



# TRANSECTS

Transitions in Energy for Coastal Communities  
over Time and Space

## Year 1 Emissions Report & Sustainable Travel Hierarchy

### Introduction

---

Our planet faces an unprecedented climate and biodiversity crisis. UK Research and Innovation has set out an Environmental Sustainability Strategy that highlights the role of research and innovation in addressing these challenges. Within this strategy, UKRI aims to embed environmental sustainability across all investment decisions by 2025, 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 will 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 1 of the TRANSECTS project and identifies steps that will be taken in Year 2 to reduce and/or mitigate 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 of these are easy to measure, but others are hidden within supply chains or shared across multiple activities, making them more difficult to track. On top of that, there are different ways to calculate emissions, and the results can vary depending on which method or data source you use. It's a bit like trying to count the carbon footprint of a dinner party when you don't know where all the ingredients came from or how everyone got there.

The TRANSECTS project uses the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat's GHG emissions calculator (<https://unfccc.int/documents/271269>) to estimate GHG emissions. This is a free GHG footprint calculator to help estimate emissions by relevant emission sources.

Due to the complexity of accounting for emissions and UKRI's focus on business travel, we have decided to focus solely on Scope 3 emissions at this time, specifically within the business travel category.

Data was collected from every member of the project team regarding their business travel for the TRANSECTS project. Data included travel location, distance traveled, mode of transport, number of nights' accommodation, type of accommodation, and the number of meals (including whether they were meat- or vegetable-based). This data was then entered into the UNFCCC calculator to determine kg CO<sub>2</sub>e for each trip.

## Emissions Reporting Results

---

**4.32** tonnes of CO<sub>2</sub>e

Equivalent to:

 *Nearly the distance of driving around the Earth **once***

✈️ **2.5** Trans-Atlantic round-trip flights

🏠 **1.6** years of energy use for an average household

🌳 Would need **196 trees** absorbing CO<sup>2</sup> for 1 year to offset

Because the first year of the TRANSECTS project focused primarily on establishing project processes and systems and on employing our PDRAs, our travel emissions are primarily related to project and network launch meetings, as well as to the project management, communication, and dissemination work packages (Figure 1).

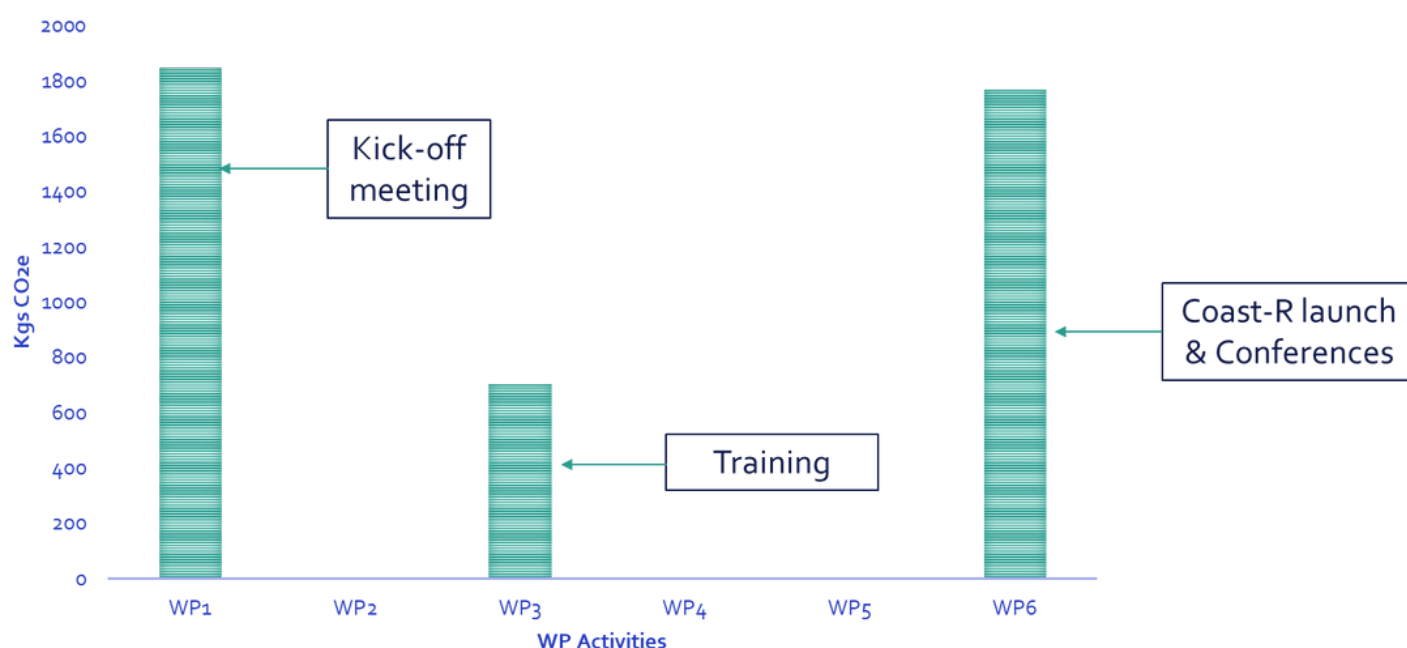


Figure 1. Emissions by work package.

It is expected that with research activities ramping up in year 2, we will see significantly increased business travel emissions. Given the significant emissions already generated by the project, we are keen to identify ways to mitigate/reduce further emissions.

## Key Insights

The analysis revealed two key insights:

🚆 **Train** is the best way to travel

# Reduction/Mitigation Actions

---

The TRANSECTS team has agreed to create a **sustainable travel and catering policy**. This policy must be able to consider:

- **Caring Responsibilities**

Recognise that some team members may have childcare, eldercare, or other caregiving duties.

Allow flexibility in travel modes and timing (e.g., flying instead of multi-day train travel if needed).

- **Disability and Accessibility**

Ensure travel options accommodate physical, sensory, and cognitive disabilities.

Provide accessible booking processes and support for mobility aids or assistance.

- **Geographic Inequities**

Acknowledge that island or remote-based colleagues (e.g. Orkney) may have fewer low-carbon travel options.

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, avoid mandating it exclusively.

Based on these findings, a **travel and catering hierarchy** was developed to encourage sustainable choices while allowing exceptions, acknowledging that sustainability goals must be balanced with EDI needs.

# Sustainable Travel Hierarchy

---

## Tier 1: Avoid Travel Where Possible

- **Virtual engagement is the default:** Use online meetings, webinars, and hybrid events unless physical presence is essential. Ensure virtual platforms are accessible (e.g., captions, screen reader compatibility, multilingual support).
- **Assess necessity:** Ask “Is this travel essential for project delivery, stakeholder engagement, or impact?”
- **Embed digital-first culture:** Normalize virtual participation in conferences, workshops, and collaborations. Virtual formats may empower participation from those with caring responsibilities, disabilities, or financial constraints.

## Tier 2: Substitute with Lower-Carbon Alternatives

- **Rail over air:** For journeys under 6 hours, rail should be the norm, but allow flexibility for those with accessibility needs or personal circumstances (e.g., caring needs).
- **Public transport over private vehicles:** Prioritize buses, trams, and shared transport options. If using private vehicles, prioritise the use/hire of EVs or hybrid vehicles.
- **Active travel:** Encourage walking or cycling for local engagements, with consideration for physical ability and safety.

## Tier 3: Optimize Unavoidable Travel

- **Combine trips:** Reduce frequency by bundling engagements, while respecting individual capacity and wellbeing.
- **Economy class over premium:** Avoid First/Business Class unless justified by policy (e.g., accessibility needs).
- **Carbon-conscious planning:** Choose direct routes, low-emission carriers, and sustainable accommodation.
- **Sustainable accommodation:**
  - Choose hotels with environmental certifications (e.g., Green Key, EarthCheck).
  - Prioritize locally owned or cooperative accommodations that support community development.
  - Ensure accessibility features are available and clearly communicated.
- **Sustainable food choices:**
  - Opt for plant-based or low-carbon meals when available.

- Support local, seasonal, and ethically sourced food providers.
- Respect dietary, cultural, and religious food requirements.

#### **Tier 4: Offset and Monitor**

- **Carbon tracking:** Record emissions from all project-related travel.
- **Offset schemes:** Where travel is unavoidable, and where financially feasible, use verified carbon offset programs.
- **Annual review:** Evaluate travel patterns and adjust practices to meet sustainability targets.