**Climate change and sustainability**

ESRC supports the creation of new insights from research and datasets into climate change and sustainability in areas such as land use, transport, sustainable resources and infrastructures, food, water and energy. Our funding is helping the UK to meet its climate and sustainability goals.

Climate change is a global challenge. Our researchers are investigating the social and economic drivers and impacts of climate change, the risks associated with it, and the benefits and opportunities in addressing it. And we fund research and data collections into sustainability and solutions across areas as diverse as land use, transport, sustainable resources and infrastructures, food, water and energy. Economic and social science researchers are contributing to many projects run across UKRI such as [clean air, UK climate resilience, greenhouse gas removal, marine life and the circular economy](https://www.ukri.org/our-work/our-main-funds/strategic-priorities-fund/).

Building on many years of [investment totalling more than £400 million](https://pcancities.org.uk/sites/default/files/Review%20of%20Social%20Science%20Research%20on%20Climate%20Change_0.pdf), our current portfolio aims to understand how people and societies can survive and thrive within our planetary boundaries, focusing on climate mitigation, adaptation, and resilience to environmental changes and hazards.

Our recent engagement with COP26 highlighted the breadth of activities we support in this area.

Below are a few examples of our work.

### Studying the impact of climate change

Climate change and efforts to mitigate and adapt to it have far-reaching consequences for society and the economy, here in the UK and internationally. It is vital that we understand these impacts in order to create evidence-based policies that support a more sustainable world, and inform individuals, organisations and businesses about the actions they can take to help.

Our [Centre for Climate Change Economics and Policy (CCCEP)](https://www.cccep.ac.uk/), hosted jointly by the London School of Economics and the University of Leeds, is carrying out wide-ranging research addressing issues such as the climate-friendly development of resilient cities, low-carbon industrial and economic growth, sustainable infrastructure, and incentives for behavioural change to support better policy decisions.

Together with European partners, we are supporting a number of projects through the [JPI Climate SOLSTICE research programme](https://www.ukri.org/our-work/responding-to-climate-change/ukri-towards-cop26/enabling-societal-transformation-in-the-face-of-climate-change/).

The projects look at issues around social justice, participation, and learning and risk, to gain a better understanding of how communities are getting to grips with climate change and how they can make a difference.

### Supporting sustainable societies

In a rapidly changing world with finite resources, the drive for economic prosperity and growth can seem at odds with the need to move towards sustainable solutions that mitigate against climate change. Our [Joint Programming Initiative (JPI) Urban Europe funding](https://jpi-urbaneurope.eu/news/announcement-projects-selected-for-funding-in-the-urban-migration-call/) is bringing together knowledge and research focused on society, such as migrant access to urban resources and services; housing challenges; and citizen empowerment through participative processes.

Based at the University of Surrey, the [ESRC Centre for Understanding Sustainable Prosperity (CUSP)](https://cusp.ac.uk/) is working with people, policymakers and businesses to understand what sustainable prosperity looks like and how it might be achieved. CUSP’s work not only addresses prosperity in terms of wealth creation but also what this looks like for society, including health and wellbeing, access to education and rewarding work.

Policies aimed at addressing climate change may not impact all parts of society in the same way, both in the UK and in the wider world, potentially causing or reinforcing existing inequalities and marginalising certain social groups. Our [ESRC Social, Technological and Environmental Pathways to Sustainability (STEPS) Centre](https://steps-centre.org/) is working with global colleagues to carry out research aimed at supporting the development of just and democratic sustainability policies that include the needs, knowledge and perspectives of poor and marginalised people.

We also support researchers through the [Global Challenges Research Fund (GCRF)](https://www.ukri.org/our-work/collaborating-internationally/global-challenges-research-fund/) – a major Government funding stream supporting research that addresses the most pressing problems faced by low and middle-income countries, including climate change, environmental sustainability and food security.

### Practical solutions

Mitigating the impact of climate change, adapting to its effects and meeting our sustainability goals, such as reducing carbon dioxide emissions, is going to require significant changes in the way we live.

We are investing in several major programmes designed to understand the impact of climate change on society and the economy, with the goal of developing practical solutions that will move us in the right direction to a more sustainable world.

The [Centre for Climate Change and Social Transformations (CAST)](https://cast.ac.uk/), led by Cardiff and Bath universities, is a global hub for understanding the profound changes required to address climate change. CAST’s work focuses on how we can all make a difference in our everyday lives in the areas of food, travel, shopping, and heating or cooling in buildings, and how best to bring about these changes.

And our £3.5 million investment in the [Place-based Climate Action Network (P-CAN)](https://pcancities.org.uk/) is translating top-level climate policy into direct, practical actions within local communities, creating healthier, more prosperous and resilient towns and cities with reduced greenhouse gas emissions.

As part of [JPI Urban Europe: Urban Accessibility and Connectivity](https://jpi-urbaneurope.eu/), we are supporting researchers tackling the challenges of embedding sustainable transport into urban development, from walking and micro-scooters through to electric cars and railways.

And in partnership with AHRC and NERC, we are funding [The Future of UK Treescapes](https://www.uktreescapes.org/). This programme seeks to significantly improve the environmental, socio-economic and cultural understanding of the functions and services provided by UK treescapes in order to inform decision-making on the expansion of future treescapes for the benefits of the environment and society.

### Innovative energy solutions and moving to a low carbon economy

Modern societies rely on a secure, affordable and sustainable supply of energy, which must be balanced against the need to reduce greenhouse gas emissions. Understanding the wide-ranging demands for energy and how these might be met in a more sustainable and environmentally friendly way is therefore an essential part of climate change research.

Researchers at the Centre for [Research into Energy Demand Solutions (CREDS)](https://www.creds.ac.uk/) at the University of Oxford are investigating the drivers of energy demand in the UK and other countries, and the technical, social and policy challenges that need to be overcome to bring about transformative change.

At University College London, the [UK Energy Research Centre (UKERC)](https://ukerc.ac.uk/) is also addressing the challenges and opportunities for the UK brought about by the movement towards the decarbonisation of our energy systems. One important social science project at the centre is the SEE Observatory, which is developing new approaches to engaging the public in making the transition to low-carbon energy production more fair, responsible and responsive to society.

### Understanding complexity

It is impossible to separate the environment and climate from society’s needs for food, water and energy. Policies aimed at tackling climate change must therefore take this complex interplay into account, in order to avoid unintended and potentially harmful consequences of incompatible solutions.

Researchers at the [Centre for the Evaluation of Complexity Across the Nexus (CECAN)](https://www.cecan.ac.uk/) are working with policymakers, academics and the public to explore innovative ways of developing and evaluating policies that impact on these interconnected areas, for example through computer modelling of possible scenarios.

### Leadership to tackle and solve environmental problems

The [Advancing Capacity for Climate and Environment Social Science (ACCESS)](https://greenfutures.exeter.ac.uk/access/) is hosted by University of Exeter and University of Surrey. It aims to provide leadership on the social science contribution towards tackling and solving a range of environmental problems, supporting the transition to a sustainable and biodiverse environment and a net zero society.

This will be done by championing, coordinating and facilitating collaboration within and beyond the social sciences through a wide range of stakeholders including policy, businesses and civil society.

Climate change is one of the most pressing global challenges facing society today, with the potential to cause far-reaching disruption to communities and the economy here in the UK and worldwide.

As one of the 195 countries to sign the [Paris Agreement,](https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement) the UK is committed to tackling the challenge of climate change. We have also committed to achieving the UN’s 2030 [Sustainable Development Goals](http://www.un.org/sustainabledevelopment/sustainable-development-goals/) and are the first major economy to [pass a law to bring all greenhouse gas emissions to net zero by 2050](https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law).

We’re investing in research and data collections to understand how individuals, communities, political and corporate actions can contribute to, or mitigate and adapt to the effects of climate change. Our investments generate the evidence to support sustainable and equitable societies, structures and systems for the future.