title:	Head of Communications
Description:	Responsible for all of Cambridge Zero's internal and external communications and the lead for all climate change news at the University of Cambridge

Name:	Jen Hayes
Title:	Head of Digital Programmes, Communications and Publications
Description:	Responsible for website development, virtual events, digital optimisation

Name:	Dr Antoinette Nestor
Title:	Public Engagement Manager
Description:	Responsible for our public engagement strategy, supporting research where there is a public engagement component, and helps manage our online presence and social media

Name:	Ellie Austin
Title:	Research Communications Project Assistant
Description:	Writes articles, press releases and website stories. Conducting research on the number of climate-related projects across the University

MEDIA ENGAGEMENT

The University of Cambridge had more than 20,000 mentions online related to climate change over the year and more than 14,000 mentions in news stories alone. Of those, there were nearly 2,000 specific mentions of Cambridge Zero and more than 500,000 total impressions on social media and nearly 14,000 engagements on our social media channels.

Cambridge Zero published more than 40 stories on our website www.zero.cam.ac.uk and on University channels and saw a near 25% increase in audiences across all channels compared to the previous year.

We showcase all University stories on climate change and the environment in one place on our website and run a Climate Media Hub for academics to engage with the media. The Hub develops media opportunities to speak on a broad range of climate topics.

These are a few of the media outlets we have engaged with over the past year:

BBC Radio 4 Today show	BBC News	BBC Newsnight	Sky News
Channel 4	BBC Radio Five Live	Reuters	Bloomberg
CNN	TIME Magazine	WIRED Magazine	Times newspaper
The Guardian	The Independent	Cambridge Independent	Cambridge News

These are a few of our top stories and activities over the year:

Climate Week NYC

Director Professor Emily Shuckburgh appeared at Climate Week NYC, the biggest climate change meeting of its kind in the world, which combines some of the world's leading policymakers, high value philanthropists, key global policymakers and top executives from the biggest multinational companies in the world. Professor Shuckburgh's appearance in the opening ceremony video alongside the head of the World Meteorological Organization was watched by more than 53,000 high value influencers online.

Professor Shuckburgh also appeared on the main stage with the Chief Sustainability Officers of Google and Siemens, where more than 2,000 high value global influencers watched their discussion of the future technology needed to bring about the energy transition.

"Why COP27 Matters"

An [interview with Professor Emily Shuckburgh](#) received 3,900 views on You Tube in 2022, when she spoke about the importance of COP27 and the need for accelerated action in the campaign against climate change.

"Killer Heatwaves endanger India's Development"

Cambridge Zero Fellow Dr Ramit Debnath's publication on killer heatwaves went viral after a [Cambridge Zero press release](#).

Coverage included 110 News outlets, including CNN, Bloomberg, Telegraph, Times of India, as well as TIME and WIRED Magazines.

There were nearly 19,000 impressions of our social media posts, and an invitation from the G20 for Ramit Debnath and co-author Dr Ronita Bardhan to present their findings on heatwaves.

Ladybird release of a children's book

News of the [Ladybird release of a children's book on climate change](#) co-authored by Cambridge Zero Director Professor Emily Shuckburgh, King Charles III and Natural England Chair Tony Juniper caught the imagination of the media in 2023.

A total of 520 stories were published including by the BBC, Guardian, Telegraph, Cambridge News and Press Association in the UK. Across the globe, coverage included Chinese, Vietnamese, Italian, Indian, US and UK media outlets.

ALUMNI ENGAGEMENT

Cambridge Zero works closely with the team at [Cambridge University Development and Alumni Relations \(CUDAR\)](#) to communicate and build links with alumni and supporters, and to raise major philanthropic gifts. There were 18 asks made across the office in support of Cambridge Zero and/or its affiliated centres, which resulted in raising £5,340,106 in philanthropic funds.

At New York Climate Week in September 2023, CUDAR and development colleagues at Cambridge in America collaborated with Cambridge Zero to create a busy engagement schedule for Climate Week NYC. They secured meetings with seven high-value prospects and organised a panel discussion and dinner hosted in The Morgan Library and Museum for U.S.-based alumni and donors, where Professor Emily Shuckburgh and panellists Professor Anil Madhavapeddy (Professor of Planetary Computing) and alumna Fiona Macklin (Senior Advisor to Groundswell, a joint project by the Bezos Earth Fund, Global Optimism, and the Systems Change Lab) spoke on the subject of technological and behavioural solutions for a sustainable future.

PUBLIC ENGAGEMENT

In 2022-23 we led and contributed to several initiatives to engage the public and spark discussion with a wider audience.

Our seven new **Public Engagement & Media Fellowship** PhDs and early career researchers completed a four-week course that provides the knowledge, skills and support to enable them to engage with the public on the topic of climate change, both online and in-person.

CAMBRIDGE FESTIVAL

In spring 2023, Cambridge Zero took part in the [Cambridge Festival](#), the University's wide-ranging series of online and in-person events. Cambridge Zero organised a number of exciting sessions covering a diverse range of topics. We had great discussions and engagement from the audience, bringing to the fore some very important societal questions.

Events included:

- The Cambridge Climate Lecture Series, in conjunction with Cambridge Zero, the Centre for Climate Repair and Anglia Ruskin University, hosted an event titled ['How should we manage our future as the global temperature rises?'](#). Chaired by Science writer Oliver Morton, speakers award-winning science author Gaia Vince and sustainability campaigner and writer Jonathon Porritt discussed the implications of 1.5C being almost out of reach.
- An online discussion on ["Can we cool a warming world?"](#) explored perspectives from science to policy to indigenous peoples. Chaired by Dr Antoinette Nestor, panellists included Dr Shaun Fitzgerald, Professor Hugh Hunt (Trinity), PhD student Alice Wells from University of Exeter and Ilona Mettiäinen from University of Lapland.
- Young people were invited to explore the question of **'What is Climate Repair'** and learn more about the research taking place, along with the associated benefits and risks. The event was targeted for a youth audience, but attracted all ages.
- Professor Emily Shuckburgh, spoke on two panels organised by the Students Union on **'Climate Change from Despair to Action'**, and **'Explore Climate Change with Big Bang Young Scientist of the Year.'**
- The Centre for Landscape Regeneration hosted an event titled **'What does the future hold for the Cambridgeshire Fens?'** The Fens contribute over £3 billion to the economy and produce a third of England's vegetables but are threatened by climate change and the decline of peatland. The panel of experts from research and farming discussed the complex web of interactions that need to be considered to protect biodiversity, local communities, and maintain UK food security.

CLIMATE CHANGE FESTIVAL

In 2022, the [Cambridge Zero Climate Change Festival](#) returned for its third edition, dedicated to fostering awareness of climate change and decarbonisation through meaningful engagement between academic and wider communities. Over three days in October, a dynamic program of 55 in-person and online webinars, talks, films, and workshops unfolded, drawing the participation of a diverse audience. Recordings of these sessions garnered an audience of over 1,000 viewers (and counting).

At the heart of the festival was a commitment to climate accessibility, emphasising the imperative of amplifying all voices, especially those most impacted by climate change. From discussions on racial justice and the power of storytelling, to explorations of clean energy, legal frameworks, plant-based diets, and sustainable fashion, the festival's breadth of topics reflected its inclusive ethos.

The opening ceremony set a tone of inclusivity by featuring voices from indigenous and non-indigenous communities alike, while the closing ceremony turned attention to the pressing issues of inequality and exclusion, underscoring the festival's dedication to fostering dialogue and action towards a more sustainable future for all.

SUMMER AT THE MUSEUMS

During the summer of 2023, Cambridge Zero joined the public marketing campaign #SummerWithTheMuseums by hosting the engaging event "Dear Planet Earth" at the picturesque Cambridge University Botanic Gardens. People of all ages, from children to adults, enjoyed a diverse range of activities throughout the afternoon. From immersive guided tours along the climate change trail to crafting nature-inspired art, listening to captivating stories, and engaging with scientists, there was something for everyone. The event was a resounding success, with attendees eagerly anticipating more activities planned in collaboration with the Cambridge University Botanic Gardens in the upcoming year.

HAY FESTIVAL

Cambridge Zero Director Professor Emily Shuckburgh appeared at the [Hay Festival](#) in June 2023 alongside Natural England Chair Tony Juniper to discuss the results from the Festival's week of Planet Assembly public workshops led by sustainability entrepreneur, Andy Middleton, Chief Exploration Officer at the TYF Group. At this concluding event, speakers launched an urgent call to climate action generated from these intense brain-storming discussions.

DECARBONISATION AND SUSTAINABILITY

LEADING BY EXAMPLE: SUPPORTING AMBITIOUS DECARBONISATION OF THE UNIVERSITY

Cambridge Zero works with the University's Sustainability Team, the University's Colleges, the local councils and local interest groups to help coordinate, facilitate and champion a rapid transition to a zero-carbon future.

The University has committed to achieving absolute zero carbon on energy-related emissions by no later than 2048 and set an interim target of achieving a 75% reduction against 2015/16 levels by 2030. The target is science-based (in line with the ambition needed to limit global temperature increases to below 1.5C degrees) and encompasses our electricity, gas, heat and steam, oil, biomass and fleet emissions (scopes 1 and 2 of the Greenhouse Gas Protocol).

The University has an aspiration to become zero carbon at least 10 years ahead of its target date (by 2038). This is so the University can provide an example of what is achievable in terms of carbon reduction, and opportunities for others to learn from its approach, including both its successes and areas that are found to be challenging.

SUPPORTING AMBITIOUS INITIATIVES

Cambridge Zero works with students, academics, Colleges, Departments and Schools alongside the University's Sustainability Team to support community initiatives on sustainability.

PLANT-BASED CAMBRIDGE

The student-led climate campaign group, Plant-Based Cambridge, promotes the importance of institutional food systems in leading the way in averting the climate and biodiversity crises. The campaign educates on the impact of animal agriculture on the environment and advocates for a transition to a fully plant-based food system across the University of Cambridge. In this first year, most work has been focused on education and engagement. Key outcomes included more than 600 signatures of support for the campaign; an academic open letter of support; the Student Union voting twice in favour of supporting Plant-Based Cambridge; being shortlisted for the Student Union's Campaign Impact Award; and a highly successful Green Week day of campaigning. The message is spreading and attitudes are changing, as demonstrated by the first fully plant-based May Ball at Darwin College this year, and more Colleges supporting fully plant-based formal halls. Now the campaign is established, it will be branched into sub-campaigns in the future, including Plant-Based University Catering Services, Plant-Based Colleges, Plant-Based Student Union, Plant-Based departments and divestment from animal agriculture. Over the next year, the group expects to make tangible change in food policy across the University and is already in discussions with the University Catering Services and Cambridge Zero-Cambridge Colleges Sustainable Food Initiative on moving toward a Plant-Based Cambridge.

SUPPORTING LAND ECONOMY

The Land Economy's Green Impact Excellence Project focused on encouraging students to participate more in sustainability initiatives, both within the department and across the wider Collegiate University. From student surveys, there was a clear desire for regular updates on what students could do to get involved in sustainability. As a result, 6 Land Economy students completed the Engage for Change programme sponsored by Cambridge Zero in early 2023. Students also got involved in work with Cambridge Carbon Literacy Project, Cambridge Zero, the College Green Week and the student-edited sustainability newsletter supported by Cambridge Zero, 'A Matter of Degrees'. The team also organised a seminar based on the research of one of the Department's PhD students on the environmental impact of food production and how to promote sustainable food consumption. Another request for more activities around energy efficiency resulted in a new Green Impact Student Inclusion Plan including the aim of carrying out an annual workspace energy-use audit. Land Economy is based in one of the older University buildings, so this focus on being as energy efficient as possible is key. Following the success of this student focused project, Land Economy is now running an Excellence Project to improve staff involvement in sustainability initiatives.

UNIVERSITY OF CAMBRIDGE INVESTMENT MANAGEMENT

[University of Cambridge Investment Management](#) (UCIM) is the investment organisation that manages the University's Endowment Fund. Investors include the University of Cambridge, 15 Colleges and six associated Trusts. The Endowment Fund supports the University, funding over 800 projects and programmes including scholarships, bursaries, teaching and research into the most critical societal issues, such as life sciences, technology, conservation and climate change. In the last 10 years, the fund has distributed over £1.1 billion to support the work of the University.

Working with Cambridge Zero and other partners across the University, UCIM is committed to delivering its ambition for the Endowment Fund to be net-zero of greenhouse gas emissions by 2038. A key part of delivering this is leveraging the climate and sustainability expertise at the University, educating and supporting fund manager partners to invest in the transition and decarbonise their portfolios. The combined assets under management of UCIM's fund manager partners is \$750bn, which means it has a substantial role and influence in helping to promote sustainable investment.

To support this work, UCIM has developed a bespoke executive education programme for fund managers in partnership with the Cambridge Institute for Sustainability Leadership (CISL). In the two years, 18 investment firms have completed the course, representing a total of over 150\$bn assets under management. The fourth cohort for partners based on the East Coast of the U.S. will run in the spring of 2024.

DECARBONISATION NETWORK

The Decarbonisation Network connects University of Cambridge academics with industry experts working towards decarbonisation.

There are three Special Interest Groups (SIGs):

- Light Harvesting (now Energy Materials),
- Built Environment and
- Hard to Decarbonise Technologies.

It is coordinated by the Strategic Partnerships Office and is run in collaboration with Cambridge Zero.

During 2022-2023, the Network co-ran 18 events, of which 6 were in-person workshops. Each event focused on a specific topic that combined interdisciplinary perspectives, and the panels were made of academic and external representatives.

Of these, Cambridge Zero led an in-person event focused on the use of West Cambridge as a living laboratory.

Membership of the Network doubled over the academic year and in November 2023 reached just over 400 members, half of whom are from 146 external organisations. The Network continues to organise online panel events and in-person spin-out events focusing on emerging priority themes and has supported academics in developing strategic proposals such as Centres for Doctoral Training.

SUSTAINABLE TRANSPORT

Several initiatives were launched in 2022-2023 to promote sustainable transport in Cambridge. The new 'Electric Bus Network' was introduced on 30 October, and new electric buses will operate on the Universal bus route from next year, with the service extended to serve Girton College, Homerton College and Wolfson College.

Sustainability showcase

In June 2023, the Environmental Sustainability Team (EST) hosted an inaugural Sustainability Showcase at Wolfson College. In terms of the programmes, for Green Impact alone we awarded 43 awards, of which 12 teams achieved Platinum status. Platinum means that each team had to complete 80% of the Green Impact workbook successfully. The Environmental Sustainability Team also recognised some of the projects run in collaboration with Cambridge Zero, including Sustainability Champions, Green Officers, the Climate Challenge, A Matter of Degrees, Engage for Change and Green Impact Student Auditors.

"It is a pleasure to recognise all engagement initiatives that the Environmental Sustainability Team and Cambridge Zero run. We look forward to another year of collaboration"

Susannah Cook, Sustainability Engagement Manager for Estate Management

OPERATIONS AND FINANCE

OUR TEAM

Name:	Tom Twitchett
Title:	Head of Operations
Description:	Responsible for the development and management of all operational activities and has oversight of the delivery of the agreed programmes of work

Name:	Shelley Arora-Tailby
Title:	Programme Manager
Description:	Oversight of successful programme and project delivery, coordinating with the research team to develop and manage research proposals

Name:	Nina Martin
Title:	Operations Manager
Description:	Implements and oversees administrative procedures and processes, HR management and financial planning

Name:	Lucia Hutton
Title:	Executive Assistant to Director
Description:	Co-ordinates the Director's activities

CAMBRIDGE ZERO FINANCIAL REPORT 2022-2023

The Cambridge Zero financial report shows an increase in both income and expenditure for 2022-2023, which reflects the heightened engagement and involvement witnessed across Cambridge and beyond for our work. As such, we expanded our team to meet the growing demands across our programmes.

We are grateful for the support of our generous funding partners and donors, whose contributions have been pivotal to our initiatives.

In thousands GBP	20/21	21/22	22/23
Opening Funds	466	298	190
Income in period	528	733	1187
Expenditure in period	696	841	1180
Net surplus/deficit	-168	-108	7
Closing Funds	298	190	197

CONTACT US

We welcome collaborators and supporters who would like to get involved in our work to solve the climate crisis. To contact us or to keep up to date with our news, head to the [Cambridge Zero website](#) and [sign up to our occasional emails](#).