Carbon Accounting Methodology

King's College London

Introduction

This document covers the methodology used to calculate carbon emissions resulting from activities at King's College London. We are dedicated to transparent and robust reporting and this document supplements our reporting both internally and externally to enable our community to better understand the sources of our emissions and the methodologies used in our calculations.

Standardised Carbon Emissions Framework

Carbon emissions reporting at King's is aligned to the Standardised Carbon Emissions Framework (SCEF), which, drawing from the Greenhouse Gas (GHG) Protocol, endeavors to standardise GHG emissions reporting for the FE & HE sectors by signposting institutions to good practice, guidance and methodologies. Find out more about the SCEF Framework.

An audit was conducted at King's during the 2024-25 academic year to assess alignment to the framework alongside data quality, resulting in a restatement of historical emissions in our reporting where appropriate[1]. The SCEF offers a range of methodology levels from Basic to Advanced and in tables 1 and 2 in this document the current methodology used is specified per reporting category. Where appropriate, King's will endeavor to move towards advanced level reporting for all categories.

Carbon emissions calculations

As per the GHG Protocol, the general methodology for calculating carbon emissions is to multiply activity data (for example miles travelled, kWh used) by an emissions factor. More information on the emissions factors currently used by King's can be found in the next section but as a general definition, emissions factors use a range of data sources to model and estimate the carbon intensity of activities, e.g. Tonnes CO2e/kWh of energy produced. Of course, macroeconomic factors are constantly impacting the input data used in these models, and so organisations modelling emissions factors look to update them annually, or as regularly as is feasible.

[1]The GHG Protocol offers a number of conditions under which baseline emissions can be recalculated, including changes in calculation methodologies or improvements to data accuracy (re-baselining). Restatement can cover any year but typically not the baseline year and can be beneficial to obtain a more accurate representation of trends.

Emissions Factors

For carbon emissions reporting at King's, emissions factors are currently sourced from the UK government unless otherwise specified. Emissions factors for most activities are updated annually or periodically to reflect the latest UK evidence available, and are published in an open-source database. At King's we use the 'majority approach', selecting the emissions factor for the calendar year into which the majority of our academic year falls. The Department for Energy Security and Net Zero (DESNZ) release an annual methodology paper that includes information on how emissions factors are derived and the frequency at which they are updated. The papers can be found on the government website alongside the emissions factor updates.

For Scope 3 - Category 1A Purchased Goods & Services, carbon emissions are calculated currently at King's by multiplying our procurement spend by spend-based emissions factors.

These emissions factors are currently accessed via the HESCET tool, designed to support organisations to build an indicative picture of supply chain emissions based on procurement spend data. These emissions factors are based on economic modelling but currently do not account for inflation. As such, at King's we are currently opting to use the most recent factors for all years back to the baseline year (2018/19), to enable better observation of progress.

HESA Estates Management Record (EMR)

Each year King's completes a return to the Higher Education Statistics Agency (HESA) to satisfy the reporting requirements of the Estates Management Record (EMR). EMR reporting is in line with HESA's data specification and so differences may be apparent between this and the voluntary SCEF reporting which covers a broader range of categories, particularly for Scope 3.

Scope 1 and 2 emissions methodologies

Overview

Scope 1 and 2 emissions account for direct emissions from sources owned or controlled by King's alongside indirect emissions from the generation of purchased energy (electricity, heat and steam).

Table 1: Scope 1 and 2 categories

Scope 1	1 Natural gas	SCEF methodology level: **Advanced** Description: Metering data is collected for combustion of natural gas in on-site boilers and combined heat and power (CHP) assets, including in buildings leased by King's that are under our operational control. Data: **Natural Gas consumption (kWh)** EF: **Natural Gas – Gross CV (kWh)**
	2 Fleet	SCEF methodology level: **Intermediate - Advanced** Description: Fuel combusted in vehicles owned or leased by King's. Data provided by the teams operating these vehicles and the leasing company. Data: **Fuel consumption (litres)** EF: **Fuel-specific (litres);** **Average van by fuel type (distance travelled)**
	3A Refrigerants & research-based F-gas	SCEF methodology level: **Advanced** Description: Emissions from leakage of refrigerants, across all buildings under operational control. Data provided by King's asset management provider. Data: **Quantity of refrigerants lost** (by refrigerant type) using top-up gas data from maintenance reports. EF: **Refrigerant specific**
	4 Other fuels	SCEF methodology level: **Advanced** Description: Fuel combusted in on-site boilers and generators in all buildings. This includes buildings leased by King's that are under our operational control. Data: **Fuel consumption (litres)** EF: **Fuel-specific (litres)**

Scope 2	1A Purchased electricity	SCEF methodology level: **Advanced** Description: Generation of purchased electricity consumed by the organisation. This includes buildings leased by King's that are under our operational control. Data: **Electricity consumption (kWh)** EF: Location-based - **UK Electricity (kWh);** Market-based – **Supplier energy mix (kWh)**
	2 Purchased heat and steam	SCEF methodology level: **Intermediate** Description: District heating purchased or otherwise brought into the organisational boundary of the reporting institution. This includes buildings leased by King's that are under our operational control. Data: **Heat and steam consumption (kWh)** EF: Location-based – **On-site heat and steam (kWh)**

Scope 3 emissions methodologies

Overview

Scope 3 includes all other indirect emissions that occur within the King's value chain, including waste disposal, purchased goods and services, business travel and other categories detailed below.

Table 2: Scope 3 categories

1A Purchased goods & services	SCEF methodology level: **Basic** Description: Upstream (supply chain) emissions of goods and services purchased by the organisation. King's currently uses the HESCET tool to account for supply chain emissions, which accounts for: - Category 1 Operational expenditure (OPEX); - Category 2 Capital Goods (CAPEX); - Category 4 Upstream transport to site of goods paid for by the institution. Data: **Procurement spend (£)**, excluding spend reported in other categories (e.g. business travel). EF: **Spend-based (£)**, inbuilt into HESCET tool. 2023-24 factors currently applied to all years from 2018/19 onwards (see Emissions Factors notes above).
1B Purchased water	SCEF methodology level: **Intermediate**

	Description: Supply of water purchased by the organisation. Data: **Fresh water supply volume (m3)** EF: **Freshwater – national (m3)**
3 Fuel and energy-related activities	SCEF methodology level: **Advanced** Description: Upstream (supply chain) emissions associated with fuels and energy in Scope 1 & 2; relating to extraction, production, and transportation. Data: **Energy consumption** (natural gas, fuels, electricity, heat and steam) from Scope 1 & 2 – kWh, litres as reported. EF: **Well-to-tank (WTT) specific** for fuel/electricity (kWh, litres); **Transport and distribution (T&D) losses** for electricity, steam and heat (kWh).
5A Waste generated in operations	SCEF methodology level: **Advanced** Description: Disposal of waste generated by the organisation. Data: **Waste contractor reports (tonnes)** for different waste streams and treatment routes. EF: **Material and disposal method specific (tonnes)**
5B Wastewater	SCEF methodology level: **Basic** Description: Disposal of wastewater by the organisation. Data: **Fresh water supply volume (m3)**, assume 95% to waste. EF: **Wastewater – national (m3)**
6 Business travel	SCEF methodology level: **Various** (Basic – Advanced) Description: Emissions associated with transportation of employees for business travel purposes. Operation of leased transport is included in other reporting categories. Data: **Distance travelled by transport mode (km)** where available, with additional categories for class and haul for flights; **Fuel purchased (litres)** for car hire; **Average carbon intensity (t/£)** for identifiable journeys used to estimate emissions where distance unavailable. EF: **Average passenger – distance (km)** by class/haul; **Average car – distance (km)** or **fuel-specific (litres).**
7B Employee homeworking	SCEF methodology level: **Basic** Description: Emissions associated with staff remote working. Data: **Staff headcount, FTE and average footfall** used to estimate daily work-from-home FTE (hours).

	EF: **FTE working hour**
9D Student accommodation (third party, location-based)	SCEF methodology level: **Basic** Description: Emissions resulting from energy consumption in outsourced student accommodation. Data: **Energy consumptio**n (electricity, gas, heat and steam) **per occupant** (kWh). EF: **Utility-specific consumption** (kWh)

Categories out of scope

Table 3: Data currently unavailable

Activity data for the below categories is currently unavailable, partially available or under review. For those categories under review, these will be restated and incorporated into King's carbon footprint as soon as possible.

Scope	Category	Comment
1	3B VOC	Data currently unavailable
2	1B Electricity from renewables	Data currently unavailable
3	6 Business travel	Accommodation data currently unavailable
	7A Employee commuting	Methodology under review
	9B Student commuting	Methodology under review
	9C Student end-of-term travel	Methodology under review
	9D Student accommodation (outsourced)	Partial data available
	13 Downstream leased assets	Data currently unavailable
	15 Investments	Data currently unavailable

Table 4: Categories out of scope

The below categories are currently out of scope for carbon emissions reporting at King's, including some areas where data is currently included in other categories, as stipulated below.

Scope	Category	Comment
1	5 Land-related emissions & livestock	Not applicable
3	2 Capital Goods	Currently included in Scope 3, Category 1
	4 Upstream transport and distribution	Currently included in Scope 3, Category 1
	8 Upstream leased assets	Currently included in Scope 1 & 2

	9A Downstream transport and distribution	Not applicable
	10 Processing of sold products	Not applicable
	11 Use of sold products	Not applicable
	12 End-of-life treatment of sold products	Not applicable
	14 Franchises	Not applicable

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