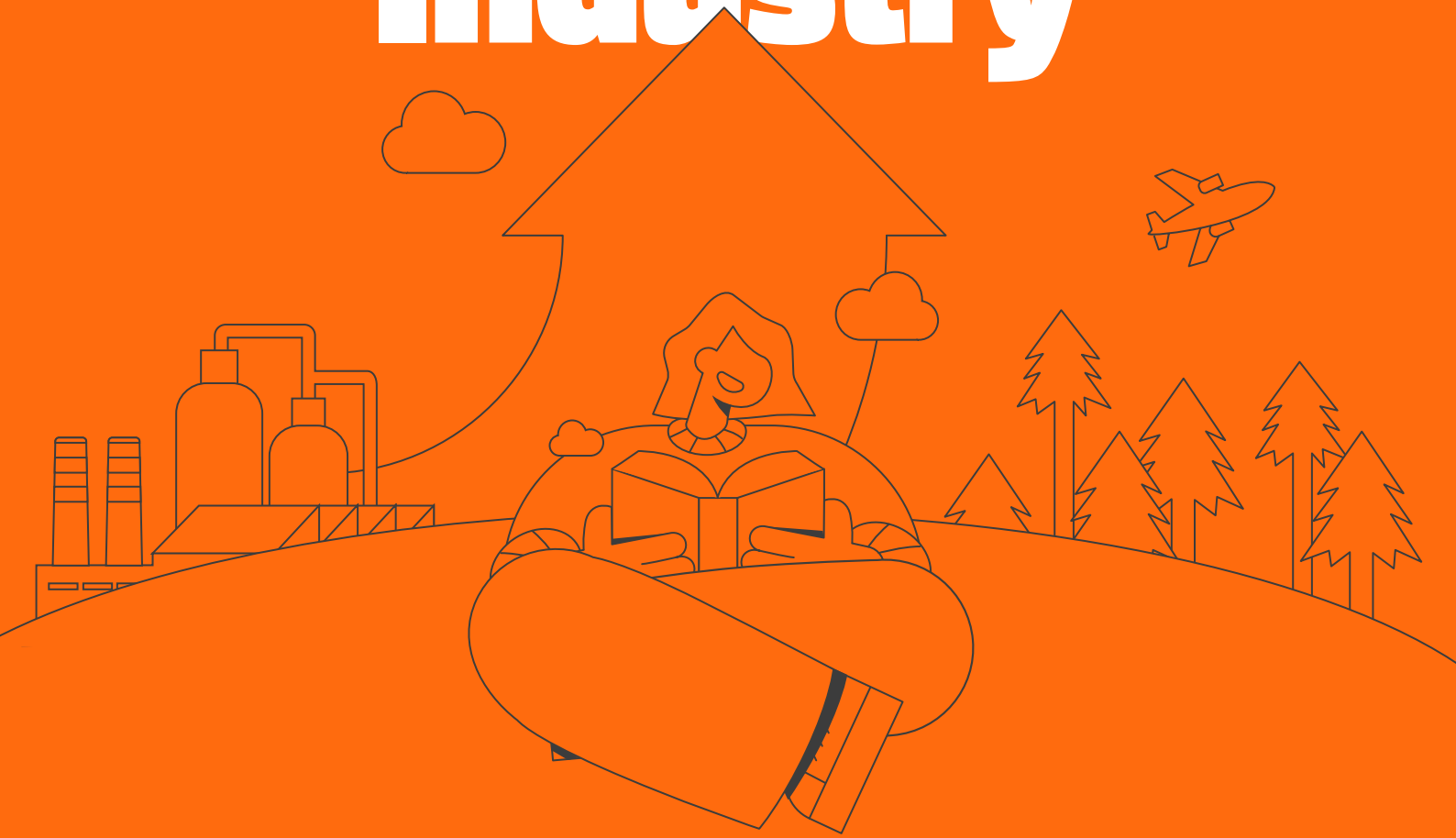
The Book Chain Project

Scope 1, 2 & 3 GHG Emissions Calculation: Guidance for the Publishing Industry



About the Book Chain Project

The Book Chain Project is a collaboration of over 25 publishers, 270 paper mill groups and 470 supplier groups (predominantly printers) to make the supply chains of printed books and journals more sustainable. It started life in 2006, partly in response to the Greenpeace report *'The Paper Trail'* which shone a light on the potential impacts of the publishing industry on global deforestation. Together, we built relationships with paper mills to gather tree species and country of origin data for each fibre used in every brand of paper and board. We also developed a risk tool and a grading system to assess deforestation risk.

Since then, our work has expanded into three workstreams:

Chemicals & Materials, where we gather and screen Bills of Materials against chemical safety legislation, support publishers to design for sustainability and make better material choices, including alternatives such as plastics and soy-based inks.

Forest Sourcing, where we engage with paper mills around forest sources, environmental performance, and responsible sourcing, covering forestry, trade, biodiversity and species risks.

Labour & Environment, where we engage with tier 1 suppliers (mainly printers) around social audits, environmental performance, and specific topics such as responsible recruitment and Health & Safety.

Publishers use the Book Chain Project to make informed buying decisions.

Carnstone

PART OF SLR

Carnstone is a management consultancy specialising in ESG and sustainability, working as part of SLR Consulting. Rooted in a sound technical and commercial understanding, we provide advice and support to large companies, international organisations and NGOs from offices in London and Shanghai. Carnstone works with around a fifth of the FTSE 100. We created the Book Chain Project and have run it since the inception of the Forest Sourcing workstream in 2006, next to working with many publishing houses one-on-one.

Contents

Introduction

Businesses are increasingly being requested to measure, manage, and reduce their impacts on the climate and the environment.

Under the Greenhouse Gas Protocol Corporate Standard, GHG emissions are classified into three different scopes:

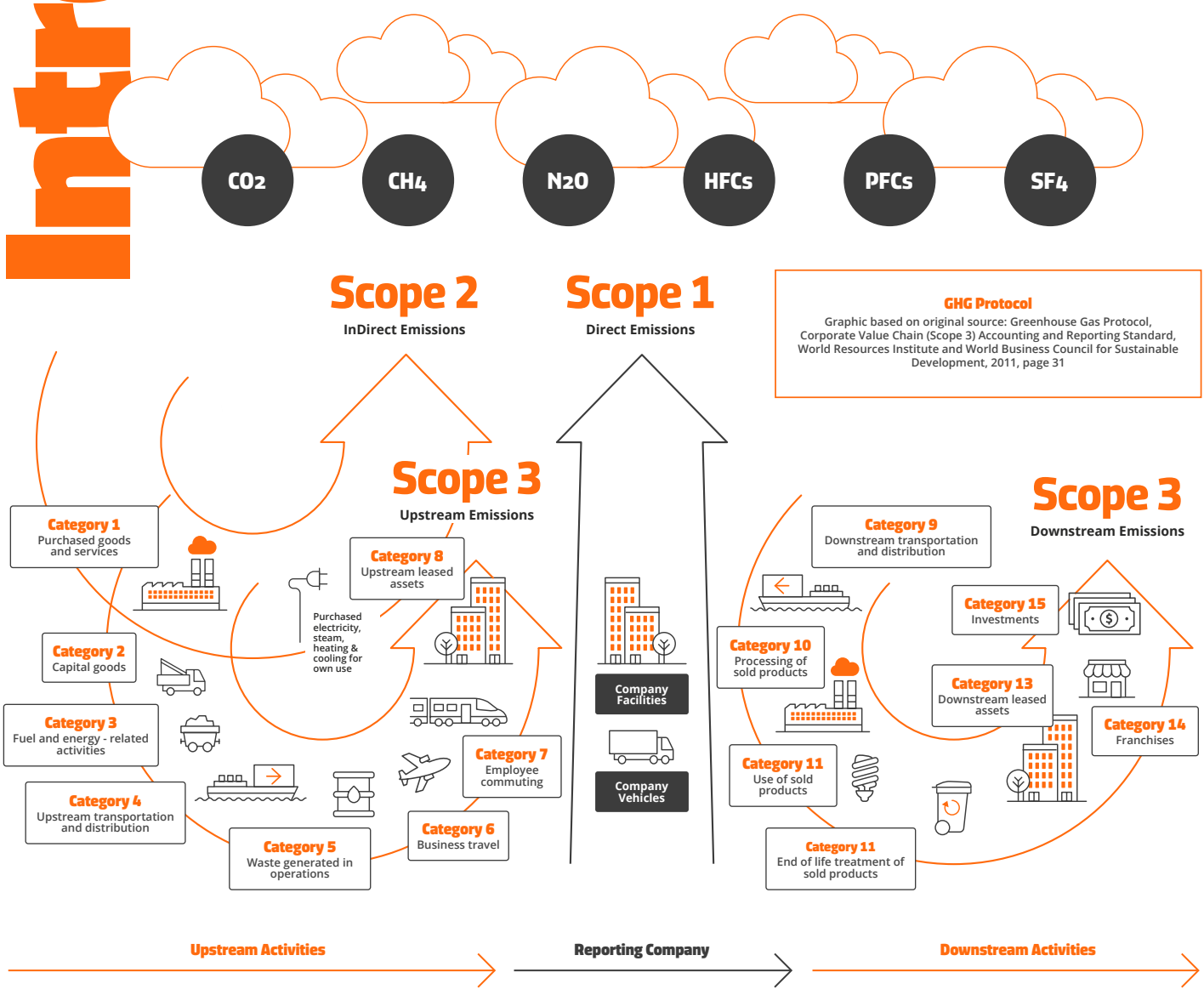
Scope 1
emissions are **direct emissions** from owned or controlled sources.

Scope 2
are **indirect emissions** from the generation of purchased energy.

Scope 3
emissions include all other **indirect emissions** that occur in a company's value chain, **upstream** or **downstream** from its own operations, divided into 15 different business activities.

Having transparency over GHG emissions is a vital step in reducing negative environmental impacts, however, this can be challenging, particularly for scope 3 emissions, as it relies on gathering data from those in the supply chain, including paper mills and print suppliers.

It is expected that scope 1 and 2 emissions represent a small share of publishers' total value chain emissions. Commonly, the biggest source of GHG emissions for publishers is related to paper which often represents 50-80% of the total carbon footprint across scope 1-3. This is mainly driven by high energy use within the pulping process.



The primary aim of this document is to provide consistent guidance for publishers to calculate GHG emissions in their own operations and upstream and downstream value chains. It provides methodologies consistent with recommendations from the GHG Protocol for calculating emissions which are tailored for each different category. The methodologies have been structured so that both companies just getting started, as well as those more advanced in their calculation and measurement capabilities, will find them useful and accessible.

One of the first things for a company to consider when calculating its carbon emissions is to set out the organisational boundaries of the carbon footprint. This will provide a better understanding of what to measure within the operations of a company.

There are two approaches to organisational boundaries:

1 Equity share approach

With this approach, a business takes proportional responsibility for anything it owns. This is done by calculating the entity's emissions and then accounting for this by multiplying it by the % ownership.

2 Control approach

Here, a business will measure and include the emissions of any entity that it has control over. Under the control approach, there are two distinctions, according to the GHG Protocol Corporate Standard:

- **Financial control:** *"The company has financial control over the operation if the former has the ability to direct the financial and operating policies of the latter with a view to gaining economic benefits from its activities."*
- **Operational control:** *"A company has operational control over an operation if it, or one of its subsidiaries, has the full authority to introduce and implement its operating policies at the operation."*

It is up to individual companies to choose an organisational boundary that is appropriate to their business. The GHG Protocol Corporate Standard provides more information about the selection of organisational boundaries.

This document was developed by the Book Chain Project (BCP). The Book Chain Project is a collaboration of over 25 publishers, 270 paper mill groups and 470 supplier groups (predominantly printers)) to make the supply chains of printed books and journals more sustainable.

The following sections provide specific GHG emission calculation guidance split by scope, and for scope 3, split by the 15 categories of the GHG Protocol Corporate Value Chain (scope 3) Standard and Guidance.

Emission Factors

There is a varied range of sources of GHG emission factors.

Some are publicly available for free, such as those published by national governments, while others are offered on a commercial basis. A list of emission factor providers can be found in Appendix B. Please note that this is not an exhaustive list.

In this guidance, we have specified some emission factors which are used in example calculations, and these are clearly highlighted. In all cases, these are UK-based emission factors produced by the UK Government to ensure a consistent approach. Companies with operations in other countries may find it more appropriate to use emission factors specific to those countries.

Within emission factor datasets there will likely be multiple emission factors available, and it may not always be clear which one to select. We have outlined the most suitable emission factors for the most common types of activity:

- To ensure calculations are capturing all GHG emissions, companies should select the emission factor which indicates **total CO_2 equivalent (CO_2e)**. This means GHGs other than CO_2 are included, most notably methane (CH_4) and nitrogen dioxide (NO_2).
- When selecting emission factors for fuels, companies should select Gross Calorific Value (CV) as it accounts for the total amount of heat released when a fuel is burned.
- When selecting emission factors for petrol or diesel, companies should select **average biofuel blend** as this is representative of fuel bought at filling stations.
- When selecting emission factors for refrigerants, we recommend selecting **Total emissions including non-Kyoto products** as this will include all GHGs.
- When selecting emission factors for air travel, companies should select emission factors which include radiative forcing (RF). This is because emissions from aviation have both direct (CO_2, CH_4 and N_2O) and indirect (non-CO_2 emissions e.g., water vapour and contrails) climate change effects.

It is up to individual companies to choose the emissions factors most appropriate to their business, particularly if they are following more advanced methods of calculations. In all cases, the source of emissions factors should be clearly and transparently reported alongside the calculation of emissions.

CO_2e

TO ENSURE CALCULATIONS ARE CAPTURING ALL GHG EMISSIONS, COMPANIES SHOULD SELECT THE EMISSION FACTOR WHICH INDICATES TOTAL CO_2 EQUIVALENT (CO_2E)

Scope 1

This category includes direct emissions produced by your business activities or the activities under your control. This typically includes the use of gas/oil boilers, fleet/ company vehicles and air-conditioning.

The calculation process for scope 1 emissions is straightforward and is a matter of attributing the relevant emission factors to the different sources of your direct emissions across all company sites.

The first step of the process is to identify the different sources of your company's direct emissions. There are four scope 1 categories to consider, however, only three are applicable to the publishing industry:

- **Stationary combustion:** These emissions come from the burning of fossil fuels and commonly come from sources such as boilers that heat buildings. The most common fuels include natural gas, fuel oil, propane and liquified petroleum gas (LPG).
- **Mobile combustion:** These emissions come from the burning of fuel in all vehicles that are owned or leased by your business. You should think of cars, vans or HGVs that are fuelled by petrol or diesel. This category does not include transport that is outsourced to third parties (this sits within scope 3). Note that electric vehicles and plug-in hybrids will fall into scope 2 as they are powered by electricity.
- **Fugitive emissions:** These emissions are unintentional releases or leaks of greenhouse gases, such as refrigerant gases or gases from air-conditioning units.

Once the relevant sources have been identified, the next step is to collect the activity data. It is important that you collect data from all properties or sites, which for publishers will often include offices and warehouses.

For each property or site, you should collect the following information which will enable you to use proxy data if actual activity data is unavailable:

- Floor space (SQM)
- Headcount
- Property sub-type e.g., office, warehouse etc

To calculate emissions from **stationary combustion** sources, you will need:

- Total fossil fuel consumption over the reporting year e.g., 50,000 kWh of natural gas. This information can be found on utility bills.

To calculate emissions from **mobile combustion** sources (e.g., company cars), you will need:

- Total fuel consumption (Liters) by vehicle type e.g., petrol cars, diesel cars, petrol vans, diesel vans etc. If this information is not available, you should collect vehicle mileage, by fuel and vehicle type. As a last resort, you can collect spend data on the total amount of fuel purchased.

To calculate emissions from **fugitive sources**, you will need either:

- Equipment type: actual volume of refrigerant charged in reporting year; actual volume disposed in the reporting year by refrigerant gas; installation or decommission of equipment in the reporting year.

OR

- Equipment type, number of equipment, gas type; installation or decommission of equipment in the reporting year.

Data collection tips:

- **Unit Measurement:** When data is being collected, you should ensure that units are consistent. E.g., all natural gas data is in kWh or fuel oil is in Litres. If there are any discrepancies, perform any conversions required.
- **Data availability:** GHG emission calculations are performed on a yearly basis. Where 12-month data is not available, the available figures need to be prorated to 12 months. When pro-rating, best practice is to ensure that the actual data is representative of the full year. For example, for energy consumption ensure that winter months are included. E.g., if you report on an annual basis and data is not available for November and December, instead of pro-rating you could include actual data from the previous year's November and December months.

Once the information on direct emission sources has been collected and consolidated, it is then a case of applying the appropriate emission factor.

The calculation for scope 1 emissions is:

[Emissions from scope 1, tCO_2e] =

[Activity data, (unit of measurement could be kWh or Liters)]

X

[Emission Factor, Kg CO_2e/ unit of measurement] / 1,000

Example

A publisher, based in the UK, has two offices. They gather the total natural gas consumption for heating (80,000 kWh) from all properties using gas bills within the reporting year. They take their natural gas consumption (80,000 kWh) and multiply it by the relevant emission factor for natural gas (Gross CV) from DEFRA (0.18) which equals 14,400 $KgCO_2e$. To get to tonnes CO_2e, the publisher divides the total by 1000 and so the scope 1 stationary combustion emissions are **14.4 tCO_2e**.

The publisher also has seven petrol company cars. They gather the total number of Liters of petrol bought for all 7 cars over the reporting year (25,000 L). They take their petrol consumption (25,000 L) and multiply it by the relevant emission factor for Petrol (average biofuel blend) (Liters) from DEFRA (2.10) which equals 52,500 $KgCO_2e$. To get to tonnes CO_2e, the publisher divides the total by 1000 and so the scope 1 mobile combustion emissions are **52.5 tCO_2e**.

The publisher has identified four air conditioning units that were re-gassed once during the reporting year. From the service records, they identify the type of refrigerant (R410A), and the total capacity of all units (120kg). The publisher also knows the units were not installed or decommissioned during the reporting year. The publisher uses the DEFRA Environment Reporting Guidelines to calculate gas losses through operation (6%). Therefore, the total gas lost over the reporting year is 7.2kg (120 x 0.6 / 100). The publisher then selects the appropriate emission factor for R410A from DEFRA (1130) and multiplies it by the total gases lost (7.2), which equals 8,136 Kg CO_2e. To get to tonnes CO_2e, the publisher divides the total by 1000 and so the scope 1 fugitive emissions are **8.1 tCO_2e**.

Thus, the total scope 1 emission are 14.4 tCO_2e + 52.5 tCO_2e + 8.1 tCO_2e = 75 tCO_2e

Scope 2

This category includes indirect emissions that originate from the purchasing of energy, typically electricity, but also purchased heat, steam, and cooling.

There are two primary methods to reporting scope 2 emissions:

The location-based method: This approach calculates emissions based on the average intensity of grids where the reporting company's energy consumption occur. This is a more straightforward methodology, however, it's unable to capture the impact of company specific energy procurement.

The market-based method: This approach reflects emissions from electricity that companies have purposefully chosen through contracts for purchase of electricity. This method is more commonly used if the reporting company is purchasing renewable energy, as it accounts for the impact of company specific energy procurement.

The GHG Protocol Corporate Standard states that companies should always report according to the location-based method but may also report according to the market-based method.

The calculation process is relatively similar between the two accounting methods; however, the market-based method requires supplier specific emissions factors.

The first step is to understand the sources of scope 2 emissions. Scope 2 emissions come from multiple sources, however purchased electricity is the most common. Potential sources of electricity for publishers may include office lighting, hardware, such as computers and printers, and may also include any on-site electric vehicle charging points. The reporting company may also purchase heat, steam or cooling which may be associated with heaters, air conditioners or chilled water.

The calculation for scope 2 emissions is:

$$[\text{Emissions from scope 2, } tCO_2e] = [\text{Activity data, kWh}] \times [\text{Emission Factor, kWh } CO_2e] / 1{,}000$$

The next step is to gather information on how much electricity, heat, steam, and cooling has been purchased over the reporting period. This information can usually be gathered from utility bills, invoices, or meter readings and is usually specified in MWh or kWh. If the reporting company is purchasing renewable electricity, this information should be specified within energy contracts or on energy certificates.

Example

A publisher based in the UK and has gathered the total electricity consumption (210,000 kWh) from all properties using electricity bills within the reporting year. They have decided to only report a location-based figure and so they choose to use the electricity emission factor for the UK (0.207074) (conversion factor 2023 – UK electricity).

They take their electricity consumption (210,000 kWh) and multiply it by the emission factor (0.207074) which equals 43,486 $KgCO_2e$. To get to tonnes CO_2e, the publisher divides the total by 1000 and so the total scope 2 emissions are **43.5 tCO_2e**.

Once the information on energy consumption has been collected, it is then a case of applying the appropriate emission factor. If the reporting company is following the location-based reporting method, the emission factor used will be linked to the average intensity of the grid in the location where the electricity is consumed, usually at country-level. However, if the reporting company is following the market-based reporting method, they will need to obtain custom emissions factors from the energy provider.

It is important to use actual data where possible, however, where the reporting company is unable to access actual data, proxy data may be used. Proxy data can be calculated by creating an intensity factor from the activity data that is available. This can be done a number of ways, including headcount and square footage.

The calculation is as follows:

Electricity consumption intensity factor, kWh =

[SUM of Activity data, kWh]

×

[SUM of Headcount] OR [SUM of Sqft]

Electricity emissions proxy data calculation, tCO_2e =

[Electricity intensity factor]

×

[Headcount] OR [Sqft]

×

[Emission Factor, kWh CO_2e] / 1,000

If the reporting company has employees working within a shared office space, such as a WeWork for example, these emissions would need to be captured in scope 3 category 8 – Upstream leased assets as the reporting company will not have control over the energy usage within these sites.

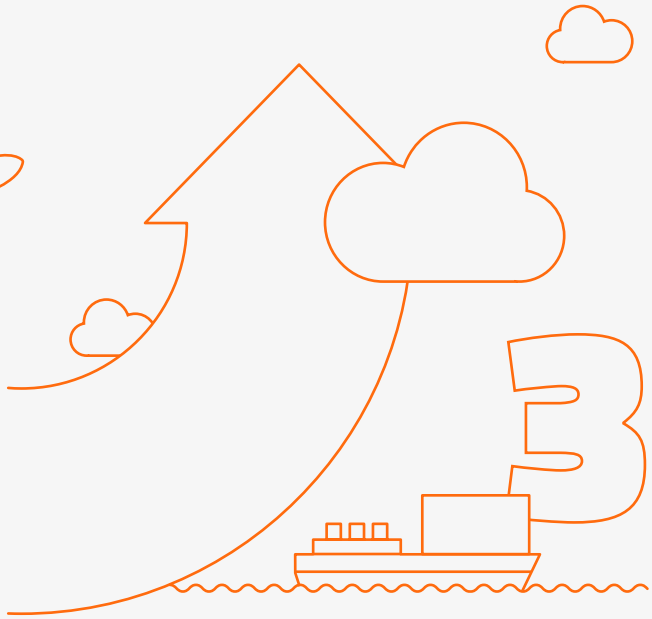
Example

A publisher is wanting to calculate their scope 2 emissions, however they are only able to collect consumption data from 9 out of 10 properties. The publisher can use proxy data to estimate the emissions from the 10th property, however they first need to create an electricity consumption intensity factor.

To do this, the publisher adds up the total electricity consumption from across the 9 properties which equals **650,000 kWh**. The publisher also adds up the total head count of the properties which comes to **789**.
To calculate the intensity factor, the publisher divides the total electricity consumption (650,000 kWh) by total head count (789). This gives the intensity factor of **823.82 kWh** per employee.

The publisher then takes the intensity factor of 823.82 and multiplies it by the number of employees in the office with the missing data (30) which equals **24,714 kWh**. The publisher then multiplies this figure with the chosen emission factor and divides by 1000 to get an estimate of tCO_2e for that property *(see example above)*.

Scope 3



This category includes all the other indirect emissions that occur in a company's value chain, upstream or downstream from own operations.

There are 15 categories of scope 3 emissions, which are summarised in the table below.

Scope 3	Definition
Category 1 Purchased Goods and Services	Includes all upstream cradle-to-gate emissions from the production of products or services purchased or acquired by the reporting company in the reporting year. For publishers, the most significant sources are likely to be from paper and third-party printing services.
Category 2 Capital Goods	Includes all upstream (i.e., cradle-to-gate) emissions from the production of capital goods purchased or acquired by the reporting company. Capital goods are final products that have an extended life and are used by the company to manufacture a product, provide a service, or sell, store, and deliver merchandise. For publishers, the most significant sources are likely to be from office and IT equipment.
Category 3 Fuel and Energy - Related Activities	Includes the emissions of the extraction, production and transportation of fuels and energy purchased by the reporting company in the reporting year. For publishers, the most significant source is likely to be from purchased electricity related emissions.
Category 4 Upstream Transportation and Distribution	Includes emissions from the transportation and distribution of products purchased by the reporting company in vehicles/facilities not owned or operated by the reporting company. For publishers, the most significant source is likely to be from warehousing and freight shipping.
Category 5 Waste Generated in Operations	Includes emissions from third-party disposal and treatment of waste that is generated in the company's owned or controlled operations. This category includes emissions from disposal of both solid waste and wastewater. Only waste treatment in facilities owned or operated by third parties is included in scope 3. For publishers, the emissions from this category are likely to be small, comprising of office and warehouse waste and the treatment of book returns.
Category 6 Business Travel	Includes emissions from the transportation of employees for business-related activities in vehicles owned or operated by third parties, such as aircrafts, trains, buses, and passenger cars. For publishers, the most significant source of emissions is likely to be air travel.

Scope 3	Definition
Category 7 Employee Commuting 	Includes emissions from the transportation of employees between their homes and their worksites. Emissions may arise from automobile travel, bus travel, rail travel, air travel (if any) or other modes of transportation. For publishers, the significant sources of emissions will be split between homeworking and commuting, depending on the working arrangements and policies.
Category 8 Upstream Leased Assets 	Includes emissions from the operation of assets that are leased by the company and not already included in the company's scope 1 or scope 2 inventories. For publishers, this category is unlikely to be relevant.
Category 9 Downstream Transportation and Distribution 	Includes emissions from transportation and distribution of products sold by the reporting company in the reporting year, for all journeys between the company's operation and the end consumer, if not paid for by the reporting company, in vehicles and facilities not owned or controlled by the reporting company. For publishers, this category is unlikely to be relevant, as most transportation and distribution is likely to be paid for by the publisher, and therefore the emissions will be covered in category 4.
Category 10 Processing of Sold Products 	Includes emissions from processing of intermediate products by third parties (e.g., manufacturers) after sale by the reporting company. For publishers, this category is unlikely to be relevant.
Category 11 Use of Sold Products 	Includes emissions from the use of goods and services sold by the reporting company in the reporting year. Th;e scope 3 emissions from use of sold products include at least the scope 1 and 2 emissions of end users. For publishers, the most significant source will be any e-books or e-publications.
Category 12 End of Life Treatment of Sold Products 	Includes emissions from the waste disposal and the treatment of all products sold by the reporting company at the end of their life, during the reporting year. For publishers, the most significant source will be customer's disposal of books.
Category 13 Downstream Leased Assets 	This category is applicable to lessors, i.e., companies that receive payments from lessees. This category includes emissions from the operation of assets that are owned by the reporting company, acting as lessor, and leased to other entities in the reporting year that are not already included in scope 1 or scope 2. For publishers, this category is unlikely to be relevant.
Category 14 Franchises 	This category includes emissions from the operation of franchises not included in scope 1 or scope 2. A franchise is a business operating under a license to sell or distribute another company's goods or services within a certain location. For publishers, this category is unlikely to be relevant.
Category 15 Investments 	Includes emissions associated with the reporting company's investments in the reporting year, not already included in scope 1 or scope 2. Investments can include equity investments, joint ventures, and subsidiaries. This category is mostly applicable to investors, i.e. companies that make an investment with the objective of making a profit, and companies that provide financial services. For publishers, this is unlikely to be relevant or material unless they are involved in joint ventures or have considerable investments in external companies.

Scope 3 ...

Ideally, a company should calculate emissions for each of these categories that apply to its activities and value chain. However, some categories are much more relevant and significant than others, and it is important to tackle only the categories that are relevant for the reporting company. This requires a screening process to determine relevance for the business.

Approaches to determine relevance will vary by company, however in our view, there are three ways of doing this:

- Firstly, based on whether the category of emissions is relevant to the business. For example, if a business has no franchises, category 14 is not relevant.
- Secondly, based on the likely scale of GHG emissions.
- Thirdly, based on the ability the company has to influence emissions reductions of suppliers within their value chain or within their own operations.

To determine the scale of GHG emissions for the 15 categories, companies should carry out a quick calculation using the guidance provided in this calculation guide, or publicly available tools like the GHG Protocol Scope 3 Evaluator. Any screening assessment should be in alignment with the Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions.

As a starting point, there are a number of scope 3 categories which are particular hotspots for publishers. These include:

- Purchased goods and services
- Upstream transportation and distribution
- Business travel
- Employee commuting

Scope 3 data collection can appear very daunting; however, the majority of scope 3 categories can be calculated using the reporting company's spend data.

Once the initial screening has been completed, a company will likely have three groups of categories of scope 3 emissions:

Group 1 Relevant and significant categories, which are then prioritised for further refinement e.g., by gathering and integrating actual data into the calculations;

Group 2 Relevant but immaterial categories, which may be reported or excluded based on a de minimis rationale (refers to something so small, whether in monetary terms, importance, or severity, that it need not be considered; immaterial). Companies will need to set a materiality threshold in their reporting methodology, 5% is commonly used;

Group 3 Irrelevant categories, which are not calculated and disclosed as irrelevant (including a rationale why they are irrelevant).

Scope 3
Categories

Scope 3 ...

Category 1:
Purchased Goods and Services

Upstream cradle-to-gate emissions from the production of products and provision of services purchased or acquired by the reporting company in the reporting year.

This category is likely to be the largest source of emissions from your organisation, as it contains the purchase of paper products. The first step is to understand the types and amounts of goods and services purchased over the course of the reporting year. The type of information available will be different from company to company, but where possible this should in include:

- Individual good and service name
- Category and subcategory where applicable
- Supplier name and location
- The spend on the good and service purchased
- The quantity of the item purchased (this may be useful in future calculations)

Exclusions (as these are covered by other categories):

- Purchases of energy (scope 1 or 2)
- Spend on goods or services that are either already covered elsewhere (e.g., emissions from leased buildings are included in scope 1 and 2) or are not leading to emissions (e.g., tax payments to authorities).
- Purchases of capital equipment (scope 3 category 2)
- Warehousing and logistics (scope 3 category 4)
- Business travel (scope 3 category 6)

The next step is to segment this data in a way that is applicable to the method of calculation the reporting company has decided to adopt. This is likely to depend on the categorisation in your procurement process, however in the first instance, we suggest 'category level' will suffice, for example marketing & advertising or professional services. For categories which are more unique to the publishing industry or are particularly carbon intensive, such as paper, these can be broken down further into subcategories, such as: category – IT, subcategory – software, maintenance support, telecoms. This will be useful later, as it will help in selecting the appropriate emissions factor, if using secondary data, or deciding which suppliers of your goods and services to collect primary data from. We would also recommend using BCP data to assist with calculating your emissions from paper and printing services.

Using Secondary Data

We advise as a starting point, to calculate the GHG emissions relating to purchased goods and services based on spend data. Once this information has been collected it is then a case of applying the appropriate emissions factor (kg CO_2e per monetary value of spend by product category). UK-based companies can then use the UK government's emissions factor database Indirect emissions from the supply chain as it is based on UK averages for GHG emissions and provides a good range of products and service categories. However, please note that you can use any other reliable emissions factor sources and should make sure the approach is consistent. You can find a list of alternative emissions factor sources in Appendix B.

The calculation is:

$$[\text{Emissions from Goods and Services, } tCO_2e] = ([\text{Spend on Purchased Goods or Services, £}] \times [\text{Emissions Factor, } kgCO_2e \text{ per £}]) / 1{,}000$$

Example

A publisher has spent **£1,000,000** on advertising and marketing, **£700,000** on legal and professional fees and **£6,000,000** on paper and printing during the reporting year. They have broken down each category of spend into further sub-categories. The publisher uses the UK Government's conversion factors for indirect emissions from the supply chain - $KgCO_2e$ per £ spent.

Procurement Category	Procurement Sub-Category	Spend (£)	Emissions Factor Description	Emissions Factor ($kgCO_2e$ per £)	Total Emissions (tCO_2e)
Advertising & Marketing	Advertising	900,000	Advertising and market research services	0.104	93
	Market Research	100,000	Advertising and market research services	0.104	10
Legal and Professional	Legal Fees	500,000	Legal services	0.043	21
	Professional & Consulting Fees	200,000	Services of head offices; management consulting services	0.103	21
Paper and Printing	Paper	4,000,000	Paper and paper products	0.698	2,792
	Printing	2,000,000	Printing and recording services	0.418	837

As the publisher knows the spend, they need to select a relevant emission factor.

- (**0.104** $kgCO_2e$ per £ on **Advertising**)
- (**0.043** $kgCO_2e$ per £ on **Legal services**)
- (**0.103** $kgCO_2e$ per £ on **Services of head offices; management consulting services**)
- (**0.698** $kgCO_2e$ per £ on **Paper and paper products**)
- (**0.418** $kgCO_2e$ per £ on **Printing and recording services**)

To calculate the associated emissions, the publisher performs the following calculations:

- (£900,000) multiplied by the emission factor (0.104) and divided by (1,000) **93 tCO_2e**.
- (£100,000) multiplied by the emission factor (0.104) and divided by (1,000) **10 tCO_2e**.
- (£500,000) multiplied by the emission factor (0.043) and divided by (1,000) **21 tCO_2e**.
- (£200,000) multiplied by the emission factor (0.103) and divided by (1,000) **21 tCO_2e**.
- (£4,000,000) multiplied by the emission factor (0.698) and divided by (1,000) **2,792 tCO_2e**.
- (£2,000,000) multiplied by the emission factor (0.418) and divided by (1,000) **837 tCO_2e**.

They will now add all figures (93 + 10 + 21 + 21 + 2,792 + 837) together to give their total emissions Scope 3 Category 1 Purchased Goods and Services of **3,774 tCO_2e**.

Scope 3 ... Category 1

Using Primary Data

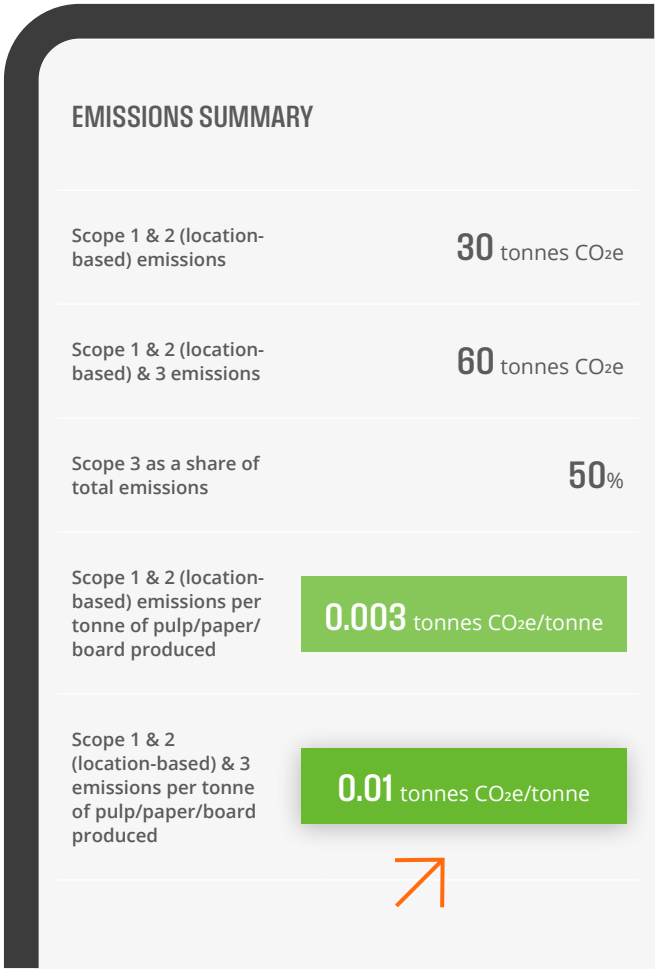
This methodology relies on information from suppliers on the GHG emissions associated with the production and supply of goods or services received. Companies should evolve their reporting to use primary data as much as possible and practicable, as otherwise the only way to reduce their reported scope 3, category 1 emissions would be to reduce spend or wait for economic sector average emission factors to decrease.

When using primary data, the figures can be used to replace any secondary data that had been previously used to calculate emissions of a category. There are two potential approaches to using primary data:

i) Calculation of supplier or product specific emissions factors

The largest source of emissions in your Purchased Goods and Services is likely to be paper and printing services, therefore using actual data to calculate this category will have the most impact. The data is readily available through the BCP database. To calculate the emissions from paper, you can follow these steps:

- Collect actual paper data from printers, including:
  - The name of the paper brand
  - The name of the mill who produced the papers
  - The mill location
  - Whether the mill is integrated, semi-integrated, or non-integrated
  - Whether the paper is chemical, or mechanical/groundwood
  - The total tonnage of paper procured
- Find those mills on the BCP database and use their scope 1, scope 2 and scope 3 emission intensity factors (kg of CO_2e per tonne of paper) from the relevant Environmental Questionnaire spanning the same reporting period, where possible.
- If there is no Environmental Questionnaire to source data, you can use the proxy emissions factor from the BCP environment report for the appropriate location and mill integration: Book Chain Project Environment Report 2020-21.



Country tonnes CO_2-equivalent (tCO_2e) per tonne paper produced (tPaper produced)	**Fully Integrated**		**Semi-integrated** (> 50% own pulp)		**Non-Integrated**	
	2020	2021	2020	2021	2020	2021
Canada	0.22	-	-	-	-	-
China	0.54	-	-	-	0.82	-
Finland	-	-	-	-	0.06	0.19
India	1.18	-	-	-	1.70	1.83
Portugal	0.32	-	-	-	-	-
United Kingdom	-	-	0.10	-	-	-
United States	0.78	-	-	-	-	-

* There is currently limited data available for the following countries: Austria, France, Germany, Indonesia, Italy, Korea (Republic), Mexico, Netherlands, Russia, Slovakia, and Sweden.

- Alternatively, another source of emission factors is to use the fossil CO_2 emissions per unit of paper from Confederation of European Paper Industries (CEPI) Ten Toes report.

Repeat this process for every paper brand you have actual data for. Once you have this data for your purchased paper, you will need to calculate its associated emissions, and the total emissions from each paper brand will be split between the mill and the printer.

It's important to note that If the printer has carried out a full Scope 3 footprint, emissions from producing the paper it has bought on the publisher's behalf should be included in its Scope 3 emissions. If possible, it's best to exclude these if actual mill data are being used, or to rely on the printer's Scope 3 and not add mill data, to avoid double-counting.

Each site type has a different emission intensity and different split of the overall footprint. The formula and example provided below were for one publisher, buying 4 paper brands.

The calculation is:

[Emissions from Paper, tCO_2e] =

[Emissions from Paper (Mill share), tCO_2e]

+

[Emissions from Paper (Printer share), tCO_2e]

[Emissions from Paper (Mill share), tCO_2e] =

([Paper volume, tonnes] x [Mill Scope 1 & 2 emission intensity factor, tCO_2e/t paper])

+

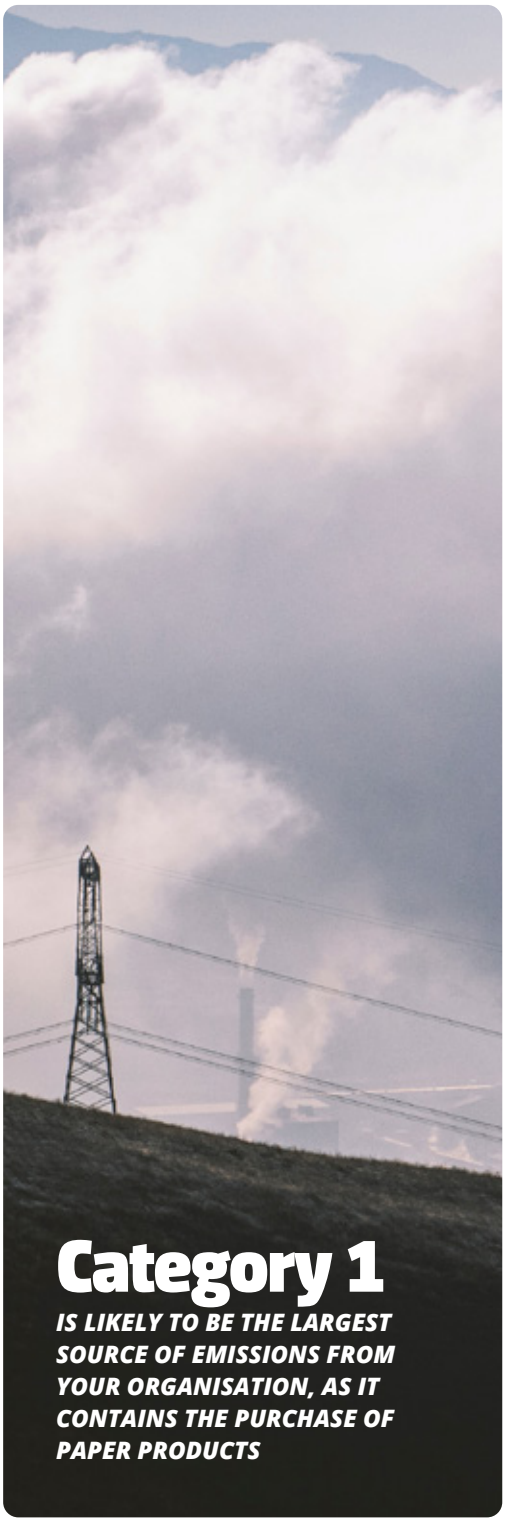
([Paper volume, tonnes] x [Mill Scope 3 emission intensity factor, tCO_2e/t paper])

[Emissions from Paper (Printer share), tCO_2e] =

([Paper volume, tonnes] x [Printer Scope 1 & 2 emission intensity factor, tCO_2e/t paper])

+

([Paper volume, tonnes] x [Printer Scope 3 emission intensity factor, tCO_2e/t paper])



Scope 3 ... Category 1

Example

A publisher has bought paper from **2 suppliers** during the reporting year, and each supplier has used **2 paper brands** from **2 mills** to print their products:

Supplier	Supplier Country	Paper Brand	Volume (tonnes)	Mill	Mill Country	Mill Integration Status
Supplier 1	China	Paper A	1,000	Mill I	China	Fully integrated
		Paper B	5,000	Mill II	Canada	Fully integrated
Supplier 2	Italy	Paper C	2,000	Mill III	Finland	Non-integrated
		Paper D	1,000	Mill IV	Austria	Semi-integrated

As the publisher knows the name of the paper brands, the supplier, and the paper mill, they will be able to search on the BCP database to find the relevant emission factor for each location or use a proxy from the Environment Report.

- Supplier 1: Scope 1+2 - **0.27 tCO_2e/t paper**. Scope 3 - **0.17 tCO_2e/t paper**
- Supplier 2: Scope 1+2 - **0.14 tCO_2e/t paper**. Scope 3 - **0.09 tCO_2e/t paper**
- Mill I: Scope 1+2 - **0.53 tCO_2e/t paper**. Scope 3 - **0.62 tCO_2e/t paper**
- Mill II: Scope 1+2 - **0.24 tCO_2e/t paper**. Scope 3 - **0.59 tCO_2e/t paper**
- Mill III: Scope 1+2 - **0.16 tCO_2e/t paper**. Scope 3 - **0.54 tCO_2e/t paper** (taken from the Environment Report)
- Mill IV: Scope 1+2 - **0.79 tCO_2e/t paper**. Scope 3 – **1.97 tCO_2e/t paper**

To calculate the associated emissions, the publisher performs the following calculations:

Mill emissions **Supplier emissions**

- Paper A: (1,000 x 0.27) + (1,000 x 0.17) + (1,000 x 0.53) + (1,000 x 0.62) = **1,590 tCO_2e**
- Paper B: (5,000 x 0.24) + (5,000 x 0.59) + (5,000 x 0.53) + (5,000 x 0.62) = **9,900 tCO_2e**
- Paper C: (2,000 x 0.16) + (2,000 x 0.54) + (2,000 x 0.14) + (2,000 x 0.09) = **1,860 tCO_2e**
- Paper D: (1,000 x 0.79) + (1,000 x 1.97) + (1,000 x 0.14) + (1,000 x 0.09) = **2,990 tCO_2e**

They will now add all figures (1,590 + 9,900 + 1,860 + 2,990) together to give their total emissions for the Print and Paper portion of Scope 3 Category 1 Purchased Goods and Services of **16,340 tCO_2e**.

ii) Calculation of supplier-specific emissions based on spend

In many cases, for other products aside from paper, it will not be possible or efficient to calculate emissions at a product level, particularly if a supplier provides a range of goods and services. In this case, it is acceptable to request the total emissions from a supplier and then pro-rate this based on spend. Put another way, this approach requires a company to understand each suppliers' total emissions and their revenue, and then assume that a proportion of this relates to their spend with that supplier.

The calculation is:

$$[\text{Emissions from Goods and Services, } tCO_2e] = \frac{[\text{Supplier emissions, tonnes}] / [\text{Supplier revenue, £}]}{\times} [\text{Company spend with supplier, £}]$$

Our recommendation

Our recommendation is that whichever approach is used, suppliers should provide:

- Emissions factors used
- Details of how emissions were calculated, and data sources used, and whether from primary or secondary source
- Description of any verification or assurance carried out. Preference should be given to verified data

Scope 3 ...

Category 2:
Capital Goods

This category refers to upstream (i.e., cradle-to-gate) emissions from the production of capital goods purchased or acquired by the reporting company. Capital goods are final products that have an extended life and are used by the company to manufacture a product, provide a service, or sell, store, and deliver merchandise.

In the publishing industry, it is far less likely that companies will be able to obtain primary data for the GHG emissions of your capital goods. Therefore, the calculation methods for category 2 (Capital goods) follow the same logic as for secondary data of category 1 (Purchased goods and services). For guidance on calculating emissions from category 2 (Capital goods), refer to the guidance in the previous section for category 1 (Purchased goods and services).

The example calculations below contain relevant emission factors for Capital Goods taken from the UK government's conversion factors for indirect emissions from the supply chain – $KgCO_2$ per £ spent.

The calculation is:

[Emissions from Goods and Services, tCO_2e] =

([Spend on Purchased Goods or Services, £]

×

[Emissions Factor, $kgCO_2e$ per £]) / 1,000

Category	Sub-category	Spend (£)	Emission Factor Description	Emission Factor (kg CO_2e per £)	Total Emissions (tCO_2e)
Fixed Assets	IT Equipment	1,000,000	Computer, electronic and optical products	0.47	470
Fixed Assets	Office Furniture and Equipment	1,000,000	Furniture	0.56	560
Intangible Assets	IT Domains and Software Licenses	1,000,000	Computer programming, consultancy and related services	0.10	100

Example

A publisher has spent **£250,000** on office computers and accessories, **£100,000** on software licenses and **£150,000** on refitting their office with new furniture during the reporting year and feels it's a significant contributor to their emissions.

As the publisher knows the spend, they need to select a relevant emission factor.

- (**0.47** $kgCO_2e$ per £ on **IT Equipment**)
- (**0.10** $kgCO_2e$ per £ on **Software Licenses**)
- (**0.56** $kgCO_2e$ per £ on **Furniture**)

To calculate the associated emissions, the publisher performs the following calculations:

- (£250,000) multiplied by the emission factor (0.47) and divided by (1,000) **117.5 tCO_2e**.
- (£100,000) multiplied by the emission factor (0.10) and divided by (1,000) **10 tCO_2e**.
- (£150,000) multiplied by the emission factor (0.56) and divided by (1,000) **84 tCO_2e**.

They will now add all three figures (117.5 + 10 + 84) together to give their total emissions scope 3 Category 2 Capital Goods of **211.5 tCO_2e**.

Category 3:
Fuel and Energy Related Activities

Extraction, production, and transportation of fuels and energy purchased or acquired by the reporting company in the reporting year, not already accounted for in scope 1 or scope 2.

This category is directly related to scope 1 and 2 emissions and therefore, data is usually readily available for these calculations. This category is only expected to make up a small proportion of a publisher's scope 3 emissions, as fuel and electricity consumption is usually moderate for publishers' offices and warehouses. More specifically, it includes emissions from four key activities outlined in the table below:

Activity	Description	Examples	Activity Data	Emission factors	Examples: UK GOV 2023 conversion factors (advanced users)
A Upstream emissions of purchased fuels	Extraction, production, and transportation of fuels consumed by the reporting company.	Mining of coal, refining of gasoline, transmission and distribution of natural gas, production of biofuels, etc	Quantities, sources and types of fuel consumed	Life cycle emission factors that exclude emissions from combustion (already accounted under scope 1)	■ WTT - fuels such as: ■ Coal (industrial): 0.05629 kg CO_2e per unit ■ Natural Gas: 0.03021 kg CO_2e per unit
B Upstream emissions of purchased electricity	This includes all upstream (cradle-to-gate) emissions of purchased fuels (from raw material extraction up to the point of, but excluding combustion)	Mining of coal, refining of fuels, extraction of natural gas, etc	Total quantities and sources of electricity, steam, heating, and cooling purchased and consumed per unit of consumption, broken down by supplier, grid region, or country	Life cycle emission factors that exclude emissions from combustion (already accounted under scope 2)	■ WTT – UK electricity (T&D): 0.00397 kg CO_2e per unit ■ WTT – Heat and steam distribution: 0.00176 kg CO_2e per unit
C Transmission and distribution (T&D) losses	Extraction, production, and transportation of fuels consumed in the generation of electricity, steam, heating, and cooling that is consumed by the reporting company.	Conductor loss, dielectric heating loss, coupling loss and metering inaccuracies etc.	Electricity, steam, heating, and cooling per unit of consumption, broken down by grid region or country.	Combustion emission factors for electricity, steam, heating and cooling	■ WTT – UK electricity (T&D): 0.00423 kg CO_2e per unit ■ WTT – district heat & steam distribution: 0.00166 kg CO_2e per unit ■ Transmission and distribution: ■ T&D- UK electricity: 0.01793 kg CO_2e per unit ■ Distribution – district heat & steam: 0.00945 kg CO_2e per unit ■ For electricity consumption outside the UK, companies can use T&D emission factors published by the International Energy Agency.
D Generation of purchased electricity that is sold to end users	Generation (upstream activities and combustion) of electricity, steam, heating, and cooling that is consumed (i.e.lost) in a T&D system	Reported by a utility company or energy retailer	Quantities and specific source (e.g., generation unit) of electricity purchased and re-sold	Specific CO_2, CH_4 and N_2O emission data for generation units from which purchased power is produced or grid average emission factor for the origin of purchased power	■ WTT – UK electricity (generation): 0.0459 kg CO_2e per unit ■ WTT – UK district heat and steam: 0.03341 kg CO_2e per unit

Scope 3 .... Category 3

For each activity, emissions can be calculated either by using the:

- **Supplier-specific method:** involves data collection directly from the relevant providers (fuel and electricity providers, power generators etc.)
- **Average-data method:** involves estimating emissions by using secondary (e.g. industry, country, grid, regional, global average) emissions factors

Because this category is likely to be small for publishers, we would suggest that fuel and energy-related activities emissions can be calculated by using the average-data method. This requires using secondary (e.g., industry average) emission factors for upstream emissions per unit of consumption and it relies on the energy consumption data gathered for the scope 1 and 2 calculations.

Please note that for electricity, the country of generation should also be recorded, in order for the relevant factor to be accounted.

For fuel

The calculation is:

[Fuel and Energy-Related Activities – Fuel, tCO_2e]

([Fuel Used, kWh])

×

[WTT Emissions Factor, Kg CO_2e per kWh] / 1,000

For electricity

The calculation is:

[Fuel and Energy-Related Activities –Electricity, tCO_2e]

([Electricity Used, kWh]))

×

[WTT Emissions Factor, Kg CO_2e per kWh] / 1,000

For electricity (T&D) losses

The calculation is:

[Fuel and Energy-Related Activities - Electricity, tCO_2e]

([Electricity Used, kWh])

×

[T&D Emissions Factor, Kg CO_2e per kWh] / 1,000

For electricity generated and re-sold

The calculation is:

[Electricity Generated and re-sold, tCO_2e]

([Electricity/steam/heating/cooling purchased for resale, kWh])

×

[electricity/steam/heat/colling Emissions Factor, Kg CO_2e per kWh] / 1,000

Example

A publisher has offices in the UK and it purchases fuels for vehicles and heating as well as electricity to run the offices. Primary data are collected directly from the providers.

By using the average-data method, and using the relevant government emission factors (conversion factors 2023 – WTT), the category 3 emissions would be the following:

Fuel Activity Data & Emission factors:

Fuel Type	Total consumption (kWh or Litres)	Emission Factors ($KgCO_2e$/kWh or Litres)/ (WTT – Fuels)
Gas	10,000 kWh	0.03021 (natural gas)
Diesel for vehicles	3,250 Litres	0.61101 (diesel average biofuel blend)

Energy Activity Data & Emission Factors:

Activity data		WTT and T&D Emission factors ($KgCO_2e$/kWh)		
Energy	**Total consumption (kWh)**	**Electricity T&D** (Transmission and distribution: T&D – UK Electricity)	**WTT Electricity T&D** (WTT – UK Electricity T&D)	**WTT Electricity Generation** (WTT – UK Electricity Generation)
Electricity	50,000	0.0179	0.00397	0.0459

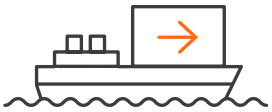
Calculations:

- Emissions from gas: 10,000 x 0.03021 = 302.1 kg CO_2e
- Emission from diesel: 3,250 x 0.61101 = 1,985.8 kg CO_2e
- Emissions from electricity: (50,000 x 0.0179) + (50,000 x 0.00397) + (50,000 x 0.0459) = 895 + 198.5 + 2,295 = 3,388.5 kg CO_2e

Total: 302.1 + 1,985.8 + 3,388.5 = 5,676.4 kg CO_2e / 1000 = 5.68 tonnes CO_2e

Scope 3 ...

Category 4:
Upstream Transportation and Distribution



Transportation and distribution of products purchased by the reporting company between its tier 1 suppliers and the reporting company's own operations in vehicles not owned or operated by the reporting company (including multi-modal shipping where multiple carriers are involved in the delivery of a product, but excluding fuel and energy products).

It also includes third-party transportation and distribution services purchased by the reporting company in the reporting year (either directly or through an intermediary), including inbound logistics, outbound logistics (e.g., of sold products), and third-party transportation and distribution between a company's own facilities.

This category is likely to account for one of the highest proportions of a publisher's scope 3 emissions as it will be associated with the transportation of goods between mills, printers, warehouses and potentially to the end retailer (depending on whether that is included in upstream or downstream transportation & distribution).

Under this category, emissions can be calculated with various methods depending on the suppliers' data availability and granularity:

- **Fuel-based method:** determining the amount of fuel consumed and applying the appropriate emission factor for that fuel.
- **Distance-based method:** involves determining the mass, distance, mode, and (ideally) vehicle type of each shipment, then applying the appropriate mass-distance emission factor for the mode or vehicle type used.
- **Spend-based method:** involves determining the amount of money spent on each mode of business travel transport and applying secondary emission factors.

The most common calculation methods are distance-based and spend-based; however it is always dependent on supplier data.

For the distance-based method, the reporting company will be required to either estimate the mode of distribution (e.g., road, sea, air etc.) and the distance the goods have been transported or request this data from suppliers directly.

Key data needed:

- Mass (including packaging) or volume of products sold (e.g., kg, tonnes)
- Distances (e.g., miles, kilometres)
- Mode of shipment (e.g., HGV, sea container)
- Ideally, vehicle type (e.g., light van or articulated lorry)

Relevant emission factors:

- Mass – distance emission transport for the vehicle used
  - Common forms of emission factors are kg CO_2e/tonne/km for road transport or kg CO_2e/TEU/km for sea transport

It is important to note that emissions factors can vary by vehicle, region, or country, and companies should be careful in selecting factors which most closely resemble their supply chain logistics context.

Calculation:

As with other categories, the emissions calculation is a matter of applying the relevant emission factors to activity data:

[Emissions from upstream transportation and distribution, tCO_2e =

([Mass of Goods, Kg])

×

([Distance Travelled, Km])

×

[Emissions Factor, Kg CO_2e per tonne-Km]
/ 1,000

Example

Publisher A sources paper from Supplier A, novelty components from Supplier B and packaging from Supplier C. Information on production volume and distribution are provided by each supplier, while emission factors are taken from the UK government website (conversion factors 2023 – Freighting goods):

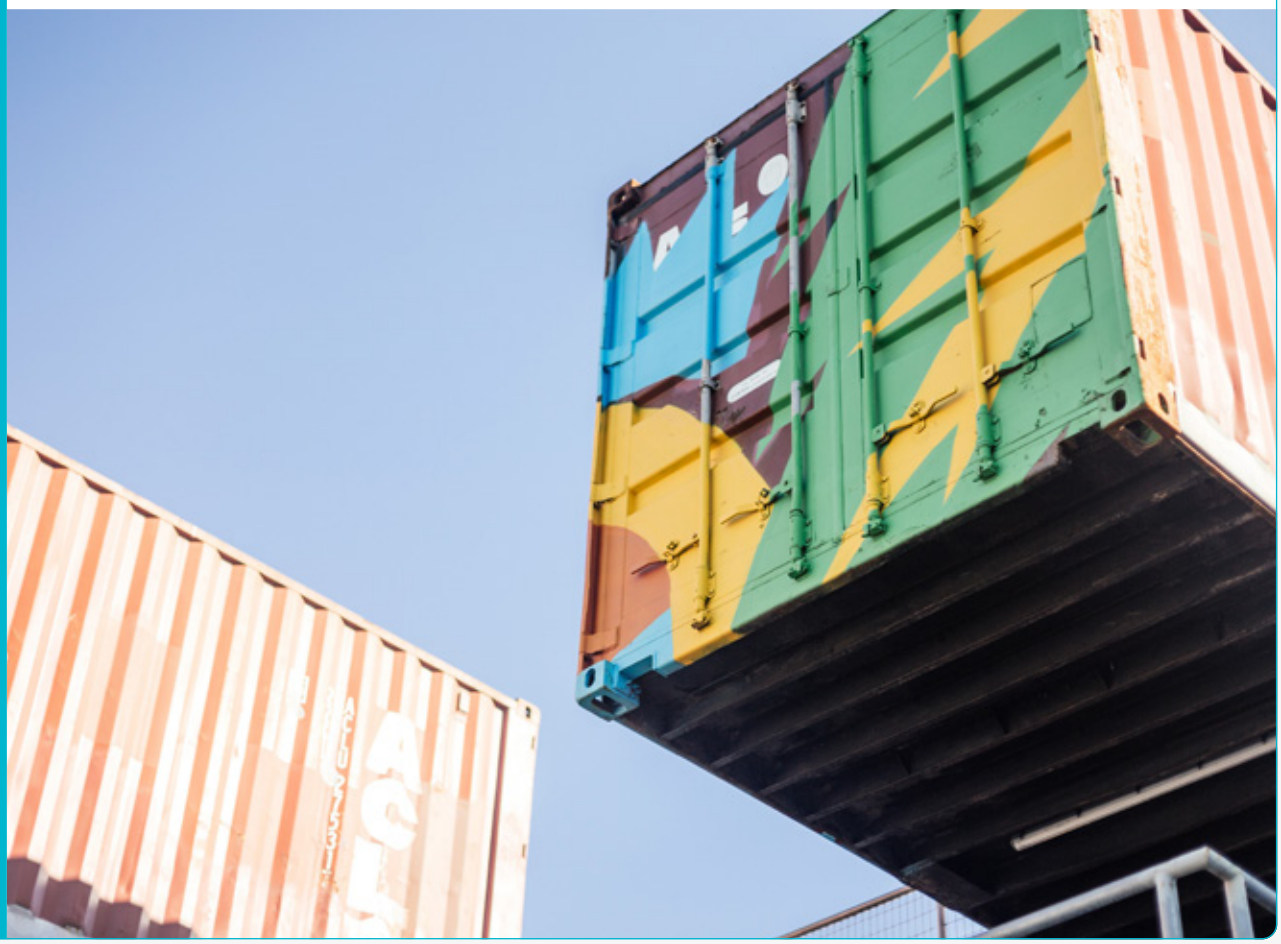
Activity Data & Emission Factors:

Supplier	Mass/volume of transported goods (tonnes)	Distance Travelled (Km)	Mode of Transport/ vehicle type	Vehicle type emission factor (kg CO_2e/TEU-Km)
A (paper)	9	500	Van Class III (1.74 to 3.5 tonnes)	0.253
B (novelty components)	4	960	Air (long-haul)	1.099
C (packaging)	2	1,000	Container ship (average)	0.016

Calculations:

- Emissions from road transport: 9 x 500 x 0.253 = 1,138.5 kg CO_2e
- Emission from air transport: 4 x 960 x 1.099 = 4,220.16 kg CO_2e
- Emissions from sea transport: 2 x 1,000 x 0.016 = 32 kg CO_2e

Total: 1,138.5 + 4,220.16 + 32 = 5,390.66 kg CO_2e/1000 = 5.39 tonnes CO_2e



Scope 3 ... Category 4

For the spend-based method: the reporting company will be required to determine the amount spent on transportation by mode/type of transport (e.g., road, rail, sea, air).

Key data needed:

- Amount spent on transportation by type, using market values (usually taken from internal data systems, bills, and invoices)
- Relevant EEIO emission factors of the transportation type per unit of economic value (e.g. kg CO_2e/£)

Calculation:

Again, the emissions calculation is a matter of applying the relevant emission factors to your activity data:

[Emission from Upstream Transportation and Distribution, tCO_2e]

([Spend, £])

×

[Emissions Factor, $kgCO_2e$ per £]) / 1,000

Example

A publisher sources paper from supplier A, novelty components from supplier B and packaging from Supplier C. Information is taken from the publisher's records, while emission factors are taken from the UK Government's conversion factors for indirect emissions from the supply chain – $KgCO_2$ per £ spent.

Activity Data & Emission Factors:

Supplier	Spend (£)	Mode of Transport	Emission factor description	Emission Factor (kg CO_2e per £)
A (paper)	50,000	Rail	Rail transport services	0.746
B (novelty components)	10,000	Air freight	Air transport services	1.533
C (packaging)	25,000	HGV	Land transport services	0.603

Calculations:

- Emissions from rail: (50,000) multiplied by the emission factor (0.746) and divided by (1,000) = **37.3 tCO_2e**
- Emission from air freight: (10,000) multiplied by the emission factor (1.533) and divided by 1,000 = **15.3 tCO_2e**
- Emissions from land transport: (25,000) multiplied by the emission factor (0.603) and divided by 1,000 = **15.1 tCO_2e**

The publisher then adds all three figures (37.3 +15.3 + 15.1) together to give their total spend based category 4 emissions of **66.7 tCO_2e**

Category 5:
Waste Generated in Operations

Disposal and treatment of waste generated in the reporting company's operations in the reporting year (disposal and treatment done in facilities not owned or controlled by the reporting company).

This category is likely to account for a small part of a publisher's scope 3 emissions as it will be associated with office and warehouses waste and the disposal of books that have been returned to the publisher within the reporting year.

Waste treatment activities usually include landfill disposal, recycling recovery, incineration, composting, combustion, and wastewater treatment. Please note that different types of waste generate different types and quantities of greenhouses gasses, and therefore should be calculated accordingly.

The different calculation methods, description, data, and emission factors are summarised below:

Method	Description	Activity data	Emission factor
Supplier-specific method	Involves collecting waste-specific scope 1 and scope 2 emissions data directly from waste treatment companies (e.g., for incineration, recovery for recycling)	Scope 1 and scope 2 emissions of the waste-treatment company (allocated to the waste collected from the reporting company)	The reporting company collects emissions data from waste treatment companies, so no emission factors are required (the company would have already used emission factors to calculate the emissions).
Waste-type-specific method	Involves using emission factors for specific waste types and waste treatment methods	■ Waste produced (e.g., tonne/ cubic meter) by type of waste generated in operations ■ For each waste type, specific waste treatment method applied (e.g., landfilled, incinerated, recycled).	Waste type-specific and waste treatment-specific emission factors. The emission factors should include end-of-life processes only. Emission factors may include emissions from transportation of waste.
Average-data method	Involves estimating emissions based on total waste going to each disposal method (e.g., landfill) and average emission factors for each disposal method.	■ Total mass of waste generated in operations ■ Proportion of this waste being treated by different methods (e.g., percent landfilled, incinerated, recycled).	Average waste treatment specific emission factors based on all waste disposal types. The emission factors should include end-of-life processes only.

Scope 3 ... Category 5

When contacting suppliers, the reporting company should think about the different types of goods including general waste sent to landfill, office paper, book waste, packaging, transport, and distribution etc.

Key Assumptions:

- All hazardous waste is considered as incinerated. The emission factors used should come from a recognised database and be attributed to the different types of waste accordingly.
- Non-hazardous waste is considered as municipal waste, and recycled waste is treated on a material basis (e.g.: paper/cardboard, plastic, metal, etc.).
- Waste treatment at facilities owned or controlled by the reporting company is accounted for in scope 1 and scope 2. Treatment of waste generated in operations is categorized as an upstream scope 3 category because waste management services are purchased by the reporting company.
- The reporting company should check whether transport is included within the emission factor. For example, it is included within emission factors provided by DEFRA. If it is not included, the company should consider whether it would be material.

The average-data method is the most common approach for calculating Category 5 emissions.

As with other categories, the emissions calculation is a matter of applying the relevant emission factors to activity data:

[Emissions from Waste Generated in Operations, tCO_2e] =

([Mass of Waste, Kg])

×

([Proportion of waste disposal, %]

×

[Emission Factor for disposal method)]
/ 1,000

Example

Publisher A based in the UK, collects data on their total office waste collected and the different disposal methods they use as seen below:

Activity Data & Emission Factors (conversion factors 2023 – Waste Disposal) :

Total waste mass (kg)	Waste treatment/ disposal method	Proportion (%)	Average emission factor of waste treatment/ disposal method (kg CO_2e/kg)
1,000	Landfill	30	0.520 (commercial and industrial waste to landfill)
	Recycling	50	0.021281 (recycled)
	Composting	20	0.00891(organic: food and drink waste for composting)

Calculations:

- Emissions from landfill disposal: 1,000 x 0.3 x 0.520 = 156 kg CO_2e
- Emission from recycling disposal: 1,000 x 0.5 x 0.021281 = 10.6 kg CO_2e
- Emissions from composting treatment: 1,000 x 0.2 x 0.00891 = 1.8 kg CO_2e

Total: 156 + 10.6 + 1.8 = 168.4 kg CO_2e/1000 = 0.158 tonnes CO_2e

Emissions from returned books

To calculate the number of books returned to the publisher, data on the weight of books returned will be needed. However, if it is not possible to access this data, an assumption can be made using the total paper volume (Kg) and estimated return rate (%).

$$[\text{Emissions from returned books, } tCO_2e] = \frac{[\text{Mass of paper returned, Kg}] \times [\text{Emission Factor for Disposal Method, Kg } CO_2e \text{ per Kg disposed}]}{1{,}000}$$

Example

A publisher wants to calculate their emissions from the books returned within the reporting year, however they don't have access to actual data and so will need to make an assumption.

Within the reporting year, the publisher prints around 75,000kg of paper with a return rate of 20%. The estimated paper volume (kg) returned is calculated as 75,000 x 0.2 = **15,000**.

As these returns have been pulped, the publisher then selects the appropriate emission factor for closed-loop recycling **(21.281)**.

All that is left is to multiply the volume of returned paper (15,000) by the emission factor (21.281) and divide by 1,000 to get tonnes = **319.2 tCO_2e**.

The publisher then adds emissions from the pulping of returned books (319.2 tCO_2e) to the emissions from the disposal of office waste (0.158 tCO_2e) and so their total scope 3 category 5 emissions are **319.4 tCO_2e**.

Category 6:
Business Travel

Emissions from the transportation of employees for business-related activities in vehicles owned or operated by third parties, such as aircrafts, trains, buses, and passenger cars. This should not include any vehicles owned or controlled by the company.

The most significant emissions from business travel for publishing companies is likely to originate from air travel. Air travel is the most carbon intensive mode of travel and so should be the starting point for your calculations.

This data may sit with a procurement team or a separate business travel system if the reporting company has one. It is important to gather details of the journeys undertaken, but most importantly, the mode of travel and the origin and destination. From this information, estimates can be made to determine the distances travelled and by which mode. For air travel, it's important to distinguish between the class of travel and between short and long-haul journeys, as different emission factors apply.

The calculation is:

$$[\text{Emissions from Business Travel, } tCO_2e] = ([\text{Distance travelled, Km}] \times [\text{Emission Factor, Kg } CO_2e/\text{Passenger Km}]) / 1{,}000$$

The example calculations below contain emission factors from the UK government website (conversion factors 2023 - Business travel - air, Business travel - land).

Travel Type	Distance (Km)	Emissions Factor (Kg CO_2e Passenger Km)	Total Emissions (tCO_2e)
Flight- Short haul, Economy class	3,000,000	0.18287	548.61
Flight- Short haul, Business class	3,000,000	0.27430	822.9
Flight- Long haul, Economy class	3,000,000	0.20011	600.33
Flight- Long haul, Business class	3,000,000	0.58029	1,740.87
National rail – Passenger	3,000,000	0.035463	106.39
Car – average, petrol	3,000,000	0.263787	791.36
Car – average, diesel	3,000,000	0.273316	819.95

All emissions related to travel in a company car should be included in scope 1, as the car us paid for by the reporting company. Any emissions relating to business travel in a personal or hire car should be reported under this category.

The reporting company may also want to calculate emissions relating to subsistence and accommodation (i.e., hotel nights) if they are considered to be significant. The simplest method of calculating these emissions is to use spend data. The emission factors for this calculation can be found in the UK Government's conversion factors $KgCO_2$ per £ spent, by SIC code 2020.

The calculation is:

[Emissions from Hotel Stays, tCO_2e]

[Total spend £]

×

[Emission Factor, $kgCO_2e$ per £] / 1,000

Example

A publisher has spent **£650,000** on hotel accommodation during the reporting year and feels it is a significant contributor to their emissions.

As the publisher knows the spend, they need to select a relevant emission factor. Within the set of emission factors outlined above, they select the emission factor for 'Accommodation services' (**0.324** $kgCO_2e$ per £).

To calculate the associated emissions, the publisher multiplies the (£650,000) by the emission factor (0.324) and divides by 1000 which equals **210.6 tCO_2e**.

Category 7:
Employee Commuting

Transportation of employees between their homes and their worksites during the reporting year (in vehicles not owned or operated by the reporting company).

This category is expected to be a relatively larger part of a publisher's scope 3 emissions as it is directly related with employees and how they are working. However, it depends on a number of factors including company policies and working arrangements, employees' proximity to the offices and their location, and remote/homeworking conditions (homeworking emissions should be included under this category).

Like category 4, there are three different methods to account for employee commuting related emissions:

- Fuel-based method
- Distance-based method
- Average-data method

For accuracy, we suggest using the distance-based method and if data availability is limited then using the average-data method. To reduce the amount of actual data required, companies may gather data on employee commuting from a representative sample and extrapolate.

As per category 4, the key data needed for both methods are the following:

Method	Activity Data	Emission Factors
Distance-based method	■ Total distance travelled by employees over the reporting period (e.g., passenger-kilometres travelled) including location, number of commuting days. ■ Mode of transport used for commuting (e.g., train, subway, bus, car, bicycle)	Emission factors for each mode of transport emitted per passenger-kilometres travelled).
Average-data method	■ Average commuting distances of typical employees for each work site multiplied by two to get the total daily distance ■ Average modes of transport of typical employees as a % of the workforce at each site ■ Average number of commuting days in a year	Emission factors for each mode of transport (usually expressed as kilograms of GHG emitted per passenger per kilometre travelled)

Distance-based method:

[Emissions from Employee Commuting, tCO_2e]

= [Number of employees] × [Commuting Days] × [Distance Travelled, Km] × [% of Distance for each transport type] × [Emission Factor, $kgCO_2e$ per km for each transport type] / 1,000

Average-based method:

[Emissions from Employee Commuting, tCO_2e]

= [Number of employees] × [Average Commute X 2] × [Commuting Days] × [% of Distance for each transport type] × [Emission Factor, $kgCO_2e$ per km for each transport type] / 1,000

Scope 3 ... Category 7

Example

A publisher, based in London, UK, has 5,000 employees. To determine the distance and mode of transport it refers to the UK Department of Transport's information as seen below:

Activity Data & Emission Factors (conversion factors 2023 – Business travel land)

Mode of Transport	Distribution of total commutes (%)	Average Commute distance (both ways) (km)	Emission factor (kg CO_2e/vehicle or passenger km)
Rail (national)	50	40	0.035
Car (medium size)	10	50	0.167
Underground	40	20	0.028

- **Calculations:**
- Emissions from rail commuters: 5,000 x 0.5 x 40 x 0.035 = 3,500 kg CO_2e
- Emission from car commuters: 5,000 x 0.1 x 50 x 0.167 = 4,175 kg CO_2e
- Emissions from underground commuters: 5,000 x 0.4 x 20 x 0.028 = 1,120 kg CO_2e

Total: 3,500 + 4,175 + 1,120 = 8,795 kg CO_2e /1000 = 8.80 tonnes CO_2e

The publisher also has a flexible working policy, with employees working from home 2 days of the week. The usual working weeks in the UK per year, excluding holidays (both bank holidays and leave entitlement), are 47 and employees work 40h per week (considering a normal 8h shift). Therefore, the total hours of homeworking per week would be 16, which translates to 752 working hours annually.

The publisher needs to also determine the homeworking emissions using the relevant emission factor: 0.334 KgCO_2e/FTE working hour (conversion factors 2023 – Homeworking (office equipment + heating) as follows:

Emissions from homeworking: 5,000 x 0.334 x 752 = 125,584 kg CO_2e/1000 = 125.6 tonnes CO_2e

Thus, total employee commuting emissions are 134.4 tCO_2e

Category 8:

Upstream Leased Assets

Includes emissions from the operation of assets that are leased by the company and not already included in the company's scope 1 or scope 2 inventories.

In most cases, it is unlikely that the emissions associated with leased assets are significant, or that they are not under the control of the company. In the case of the latter where the publishing company has operational or financial control, then the emissions associated with these assets – for example, an office space – should be treated as scope 1 or 2 emissions (rather than scope 3). In the case where there is no operational or financial control, the company should seek to obtain emissions data relating to the total building and the pro-rate this emission based on the floor area occupied. This may be from employees working in a shared office space, such as a WeWork, where the data should be readily available from the leasing company or their agent. The calculation method will be identical to that of scope 1 and 2 for each relevant activity and emission type.

Category 9:

Downstream Transport and Distribution

Transportation and distribution of products sold by the reporting company in the reporting year between the reporting company's operations and the end consumer (if not paid for by the reporting company, in vehicles and facilities not owned or controlled by the reporting company)

For the publishing industry, this category will include the transport of books to wholesalers, retailers, schools, libraries, academic institutions etc. Please note that storage costs should also be included.

In most cases, it is unlikely that emissions associated with downstream transport and distribution are significant because they these activities are typically paid for by the publisher. Therefore, the associated emissions will already be included under category 4: Upstream Transportation and Distribution.

Category 10:

Processing of Sold Products

This category includes emissions from the processing of intermediate products by third parties (e.g., manufacturers) after sale by the reporting company. This category does not include emissions from the manufacture of the intermediate product, or use of the end product bought by the consumer.

For the publishing industry, this category will include the transport of books to wholesalers, retailers, schools, libraries, academic institutions etc. Please note that storage costs should also be included.

It is unlikely that this category will be relevant for the publishing industry as books do not need further processing before being sold to the end consumer. If it is deemed relevant and potentially material, publishers should get emissions information directly from the processor.

Category 11:
Use of Sold Products

Emissions from the use of goods and services sold by the reporting company in the reporting year. The scope 3 emissions from use of sold products includes the scope 1 and 2 emissions of end users.

This category is only applicable to sold products that consume energy during use. For publishers, the primary product that would be in included in this category is the digital footprint from e-books. The calculation includes two main aspects:

1. Emissions from e-book downloads **2. Emissions from user devices**

1. E-book downloads

To calculate the emissions from e-book downloads, the following information will be needed:

- Number of downloads within the reporting year
- Average file size of downloads

The reporting company will then need to calculate an energy consumption figure (in kWh). Within this guidance document, we have used intensity factors from the Carbon Trust Whitepaper, which gives the amount of energy consumed for the transmission phase (e.g., core network and home routers).

The next step in the calculation is to assign the electricity emission factor (as required in the scope 2 calculation). This emission factor will be dependent on the country of downloads.

The calculation is:

Electricity Requirement (kWh) =

[Total number of downloads]

×

[Average File Size (MB)] /1000

×

[Energy intensity factor]

The calculation is:

[Emissions from e-book downloads, tCO_2e]

Electricity Requirement (kWh)

×

Electricity emission Factor ($kgCO_2e$/ kWh) / 1,000

Example

A publisher based in the UK has 50,000 e-book downloads within a reporting year and the average file size is 45 MB. The publisher uses the energy intensity factors for the amount of energy consumed from the transmission phase from the Carbon Trust Whitepaper which provides them with the following intensity factors:

- Fixed and access network: 0.0065 kWh/GB
- Home Routers: 0.025 kWh/GB

The publisher now has enough information to calculate the energy requirement (kWh) and uses the following calculation: 50,000 **x** (45 / 1000) **x** (0.0065 **+** 0.025) **= 70.89 kWh**

The publisher then takes the electricity requirement (70.89 kWh) and multiplies it by the electricity emission factor for UK (0.207074) and then divides it by 1000 to get tonnes CO_2e = **0.015 tCO_2e**.

2. User media devices

To calculate the emissions from user media devices, the reporting company may need to make assumptions on the following:

- % of downloads on each device type (e.g., mobile, Laptop, Tablet, PC and Monitor)
- Average pages of books
- Average reading time of pages per minute

The reporting company will also need information on the power consumption figures for devices. Within this guidance document, we have used figures from the Carbon Trust Whitepaper.

The reporting company can then combine the emissions from the e-book downloads and user devices to calculate the emissions from use of sold product. It's likely that all other networking emissions, including data centres, are covered as services under category 1.

The calculation is:

[Emissions from user devices, tCO_2e]

[Total downloads] (% of downloads by type x Total downloads)

X

[Average reading time (hrs)] (total book pages/ reading time of pages per minute) / 60

X

[Device power consumption (W)] / 1000

X

[Electricity emission Factor ($kgCO_2e$/ kWh)] / 1,000

Example

A publisher based in the UK has 50,000 e-book downloads during the reporting year and estimates that about 75% are downloaded onto tablets and another 25% onto mobiles. By multiplying the % share by the total number of downloads, the publisher has calculated that 37,500 e-books are downloaded onto tablets and 12,500 onto mobiles.

Based on the e-books downloaded, the publisher estimates that there are around 450 pages per book and the average reading time is about 0.5 minutes per page. By dividing the number of book pages (450) by the reading time of pages per minute (0.5), and dividing by 60, the publisher calculates that the average reading time is **15 hours**.

The publisher uses the device power consumption (W) figures outlined in the Carbon Trust Whitepaper and notes that tablets consume 5.5 (W) and mobiles consume 1 (W).

The publisher now has enough information to calculate the emissions (tonnes) for each device type by using the following calculations:

Tablets	Mobiles
Number of downloads (37,500) **x** Average reading time (15) **x** device power consumption (5.5) / 1000 x electricity emissions factor (0.207074) / 1000 **= 0.64**	Number of downloads (12,500) **x** Average reading time (15) **x** device power consumption (1) / 1000 x electricity emissions factor (0.207074) / 1000 **= 0.039**

Total emissions from user devices = 0.679 tCO_2e

Category 12:
End of Life Treatment of Sold Products

Emissions from the waste disposal and the treatment (e.g., incineration, landfill, pulping etc) of all products sold by the reporting company at the end of their life, during the reporting year.

To calculate this category, publishers need to understand the volume of books disposed of each year. This includes an estimation of what percentage of total books ever produced are discarded within the reporting year and how many books are returned to the publisher during the reporting year.

It can be a challenge for publishers to access information relating to the disposal of books and so it is possible to make assumptions to help inform the calculations. To calculate the number of books disposed of during the reporting year, publishers should make an assumption on what percentage of books ever produced are discarded within a year. Publishers should then make an assumption on the total volume (Kg) that this equates to.

Once the total volume of paper (Kg) for the reporting year has been ascertained/calculated, all that is left is to assign an appropriate emission factor. There are different emission factors for each disposal method, and the disposal method will differ by publisher. In the example below, it has been assumed that the books are pulped, and that the pulp is used to make new paper. Therefore, we have used the emission factor associated with the closed- loop recycling of books.

The calculation is:

[Emissions from end-of-life treatment of sold products, tCO_2e]

[Mass of paper disposed of, Kg]

×

[Emission Factor for Disposal Method, Kg CO_2e per Kg disposed] / 1,000

Example

A publisher wants to calculate their emissions from the books disposed of, however they don't have access to actual data and so will need to make assumptions.

The publisher estimates that they have printed 1,125,000kg of paper over their entire lifetime of operation and assumes that 1% of that total is disposed of each year. This means that approximately, **11,250kg** of paper is disposed of during the reporting year.

The total volume for the reporting year is **11,250kg**.

The publisher then selects the emission factor for the waste disposal of books (closed-loop) (21.281).

All that is left is to multiply the volume of returned paper (11,250) by the emission factor (21.281) and divide by 1,000 to get tonnes = **239.4 tCO_2e**.

Category 13:
Downstream Leased Assets

This category is applicable to lessors, i.e., companies that receive payments from lessees. This category includes emissions from the operation of assets that are owned by the reporting company, acting as lessor, and leased to other entities in the reporting year that are not already included in scope 1 or scope 2.

Please refer to category 8

Category 14:
Franchises

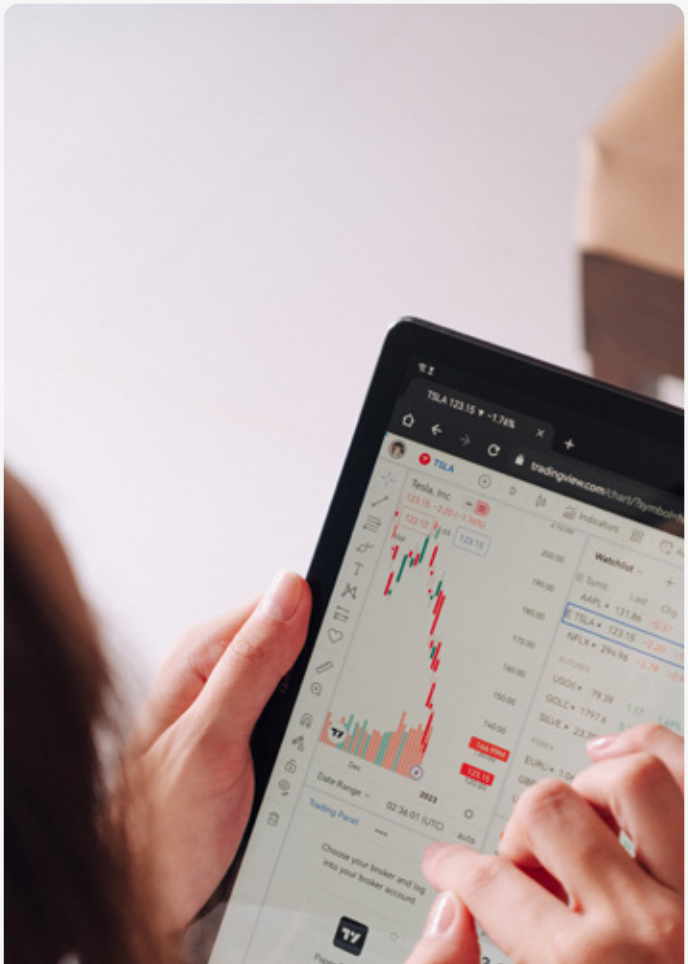
This category includes emissions from the operation of franchises not included in scope 1 or scope 2. A franchise is a business operating under a license to sell or distribute another company's goods or services within a certain location.

Not relevant for the publishing industry.

Category 15:
Investments

This category is likely not to be material to publishing companies. Page 51 of the GHG Protocol's Corporate Value Chain (scope 3) Accounting and Reporting Standard says that:

"This category is applicable to investors (i.e., companies that make an investment with the objective of making a profit) and companies that provide financial services. Category 15 is designed primarily for private financial institutions (e.g., commercial banks), but is also relevant to public financial institutions (e.g., multilateral development banks, export credit agencies, etc.) and other entities with investments not included in scope 1 and scope 2."



There may be certain circumstances through which a publishing company may make a financial investment, for example, through the acquisition of a business. In most cases the emissions associated with these investments will be captured within the business' own scope 1 and 2 emissions in time. However, there may be certain situations where this is not the case, or where their business does not have operational control – for example, if the company makes a minority investment in a joint venture. The recommendation is that these should be treated on a case-by-case basis to ensure that the associated emissions are properly captured and distributed between business partners.

Publishers may either be able to gather specific scope 1 and 2 emissions from the joint venture and apportion these to themselves by the % of their stake, or they may be able to estimate emissions by gathering the revenue of the joint venture in the reporting year, apportioning this to their stake, and using an economic sector average emission factor (refer to category 1, spend-based approach).

Appendix A

Useful Documents

1. The GHG Protocol Corporate Accounting and Reporting Standard
   https://ghgprotocol.org/corporate-standard
2. The GHG Protocol Corporate Standard for Scope 3 Accounting and Reporting
   https://ghgprotocol.org/corporate-value-chain-scope-3-standard
3. The GHG Protocol Corporate Scope 3 Technical Calculation Guidance
   https://ghgprotocol.org/scope-3-calculation-guidance-2
4. The GHG Protocol Scope 3 Evaluator
   https://ghgprotocol.org/scope-3-evaluator
5. Book Chain Project Home
   https://bookchainproject.com/home
6. Book Chain Project Environment Report 2020-21
   https://bookchainproject.com/viewResource?resource=462
7. Emissions factors published by the UK Government
   https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting
8. Carbon footprint for the UK and England to 2020 by the UK Government
   https://www.gov.uk/government/statistics/uks-carbon-footprint
9. Carbon impact of video streaming by the Carbon Trust
   https://ctprodstorageaccountp.blob.core.windows.net/prod-drupal-files/documents/resource/public/Carbon-impact-of-video-streaming.pdf
10. Country overview of climate performance by Climate Transparency
    https://www.climate-transparency.org/g20-climate-performance/g20report2022
11. Confederation of European Paper Industries ten toes report
    https://www.cepi.org/wp-content/uploads/2021/02/ENV-17-035.pdf

Appendix B

Providers of Emission Factors

Publicly available and commercial emission factor databases

Database and provider	Geography	Year
GHG Conversion Factors for Company Reporting, UK Government	UK	2023
Centre for Corporate Climate Leadership GHG Emission Factors Hub, US government (EPA)	US	2023
China National Standard on Emissions Calculation	China	2022
International Energy Agency (IEA) Emission Factors 2023	Global	2023

Appendix C

Scope 3 Categories and Boundaries

Category	Category Description	Minimum Boundary
Category 1 **Purchased Goods and Services**	Extraction, production, and transportation of goods and services purchased or acquired by the reporting company in the reporting year, not otherwise included in Categories 2-8	All upstream (cradle-to-gate) emissions of purchased goods and services
Category 2 **Capital Goods**	Extraction, production, and transportation of capital goods purchased or acquired by the reporting company in the reporting year	All upstream (cradle-to-gate) emissions of purchased capital goods
Category 3 **Fuel and Energy - Related Activities**	Extraction, production, and transportation of fuels and energy purchased or acquired by the reporting company in the reporting year, not already accounted for in scope 1 or scope 2, including: a. Upstream emissions of purchased fuels (extraction, production, and transportation of fuels consumed by the reporting company) b. Upstream emissions of purchased electricity (extraction, production, and transportation of fuels consumed in the generation of electricity, steam, heating, and cooling consumed by the reporting company) c. Transmission and distribution (T&D) losses (generation of electricity, steam, heating and cooling that is consumed (i.e., lost) in a T&D system)-reported by end user d. Generation of purchased electricity that is sold to end users (generation of electricity, steam, heating, and cooling that is purchased by the reporting company and sold to end users)- reported by utility company or energy retailer only	a. For upstream emissions of purchased fuels: All upstream (cradle-to-gate) emissions of purchased fuels (from raw material extraction up to the point of, but excluding combustion) b. For upstream emissions of purchased electricity: All upstream (cradle-to-gate) emissions of purchased fuels (from raw material extraction up to the point of, but excluding, combustion by a power generator) c. For T&D losses: All upstream (cradle-to-gate) emissions of energy consumed in a T&D system, including emissions from combustion d. For generation of purchased electricity that is sold to end users: Emissions From the generation of purchased energy

Appendix C ...

Category	Category Description	Minimum Boundary
Category 4 **Upstream Transportation and Distribution**	Transportation and distribution of products purchased by the reporting company in the reporting year between a company's tier 1 suppliers and its own operations (in vehicles and facilities not owned or controlled by the reporting company) Transportation and distribution services purchased by the reporting company in the reporting year, including inbound logistics, outbound logistics (e.g., of sold products), and transportation and distribution between a company's own facilities (in vehicles and facilities not owned or controlled by the reporting company)	The scope 1 and scope 2 emissions of transportation and distribution providers that occur during use of vehicles and facilities (e.g., from energy use) *Optional:* The life cycle emissions associated with manufacturing vehicles, facilities, or infrastructure
Category 5 **Waste Generated in Operations**	Disposal and treatment of waste generated in the reporting company's operations in the reporting year (in facilities not owned or controlled by the reporting company)	The scope 1 and scope 2 emissions of waste management suppliers that occur during disposal or treatment *Optional:* Emissions from transportation of waste
Category 6 **Business Travel**	Transportation of employees for business-related activities during the reporting year (in vehicles not owned or operated by the reporting company)	The scope 1 and scope 2 emissions of transportation carriers that occur during use of vehicles (e.g., from energy use)
Category 7 **Employee Commuting**	Transportation of employees between their homes and their worksites during the reporting year (in vehicles not owned or operated by the reporting company)	The scope 1 and scope 2 emissions of employees and transportation providers that occur during use of vehicles (e.g., from energy use) *Optional:* Emissions from employee teleworking
Category 8 **Upstream Leased Assets**	Operation of assets leased by the reporting company (lessee) in the reporting year and not included in scope 1 and scope 2-reported by lessee	The scope 1 and scope 2 emissions of lessors that occur during the reporting company's operation of leased assets (e.g., from energy use) *Optional:* The life cycle emissions associated with manufacturing or constructing leased assets
Category 9 **Downstream Transportation and Distribution**	Transportation and distribution of products sold by the reporting company in the reporting year between the reporting company's operations and the end consumer (if not paid for by the reporting company), including retail and storage (in vehicles and facilities not owned or controlled by the reporting company)	The scope 1 and scope 2 emissions of transportation providers, distributors, and retailers that occur during use of vehicles and facilities (e.g., from energy use) *Optional:* The life cycle emissions associated with manufacturing vehicles, facilities, or infrastructure

Category	Category Description	Minimum Boundary
Category 10 **Processing of Sold Products**	Processing of intermediate products sold in the reporting year by downstream companies (e.g., manufacturers)	The scope 1 and scope 2 emissions of downstream companies that occur during processing (e.g., from energy use)
Category 11 **Use of Sold Products**	End use of goods and services sold by the reporting company in the reporting year	The direct use-phase emissions of sold products over their expected lifetime (i.e., the scope 1 and scope 2 emission of end users that occur from the use of: products that directly consume energy (fuels or electricity) during use; fuels and feedstocks; and GHGs and products that contain or form GHGs that are emitted during use) Optional: The indirect use-phase emissions of sold products over their expected lifetime (i.e., emissions from the use of products that indirectly consume energy (fuels or electricity) during use)
Category 12 **End of Life Treatment of Sold Products**	Waste disposal and treatment of products sold by the reporting company (in the reporting year) at the end of their life	The scope 1 and scope 2 emissions of waste management companies that occur during disposal or treatment of sold products
Category 13 **Downstream Leased Assets**	Operation of assets owned by the reporting company (lessor) and leased to other entities in the reporting year, not included in scope 1 and scope 2 - reported by lessor	The scope 1 and scope 2 emissions of lessees that occur during operation of leased assets (e.g., from energy use) *Optional:* The life cycle emissions associated with manufacturing or constructing leased assets
Category 14 **Franchises**	Operation of franchises in the reporting year, not included in scope 1 and scope 2- reported by franchisor	The scope 1 and scope 2 emissions of franchisees that occur during operation of franchises (e.g., from energy use) *Optional:* The life cycle emissions associated with manufacturing or constructing franchises
Category 15 **Investments**	Operation of investments (including equity and debt investments and project finance) in the reporting year, not included in scope 1 or scope 2	See the description of category 15 (investments) on page 41 for the required and optional boundaries

Contact

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