

Research publications: 2020-2023

Journal Publications

- Williams, Reay & Smith (2023) [Avoiding emissions versus creating sinks—Effectiveness and attractiveness to climate finance](#). Global Change Biology.
- Hannon M et al. (2023) [Carbon Offsetting and Communities : Can Nature-Based Voluntary Carbon Offsetting Benefit Scottish Communities?](#) University of Strathclyde.
- Abou-Hadid et al. (2022) [Achieving Food Security under Climate Change](#). Policy Working Paper for COP27, Academy of Scientific Research and Technology & UK Universities Climate Network.
- Thew H et al. (2021) “[Mainstreaming Climate Change Education in UK Higher Education Institutions](#).” COP26 Universities Network Briefing.
- Smith P, Reay D, Smith J (2021) [Agricultural methane emissions and the potential for mitigation](#). Phil. Trans. Royal Soc. A, <https://doi.org/10.1098/rsta.2020.0451>
- Ainalis, Daniel, et al. (2021) “[Net-zero solutions and research priorities in the 2020s](#).” COP26 Universities Network Briefing.
- Peterson, Katrine, et al. “[Destination net zero: setting and delivering ambitious, credible targets](#).” COP26 Universities Network Briefing (2021).
- Mitchell-Larson, Eli, et al. “[HOW CAN CARBON OFFSETTING HELP UK FURTHER AND HIGHER EDUCATION INSTITUTIONS ACHIEVE NET ZERO EMISSIONS?](#).” COP26 Universities Network Briefing (2021).

- [A net-zero emissions economic recovery from COVID-19](#) (Oxford Smith School of Enterprise and the Environment, May 2020)
- [Land Use and Agriculture: Pitfalls and Precautions on the Road to Net Zero](#) (Frontiers in Climate, August 2020)

Commentaries

- **An overview of the Scottish Climate Change Plan update (February 2021) -**
In this [blog](#) Jonathan Bowes, ClimateXChange Research Fellow, gives an overview of the Scottish Climate Change Plan update.
- **New Climate Projections Summary for Scotland (January 2021) -** Adaptation
Scotland has published a new climate projections [summary](#), providing an overview for Scotland of the most up to date UK Met Office Climate Projections.
- **Principles for a Scottish Green Recovery (September 2020) -** this [blog](#) sets out the key points from CXC policy director Professor Dave Reay's response to the Scottish Parliament's Environment, Climate Change and Land Reform Committee called for views on the principles that should underpin a green recovery.
- **How is Scotland progressing towards net-zero? (July 2020) -** In this [blog](#) CXC Policy Director Dave Reay and Programme Manager Dan Barlow look at the implications for climate change policy.
- **Bravo Net Zero? (July 2020) -** Confused by the term 'net zero'? In this [blog](#) ECCI Director and CXC Policy Director Dave Reay looks at what it means, and why the concept is central in our climate change efforts.

- **Covid-19 and climate change (April 2020)** - With mounting pressure on pedestrian infrastructure in cities, this blog explores some of the ways in which citizens and governments are making space for people in towns and cities and question what this means for the future of urban travel. By Alice Creasy, Network Analyst with the Place-Based Climate Action Network (PCAN).
- **Can climate commissions own a city's future? (December 2019)** - By Dr Matthew Lane, post-doctoral researcher in urban climate governance at the University of Edinburgh, School of Geosciences and lead on the recently established PCAN Ethnography working group.

Research Projects

- **20 minute neighbourhoods in a Scottish context (March 2021)** - This ClimateXChange research considers the ambition for 20 minute neighbourhoods in Scotland, taking account of the differing settlement patterns across the country, and to highlight interventions that would support delivery. [Read more](#).
- **A review of heat decarbonisation policies in Europe (March 2021)** - Decarbonising how we heat our buildings is a significant challenge for climate policy. This ClimateXChange report reviews the heating technologies and heat policies of nine European countries: the UK (with a focus on Scotland), the Netherlands, Norway, Sweden, Finland, Denmark, France, Germany and Ireland. It sets out in detail the policy instruments – financial incentives, regulations and tax structures – that are used to drive countries toward zero-carbon heating.

Where available, we also present information on how each country is developing policies and targets for the decarbonisation of heating. [Read more](#).

- **Using satellite data to help quantify Scottish greenhouse gas emissions (February 2021)**- At present, greenhouse gas (GHG) emissions for Scotland are published annually, approximately 18 months after the period to which they relate. The current approach combines annual production and usage statistics with estimates of how much carbon is emitted per unit measure of production and usage. An alternative approach is to look to the atmosphere. This study examines how satellite observations of the atmosphere could be used to build on existing modelling efforts and report GHG emissions well in advance of the present estimates. [Read more](#).
- **[A Net Zero Carbon Roadmap for Edinburgh](#) (December 2020)** - Co-produced by Place-based Climate Action Network and Carbon Management MSc alum Robert Williamson, with an introduction by ECCI's Head of Innovation and Skills, Jamie Brogan. Find out more about the [Road Map](#).
- **[Wood in construction, a policy and data summary](#) (October 2020)** - This report provides a policy background and information on carbon emissions and sequestration in the construction industry, along with recommendations for policy. By Dr. Renée Kerkvliet-Hermans, as part of a SAGES policy internship working with Landscapes as Carbon Sinks at the Edinburgh Centre for Carbon Innovation (ECCI), Centre for Sustainable Forests and Landscapes (CSFL) and Climate-KIC.

Postgraduate Student Dissertations

- **The influence of goal framing communication, images, and habits for the transition to low carbon lifestyles: A case study on food delivery services in China** Shiyao Chen, MSc in Carbon Management
- **Analysing the potential of afforestation as a means to offset Transport Scotland's operational carbon emissions** Craig Love, MSc in Carbon Management
- **Calculating the carbon impacts associated with the damage, repair and recovery of residential buildings after a major flood event within the City of Leeds** Michael Allison, MSc in Carbon Management
- **Calculating the carbon impacts associated with surface flooding induced damage and disruption to transport systems within the City of Leeds using carbon foot-printing life cycle assessment** Alexander Boden, MSc in Carbon Management
- **Climate Change Social Vulnerability Assessment of Indigenous Community: a case study for Sipsong Panna, China** Si Wu, MSc in Carbon Management
- **Climate Change Adaptation and Vulnerability Assessment at the Urban Level – A Case Study of Tianjin, China** Ziqi Zhu, MSc in Carbon Management
- **Leeds Flooding Carbon Impacts Study – Impacts associated with damage to commercial buildings to commercial buildings resulting from major flood events in the City of Leeds** Cameron Grant, MSc in Carbon Management

- **Responsibilising Place; setting up the Edinburgh Climate Commission**

Alice Creasy, MSc in Environmental Sustainability

- **Vulnerability, Emissions and Governance: A statistical analysis of the determinants of aid allocation in the Green Climate Fund** Josie Murdoch,

MSc in Environment & Development