



# Methodology: Calculation Guidelines for an Individuals Daily Carbon Emissions from Food

May 2023

## Executive Summary

Accommodation, Catering and Events (ACE) utilises new functionality within the Saffron Wellbeing Portal to provide Carbon Emission values for food items across its outlets.

To support informed decisions within our staff, student and visitor population, this paper outlines the methodology used to calculate an individual's daily carbon emissions from food, therefore providing some context to the carbon emission figures displayed in the portal.

This report was developed by the University's Department of Social Responsibility and Sustainability and outlines the methodology used. This report outlines a 3-step process which determines that, in order to align to the Science Based Target Initiative (SBTi) 2030 targets, the daily carbon emissions from food for an individual is 1.25kg, which equates to 8.75kg per person, per week.

## Background

The University's Good Food Policy sets out our approach to supporting food systems that are environmentally, socially and economically sustainable across five key themes: Sourcing; Provision; Practice; Learning, Teaching and Research; and Leadership and Culture. The actions set out within these themes overlap across the three pillars of sustainability. Within the "Practice" theme, we look to support staff, students and visitors to the University to make informed choices when purchasing from our catering outlets and bars, and through Delivered Hospitality and Conferencing & Events.

As part of this, the University provides [Carbon Emission values for food items across a growing number of outlets](#) utilising new functionality within the Saffron Wellbeing Portals for each part of the business.

Conferencing and Events will soon have this functionality available online and they aim to have carbon emission data on menu items, on public display at catering stations, from summer 2023. ACE are therefore looking to provide guidance figures for how these menu items impact an individual's daily carbon emission.

The University's Department of Social Responsibility and Sustainability (SRS) was asked to develop the guidance for these figures that will add context to the information available online and align with the University's climate strategy. This paper outlines the methodology undertaken to calculate these guidance figures.



## Methodology

### Overview

A process chart for the methodology is displayed in Figure 1. Annual carbon emission per person (UK) are used to estimate an individual's daily emissions (Step 1). The average proportion of emissions is then used to estimate the proportion of this carbon from food (Step 2). The final step (step 3) calculates daily food emissions against Science Based targets (SBTi).

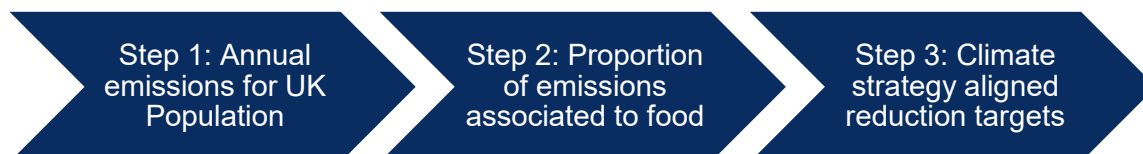


Figure 1. Process diagram for methodology utilised in this report to calculate the carbon emissions allocated to an individual's meal within the University's Conferencing and Event menus, in order to support informed choice.

### Step 1: Annual emissions for UK population

The annual emissions, per capita, in the UK is estimate at 5.15 Tonnes CO<sub>2</sub>e per person ([Global Carbon Analyst](#)). This amounts to 14.1kg CO<sub>2</sub>e per day.

### Step 2: Proportion of daily carbon from food

[Ivanova and Wood \(2020\)](#) calculate that food represented between 11.3% and 17.5% (with an average value of 15.6%) of a UK households carbon emissions. This report utilised the average value from Ivanova and Wood's study.

As such, the daily amount of carbon emissions allocated to food is 2.2 kg CO<sub>2</sub>e (or 15.4 kg CO<sub>2</sub>e weekly).

### Step 3: Reduction targets aligned to the University's Climate Strategy

The University Climate Strategy outlines our target to become net zero by 2040. At present these targets do not include Scope 3 emissions such as emissions from goods and services procured by the University (including food). Instead, SBTi's [Science-Based Targets](#) provide organisations with a clearly-defined path to reduce emissions in line with the Paris Agreement goal to stay within 1.5 °C of global warming. In order to achieve this target, it requires a 43% reduction in emissions by 2030, and 90% reduction by 2050 (compared to the 2020 baseline year).

Therefore, SBTi aligned targets for daily carbon emission from an individual's food are:

**2030:** 1.25 kg CO<sub>2</sub>e (8.75 kg CO<sub>2</sub>e weekly) | **2050:** 0.22 kg CO<sub>2</sub>e (1.5 kg CO<sub>2</sub>e weekly)

This report recommends that, at present, the 2030 figures are provided as guidelines within the University menus.

## Recommended carbon emissions guidelines for menus

The calculations set out above lead to a daily carbon emission for menus to be set at 1.25kg CO<sub>2</sub>e (or 8.75 kg CO<sub>2</sub>e per week) in order to achieve the SBTi carbon reduction targets for 2030.