



TRANSECTS

Transitions in Energy for Coastal Communities over Time and Space

Year 2 Emissions Report

Reporting period April 2025 – March 2026

Introduction

Our planet faces an unprecedented climate and biodiversity crisis. UK Research and Innovation (UKRI) has set out an Environmental Sustainability Strategy, which highlights the role that research and innovation play in addressing these challenges. Within this strategy, UKRI aims to embed environmental sustainability across all investment decisions, including an approach to reduce and abate emissions associated with business travel activities.

As a research project funded by UKRI, we recognise that TRANSECTS research outputs must support the UK's transition to Net Zero and that the way we conduct our research is important. We continue to ensure that every aspect of TRANSECTS delivery is undertaken according to the following governing sustainability principles:

- Minimising our greenhouse gas (GHG) emissions across all aspects of research
- Ensuring that our impacts on biodiversity are identified and mitigated
- Minimising resource use and maximising circularity
- Sharing learning across all our research collaborators and stakeholder partners on sustainable research practices

This report presents an analysis of our GHG emissions in Year 2 of the TRANSECTS project, building on the Year 1 baseline. It tracks how the project's travel footprint has changed as research activities have progressed from set-up into delivery, and identifies steps that will be taken to continue reducing and mitigating these emissions.

Reporting Methodology

Determining the greenhouse gas emissions from a research project can be surprisingly challenging. Emissions can originate from various sources, including travel, electricity use, equipment, and the production of materials used in the project. Some are easy to measure; others are hidden within supply chains or shared across multiple activities. There are also different ways to calculate emissions, and results can vary depending on the method or data source used.

As in Year 1, the TRANSECTS project uses the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat's GHG emissions calculator to estimate GHG emissions. In line with UKRI's focus on business travel, we continue to focus on Scope 3 emissions within the business-travel category, so that Year 1 and Year 2 figures are directly comparable.

Data was collected from every member of the project team regarding their business travel for TRANSECTS. This included travel location, distance travelled, mode of transport, number of nights' accommodation, type of accommodation, and the number of meals (meat- or vegetable-based). Each trip was entered into the calculator to determine kg CO₂e. A key difference in Year 2 is the broader range of travel, as fieldwork, partner meetings and conference activity increased. This included, for the first time, air travel.

Some Year 2 trips served more than one purpose, combining TRANSECTS activities with other commitments, or drawing only partly on project funds. In principle these journeys could be split between activities, but the team decided to record any trip with a TRANSECTS component in full against the project. This keeps the record-keeping simple and consistent, and means the figures are more likely to over-state than under-state the project's footprint.

Emissions Reporting Results

4.01 tonnes of CO₂e

(4,006 kg CO₂e across 13 travellers)

Equivalent to:



*Around **2.3** Trans-Atlantic round-trip flights*



*Approximately **1.5** years of energy use for an average household*



*Around **182** trees absorbing CO₂ for one year to offset*

Year 1 to Year 2 comparison

Compared with the 4.32 tonnes reported in Year 1, total emissions in Year 2 were slightly lower, at 4.01 tonnes, a reduction of roughly 7%. We had expected travel to rise as research activity ramped up, so this is a welcome result. The composition of emissions did shift markedly, however: Year 1 travel was almost entirely by car, train and ferry with negligible accommodation impact, whereas Year 2 saw air travel and substantial accommodation emissions as multi-day fieldwork and international engagement began.

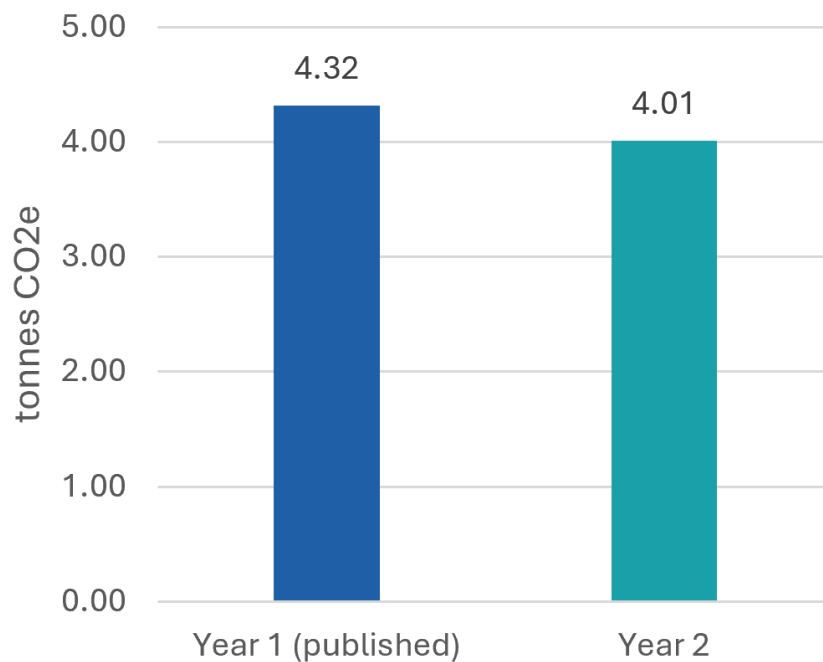


Figure 1. Total project travel emissions, Year 1 (published) versus Year 2.

As Year 1 activity focused on establishing project processes and systems, Year 2 emissions reflect research moving into active delivery. This included travel for natural-capital and just-transition fieldwork, partner and community engagement in the case-study regions (Orkney, the Humber and east-coast Scotland), and dissemination at conferences.

Emissions by category

Travel was the largest single category at 44% of the total, but accommodation (37%) and food (20%) together accounted for the majority of emissions. This is a breakdown the Year 1 report did not capture, and it highlights that overnight stays and catering, not just the journeys themselves, are worth targeting.

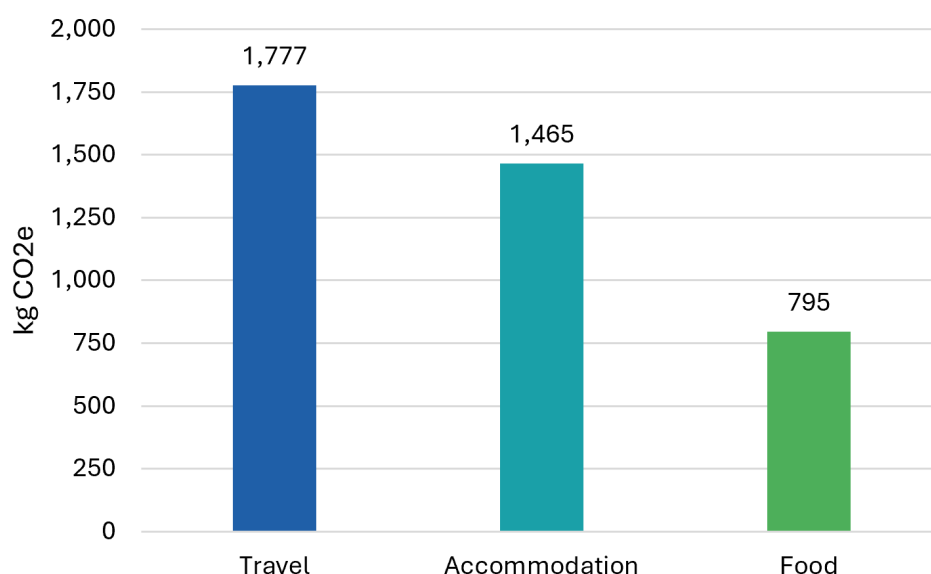


Figure 2. Year 2 emissions by category (travel, accommodation, food).

Emissions by travel mode

Within travel emissions, flights were the single largest mode, accounting for 43% of travel-related emissions despite a relatively small number of trips. This was driven by two international trips (to Stavanger and Bilbao) together with several Aberdeen to Kirkwall flights serving the annual meeting in Orkney and fieldwork. The remaining travel was by car, train, ferry, EV and bus, with rail and ferry continuing to carry much of the domestic and island travel at comparatively low emissions per kilometre.

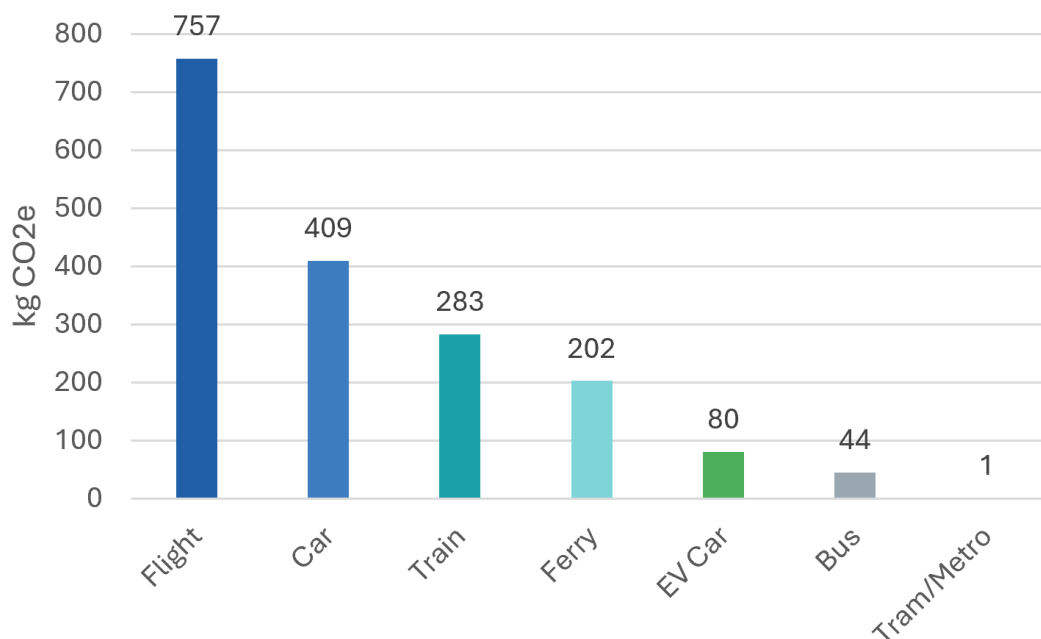


Figure 3. Year 2 travel emissions by mode.

Key Insights

The analysis revealed three key insights:

 **Rail and ferry remain the low-carbon backbone of travel.** Domestic and island journeys made heavy use of train and ferry, keeping ground-travel emissions low relative to the distances covered. This is consistent with the Year 1 insight that train is the best way to travel.

 **Vegetarian catering continued to reduce food emissions.** Most meals logged were vegetarian, reflecting the Year 1 insight that vegetarian is the best way to eat.

 **Air travel is the new emissions driver.** Flights, which were absent in Year 1, became the largest travel mode in Year 2, dominated by two international trips.

Where international travel is unavoidable, this is the clearest single lever for further reductions, alongside accommodation, which has emerged as a major contributor.

Reduction/Mitigation Actions

The TRANSECTS team has agreed to maintain and apply a sustainable travel and catering policy. This policy is designed to encourage sustainable choices while remaining fair and inclusive, and must be able to consider:

Caring responsibilities. Recognise that some team members may have childcare, eldercare, or other caregiving duties, and allow flexibility in travel modes and timing (e.g. flying instead of multi-day train travel where needed).

Disability and accessibility. Ensure travel options accommodate physical, sensory and cognitive disabilities, and provide accessible booking processes and support for mobility aids or assistance.

Geographic inequities. Acknowledge that island or remote-based colleagues (e.g. in Orkney) may have fewer low-carbon travel options, and avoid penalising those who must fly due to location constraints.

Dietary needs. Provide inclusive options for religious diets (e.g. halal, kosher), allergies and intolerances (e.g. gluten-free, nut-free), health-related diets (e.g. diabetic-friendly), and ethical choices (e.g. vegan, vegetarian).

Avoiding one-size-fits-all. While vegetarian or vegan catering reduces emissions, the project avoids mandating it exclusively. A travel and catering hierarchy encourages sustainable choices but allows for exceptions, with a ‘small print’ clause acknowledging that sustainability goals must be balanced with equality, diversity and inclusion (EDI) needs.

International travel. Air travel, and international conference travel in particular, was the largest single contributor to the Year 2 footprint. The project is mindful of the tension here: in-person participation has real research value, for sharing findings, building collaborations and supporting early-career researchers, but it also carries the highest emissions. Rather than treating such travel as either always justified or something to avoid outright, the project seeks to balance these considerations. International travel is reserved for events where attendance in person is judged genuinely worthwhile, lower-carbon options are looked at first, and any flights that do go ahead are recorded openly and treated as the main priority for future reduction.