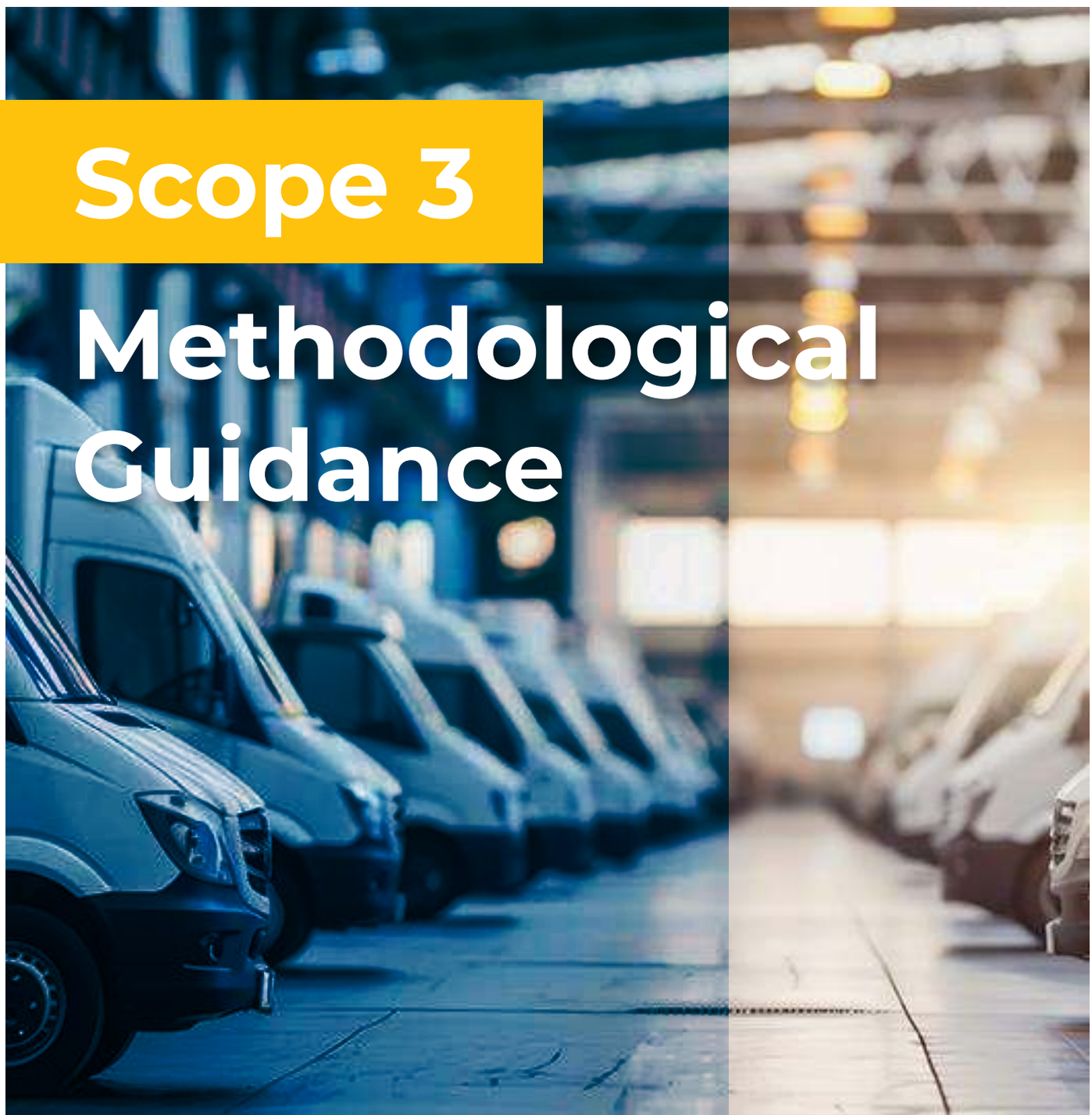
GIRP
the vital link in healthcare



Scope 3 Methodological Guidance

A blueprint to data collection, calculation and harmonisation for the European healthcare sector.

richterpharma Providing a Healthy Lead · cencora · COFARES · MERCK · Kwizda

SANDOZ a Novartis company · sanofi · PHOENIX group · Multipharma

Content

Executive Summary

GIRP is at the forefront of healthcare distribution in Europe, and collectively, the network delivers over 15 billion packs of medicine each year. From an environmental perspective, the healthcare sector is a significant source of emissions, yet the carbon reporting maturity is inconsistent across GIRP's network.

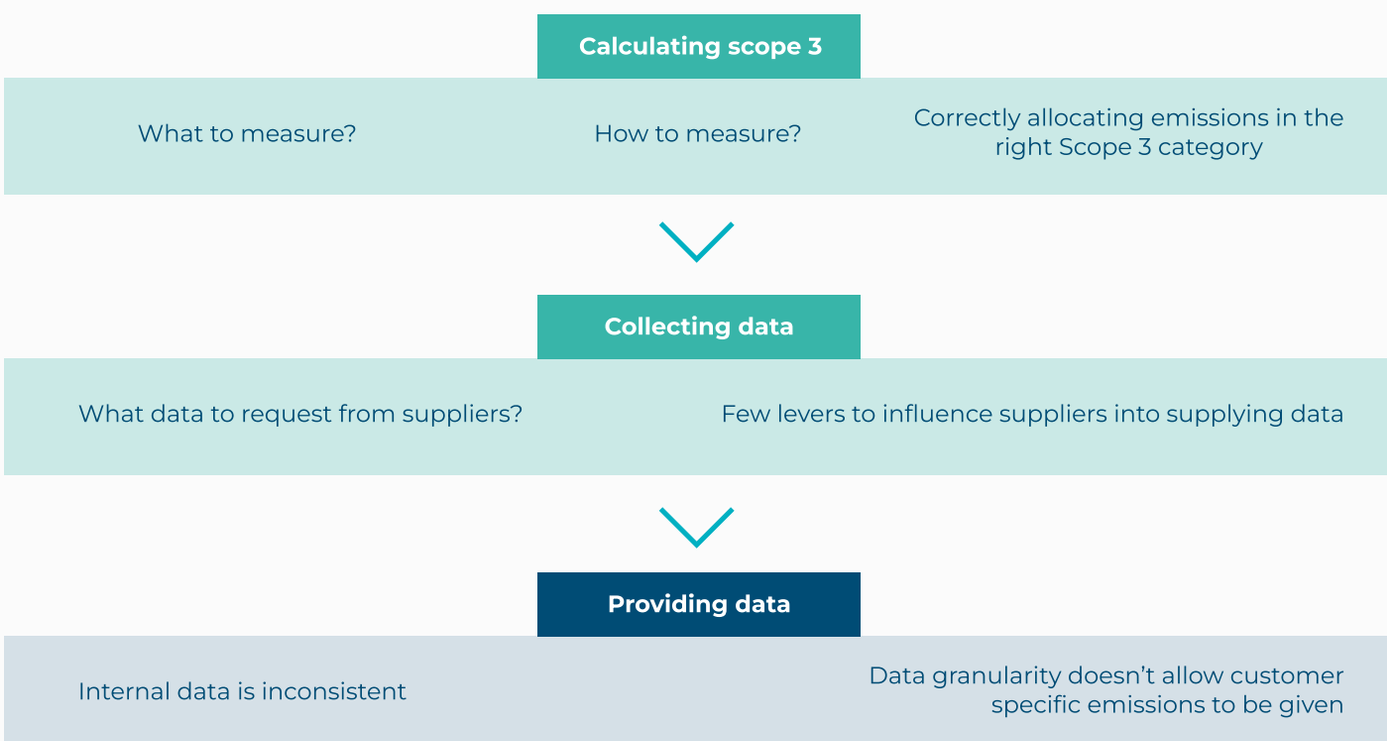
In parallel to increasing regulatory demands, stakeholder scrutiny and requests for data, there is a growing need for standardised emissions reporting approaches across the network. This standardisation should ultimately lead to:

- An improvement in data quality
- Focus on targeting the right areas for decarbonisation, and
- Receiving consistent data required for carbon and other environmental reporting requirements

The following guidance aims to empower users to standardise their emissions reporting, and ultimately progress towards Net-Zero emissions while addressing the challenges in carbon reporting that are currently experienced.

Identifying GIRP member challenges

Through a series of stakeholder interviews on topics concerning internal sustainability resources, Scope 1, 2 & 3 calculation approaches, and types of data requests (i.e. incoming & outgoing), common challenges faced across the network were identified.



Requesting data to calculate Scope 3

Data requests are likely to differ by category and anticipated maturity of the data supplier/customer. It is recommended that data users,

1. Understand the data boundary
2. Use the data quality hierarchy to assess what data is actually required
3. Engage with stakeholders to request data (i.e. prepare, engage, and communicate expected outcomes)
4. Analyse the data received

This process is likely to improve over time as familiarity increases with data, knowledge and visibility. In the long term, consider digital systems and Environmental Management Software (EMS) to replace Excel methods.

Receiving data requests

Quality of customer or supplier-specific emissions you can provide to those requesting emissions data is largely determined by how granular you store and understand your own data.

Often, improving your own data is required to meet the needs of your customers and suppliers requesting this information.

By revenue
- Total Revenue
- Revenue by customer

By shipment
- Transport type
- Weight of shipment
- Distance travelled
- Fuel used

By customer
- Tonnage shipped per customer
- Distance goods travelled

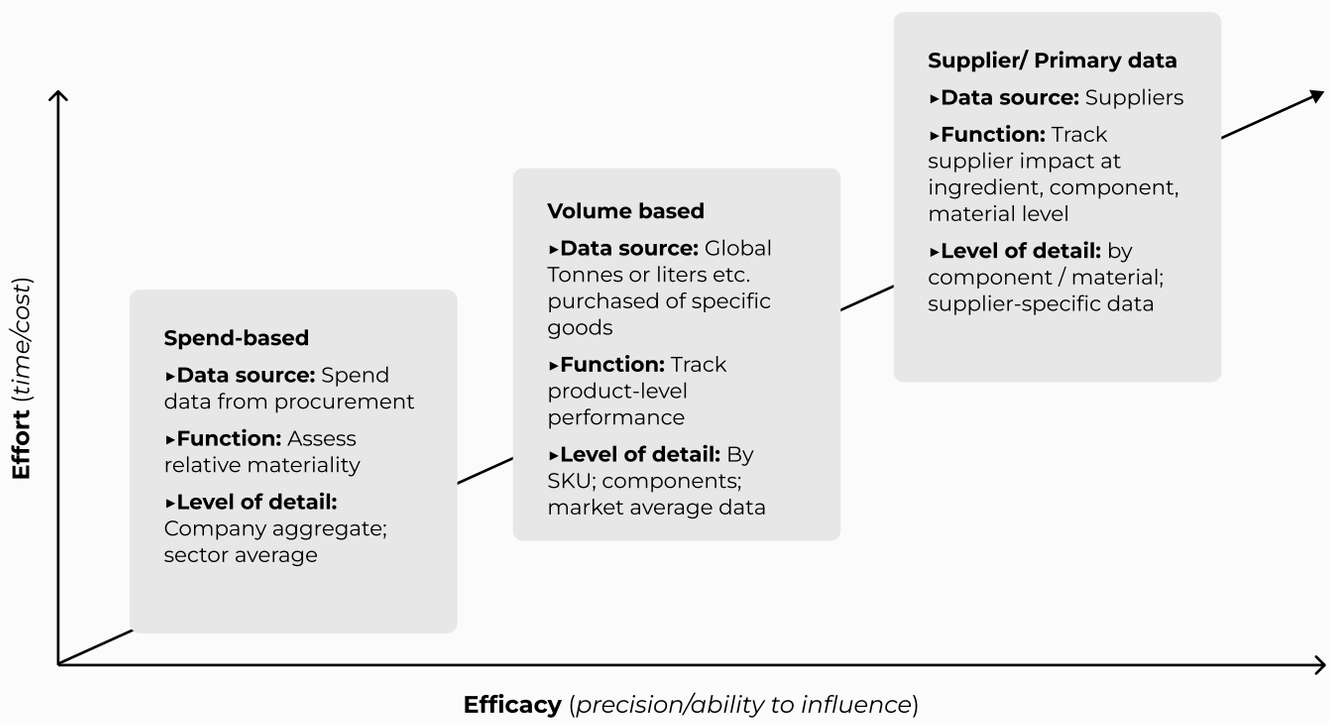
By transport type
- Aggregation of the 'By Shipment' type
- Tonnage shipped per customer

Receiving data

When receiving data for value chain emission calculations, delivery may differ in format, quality and information between suppliers and data providers.

For any category, data receivers must evaluate the data quality received to establish the most appropriate calculation approach to take (see figure below).

Common data quality types (i.e. Category 1. Purchased goods and services)



Estimating data

Data gaps may exist requiring assumptions to be made. In this case, reliable benchmarks can prove to adequately and accurately fill the gaps identified. Where calculations are assumption-heavy, methodologies are required to support replicability, as well as audits and verification. Typically, a methodology should include:

- The data sources used (e.g. meter readings, purchase ledgers)
- Calculation steps
- Assumptions and estimations made
- Limitations of data
- Limitations of data and data exclusions

Preface

Context

GIRP, the European Healthcare Distribution Association, is at the forefront of healthcare distribution in Europe, representing a robust network of full-service healthcare distributors. Collectively, GIRP's network delivers over 15 billion packs of medicine each year. GIRP advocates for the sectoral interests of these distributors, ensuring they maintain high standards while addressing the challenges of sustainability.

Recognizing the significant emissions associated with activities within our network—from the manufacturing and packaging of medicinal products to their storage, transportation, and distribution—there is an urgent need for standardised emissions reporting. Such standardisation is crucial to enable fair comparisons and assessments across the sector, fostering an environment where our members can effectively address their environmental impact.

The **Scope 3 Methodological Guidance Report** has been developed by the GIRP Scope 3 Working Group, which includes key industry leaders such as Cencora, Pharma Logistik Austria, Cofares, PHOENIX Group, Kwizda, Multipharma, Merck Group, Sanofi, and Sandoz. The impetus for this report stems from various factors. Regulatory requirements, including the EU Green Taxonomy and the Corporate Sustainability Reporting Directive (CSRD), have heightened the demand for accurate and consistent sustainability reporting. Furthermore, stakeholders are increasingly concerned about reputational risks associated with environmental performance. In the pharmaceutical and healthcare sectors, which contribute approximately 4.5%[1] of global emissions, scrutiny from stakeholders is intensifying.

This report, developed in collaboration with leading sustainability consultancy EcoAct and spearheaded by Cencora, offers a pioneering framework for accurately measuring and reporting Scope 3 emissions within the healthcare distribution sector. By addressing common challenges such as inconsistent data collection and varying reporting standards, this guidance empowers GIRP members and their partners to standardise their carbon reporting practices. Ultimately, the report aims to facilitate progress towards net-zero emissions, enabling our industry to respond effectively to the pressing demands of regulatory frameworks and investor expectations.

[1]Will Tower Watson, 2021

The process

Between the 17th May 2024, and the 7th June 2024, EcoAct conducted 7 interviews with members of GIRP's Sustainability Working Group, including 5 wholesalers and 2 manufacturers. Three additional deep-dives were conducted with firms within the GIRP network, including a wholesaler, a manufacturer and a courier, which undertook both an interview as well as a data provision task. The purpose of this engagement was to gain insight into the current state of sustainability reporting within Europe's pharmaceutical supply chain, looking at specific sustainability-related topics including:

- Internal sustainability resources
- Scope 1, 2, and 3 calculation approaches (with a focus on Transportation & Distribution, i.e. Scope 3 Categories 4 and 9)
- Types of data requests, both incoming and outgoing
- Common challenges faced across the GIRP network

To get a complete picture of sustainability across GIRP's network, interviews were conducted with companies across the value chain, including:

- Manufacturing,
- Pre-wholesale,
- Wholesale,
- Couriering, and
- Retail.

It was important for EcoAct to interview member firms at different stages of their sustainability journey to fully understand the different challenges currently faced. To achieve this, GIRP aided the selection of companies with variance in number of employees, revenue, and location.

Through the interviews, EcoAct was able to get a better understanding of the current sustainability trends within the network. These insights fed into the structure of the report and the depth of the guidance, especially within the Data Challenges & Solutions section. The common challenges identified were used as case studies throughout this section and allowed a focused guidance on these topics.

User benefit

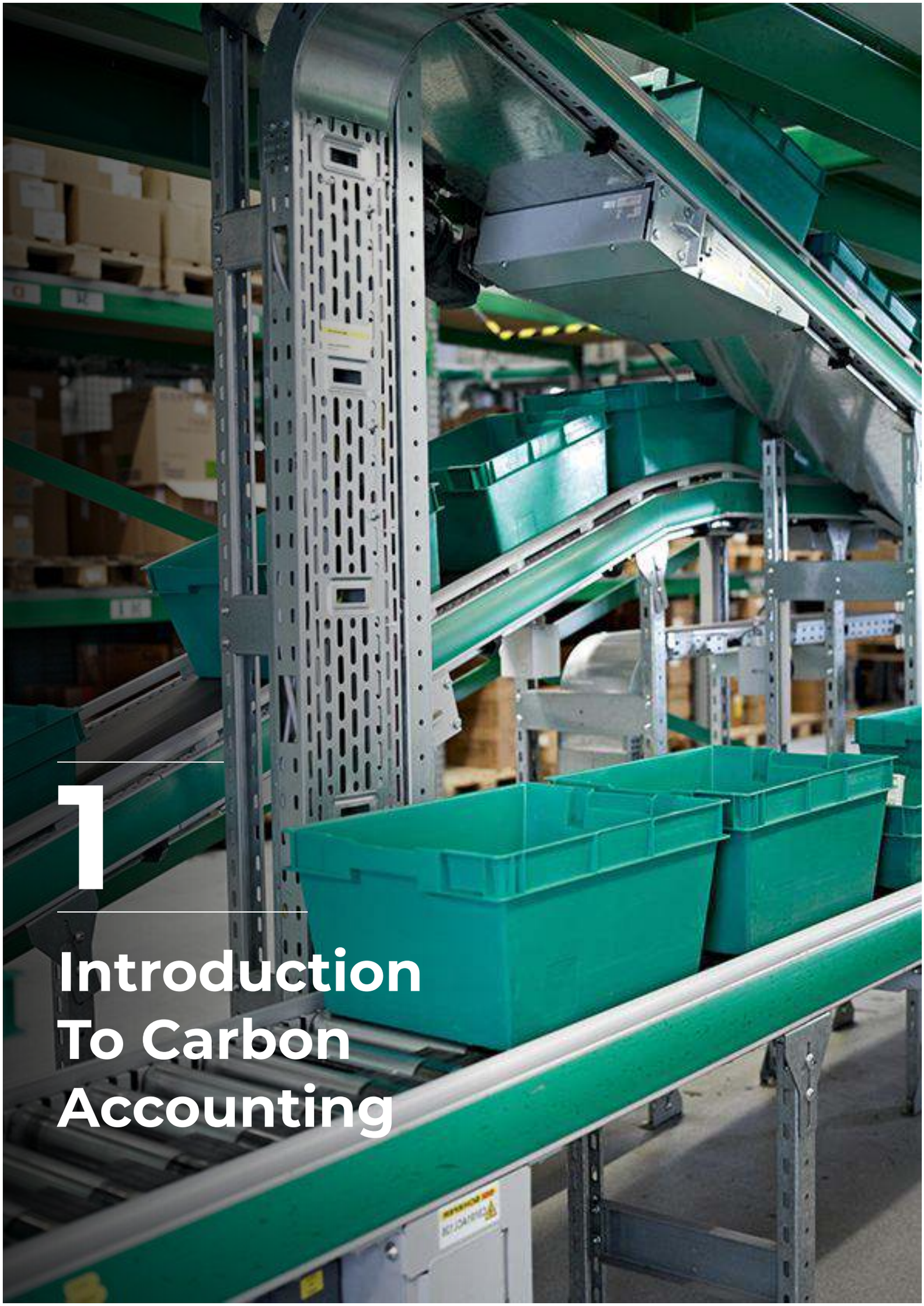
The aim of the guidance is to provide GIRP's network with a sectoral approach for the calculation of emissions, aligned to best practice and the Greenhouse Gas (GHG) Protocol. There is a specific focus on the apportionment and calculation of emissions in Upstream and Downstream Transportation & Distribution (Categories 4 & 9, respectively).

We encourage reporters to use the guidance to develop good practice & methodologies in carbon reporting, collaborate with the industry by providing the relevant & required data, and ultimately join efforts to work towards a Net-Zero future.

Glossary
Sustainability abbreviations & acronyms

	Activity data	Data on the level of an activity that affects greenhouse gas (GHG) emissions. For instance, ·kWh of electricity used, ·Litres of diesel burnt, ·Kilograms of API used in product formulation
	Baseline	A hypothetical scenario for what GHG emissions, removals or storage would have been in the absence of the GHG project or project activity
	Base year emissions	The GHG emissions in the first year of reporting
	Boundaries	The boundaries determine the core direct and indirect emissions and optional emissions to include associated with operations owned or controlled by the institution.
	Downstream	Downstream emissions are indirect GHG emissions from sold goods and services. Downstream emissions also include emissions from products that are distributed but not sold.
	Embodied carbon	All the CO2 emitted in producing materials.
	Emission factor	A factor allowing GHG emissions to be estimated from a unit of available activity data (e.g., tons of fuel consumed, tons of product produced) and absolute GHG emissions.
EEIO	**Environmentally Extended Input-Output Modelling**	Extended input-output (EIO) modelling identifies the linkage between economic consumption activities and environmental impacts to estimate the GHG emissions resulting from production and upstream supply chain activities.
GHG	**Greenhouse Gas**	Gasses that trap heat in the atmosphere
	Greenhouse Gas (GHG) Protocol	The Greenhouse Gas Protocol (GHG Protocol) is a globally recognised standard for measuring and managing greenhouse gas emissions.
GWP	**Global Warming Potential**	The Global Warming Potential (GWP) index is used to measure the relative warming effects of these gases, using CO2 as the baseline.
	Intensity ratios	A way of defining your emissions data in relation to an appropriate business metric and a way of comparing carbon emissions over time.
	Inventory	A quantified list of an institution's GHG emissions and sources.
	Inventory boundary	The inventory boundary determines which emissions are accounted for and reported by the institution.
	Location-based	Location-based emissions reflect the average emissions intensity of grids on which energy consumption occurs (using mostly grid-average emissions factor data).

	Market-based	Market-based emissions reflect the electricity that companies have purposefully chosen (or the lack of choice).
	Materiality	The emissions categories that are important to include or not to include will have significance towards your carbon footprint.
	Net-Zero	The balance between all GHG emissions produced and removed from the atmosphere.
	Operational Control	The operational control approach reports on 100% of anything where you have the authority to introduce and implement an organisation's operating policies.
	Operational Boundaries	Identifying on-site and off-site activities, shared facilities, processes and services.
	Organisational Boundary	Organisational boundary helps organisations determine their direct carbon footprint.
OPEX	**Operating Expenses**	Operating Expenses (OPEX) are an institution’s day-to-day expenses (e.g., employee salaries, rent, utilities)
SBTi	**Science Based Targets Initiative**	The Science Based Targets initiative (SBTi) promotes best practices, and well-defined guidelines to reduce emissions and provides target-setting methods based on climate science. Science-Based Targets (SBTs) focus on the number of emissions that needs to be decreased to comply with the targets set out in the Paris Climate Agreement.
	Scope	Defines the operational boundaries in relation to indirect and direct GHG emissions.
	Supply Chain	A network of organisations (e.g., manufacturers, wholesalers, distributors, and retailers) involved in the production, delivery, and sale of a product to the consumer.
	Upstream	Upstream emissions are the indirect emissions related to a reporting company’s suppliers, from the purchased materials that flow into the company to the products and services the company utilises.
	Value Chain	Value chain refers to all of the upstream and downstream activities associated with the reporting organisation’s operations.
	Well-to-Tank	Well-to-Tank (WTT) emission actor (upstream or indirect emissions) is an average of all the GHG emissions released into the atmosphere from the production, processing and delivery of a fuel or energy vector.
	Verification	An independent assessment of the reliability (considering the GHG Protocol 5 principles of Relevance, Completeness, Consistency, Transparency, and Accuracy) of a GHG inventory.



1

Introduction To Carbon Accounting

Fundamentals of Carbon Emissions
Scope 1 & 2

The GHG protocol

The Greenhouse Gas Protocol is a widely renowned global carbon accounting body that provides an internationally recognised greenhouse gas (GHG) accounting and reporting standard for businesses. It involves the collaboration of businesses, non-governmental organisations, governments, and others convened by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). The GHG protocol is the most widely used set of carbon accounting standards globally.

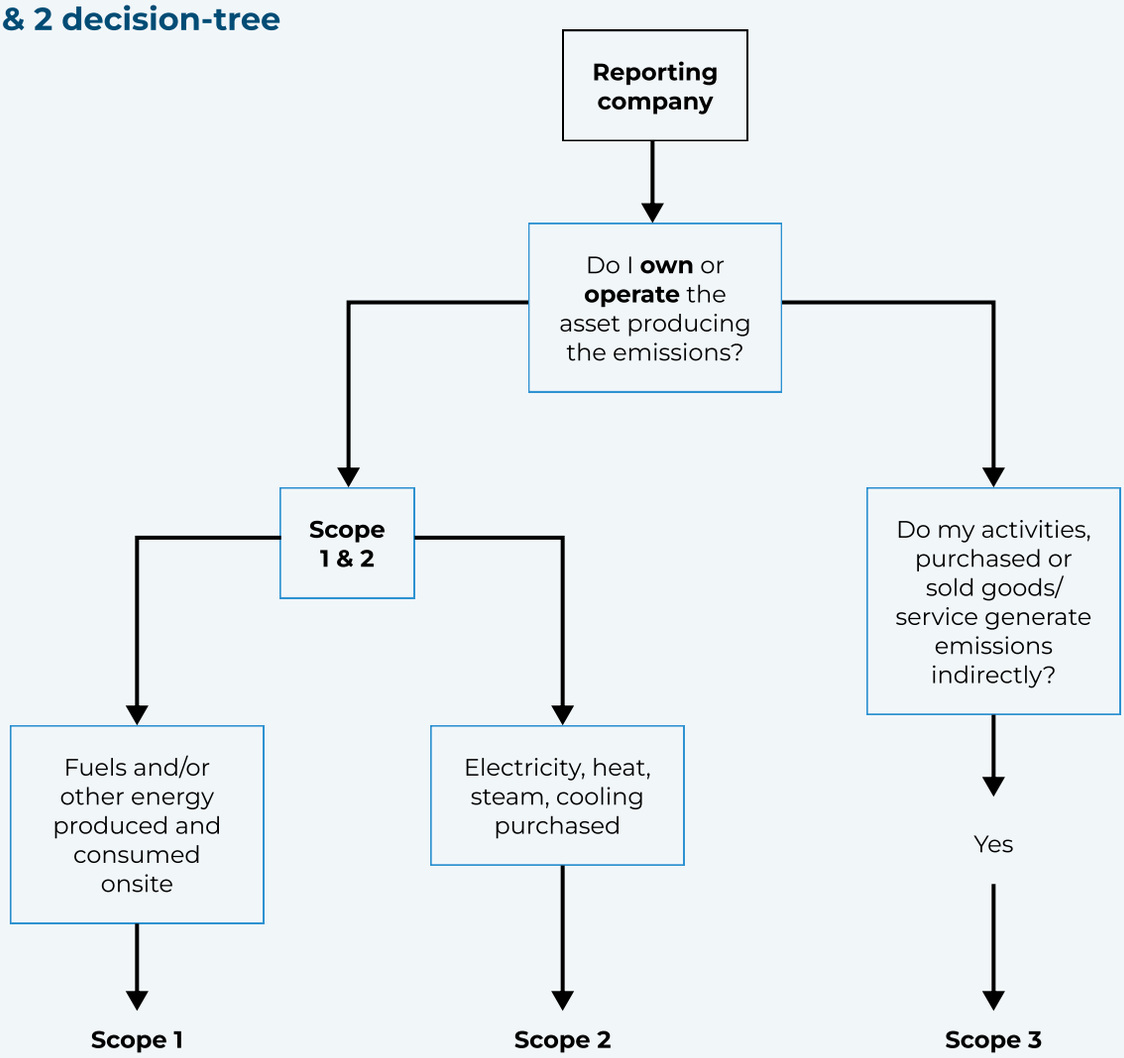
The importance of measuring

By adhering to the GHG Protocol, companies create well designed and maintained corporate GHG inventories. This serves increasingly important business goals, including:

- Identifying emission hotspots; managing GHG risks and identifying reduction opportunities; public reporting; compliance to emerging legislation; participation in voluntary GHG programs and markets; recognition for early voluntary action

Net Zero can only be reached by tracking reductions against an *accurate, consistent* and *complete* carbon footprint.

Scope 1 & 2 decision-tree



Scope 1

Scope 1 includes the *direct emissions* from assets that are **owned** or **controlled** by the reporting company. This includes:

- The combustion of solid, liquid, and gaseous fuel used to generate *energy, heat* or *steam* for stationary or mobile equipment
  - This can include things such as: wood, coal, peat (S); petroleum, gas oil (L); natural gas (G); refrigerants
- Typical equipment that consumes these types of fuels are owned and operated fleet, generators, or gas used for heating/refrigerants used for cooling in buildings and warehouses

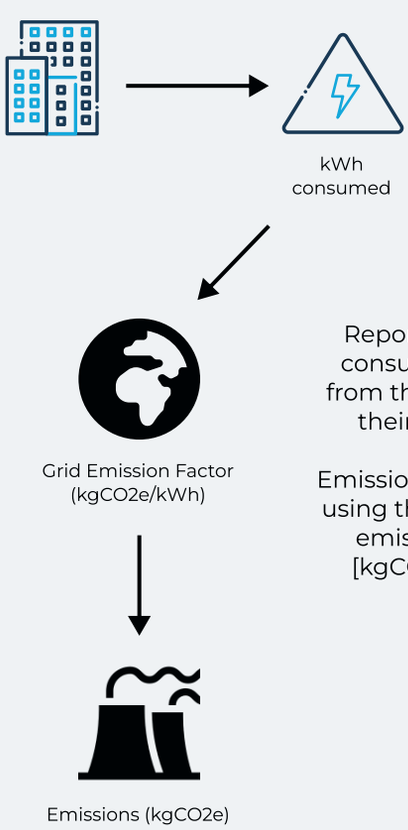
Scope 2

Scope 2 includes the indirect emissions from the production of ***purchased electricity, heat*** and ***steam*** by the reporting company in the reporting year, for use in its own sites, EVs and other owned or operated assets requiring electricity. There are 2 approaches for calculating Scope 2 emissions:

1. The ***Location-based method*** reflects the average emissions intensity of the grid on which the energy consumption occurs by the reporting company.
2. The ***Market-based method*** calculates emissions based on the electricity that companies have actively chosen (or lack thereof) by using supplier-specific intensity factors of the selected utility supplier

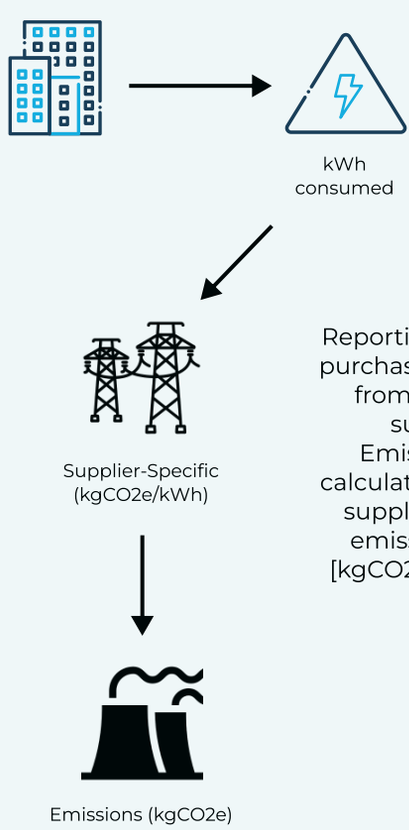
Reporting using the location-based method is mandatory – companies with operations in markets providing product or supplier-specific data shall report Scope 2 according to a location-based method **and** a market-based method.

Location-based method



Reporting company consumes electricity from the grid on which their activities are located.
Emissions are calculated using the grid's average emission intensity [kgCO2e per kWh].

Market-based method



Reporting company purchases electricity from a specific supplier.
Emissions are calculated using the supplier-specific emission factor [kgCO2e per kWh].

Fundamentals of Carbon Emissions
Scope 3

Scope 3 basics

Scope 3 includes *all other sources of indirect emissions* that occur as a consequence of the activities of the reporting company but occur from sources *not owned or controlled* by them.

The standard divides Scope 3 emissions into 'upstream' and 'downstream' emissions. The distinction between the two is based on the financial transactions of the reporting company, with:

- **Upstream** relating to indirect GHG emissions from ***purchased*** or ***acquired*** goods and services, and
- **Downstream** relating to the indirect GHG emissions from ***sold*** goods and services

The standard categorises Scope 3 emissions into a total of 15 distinct categories, listed in the table below. The aim of this categorisation is for companies to organise, understand and report on the diversity of emissions stemming from activities within a corporate value chain. To avoid the double-counting of emissions within a carbon inventory, the 15 categories are designed to be mutually exclusive.

GIRP member firms & Scope 3 emission hotspots

With a focus on the distribution and delivery of Pharmaceutical products in Europe, GIRP's network range covers dozens of businesses with varying business models, offering tailored goods and services.

The table below summarises the expected Scope 3 emission hotspots for companies in the Biotechnology and Pharmaceutical, the Healthcare Provision, and the Intermodal Transport & Logistics industries. A company may refer to this table as indicative guidance on where to expect emissions to lie within their carbon inventory.

			Materiality		
	Scope	**Name**	**Biotech & pharma industry***	**Healthcare provision industry***	**Intermodal transport & logistic industry***
Upstream Categories	Scope 3 Category 1	Purchased Goods & Services	60%	24.2%	13.9%
	Scope 3 Category 2	Capital Goods	3.8%	6.2%	5.6%
	Scope 3 Category 3	Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	9.8%	11.8%	33.8%
	Scope 3 Category 4	Upstream Transport & Distribution	5.8%	3%	28.7%
	Scope 3 Category 5	Waste from Operations	0.9%	2.6%	0.1%
	Scope 3 Category 6	Business Travel	1.1%	0.7%	0.2%
	Scope 3 Category 7	Employee Commuting	2.3%	1.4%	2.8%
	Scope 3 Category 8	Upstream Leased Assets	0.1%	0%	0.1%
Downstream Categories	Scope 3 Category 9	Downstream Transport & Distribution	1.2%	2.2%	4.4%
	Scope 3 Category 10	Processing of Sold Products	0.1%	28.8%	0%
	Scope 3 Category 11	Use of Sold Products	13.5%	16.8%	9.7%
	Scope 3 Category 12	End-of-Life Treatment of Sold Products	1.1%	1.8%	0%
	Scope 3 Category 13	Downstream Leased Assets	0%	0.2%	0.1%
	Scope 3 Category 14	Franchises	0.3%	0.3%	0.4%
	Scope 3 Category 15	Investments	0.3%	0.3%	0.4%
		Total	100%	100%	100%

Table 1. Expected Scope 3 Emission (tCO2e) Weightings (%) by Sector. The table above depicts the expected weightings for each Scope 3 category, as per the Biotech & Pharma, the Healthcare Provision and the Intermodal Transport & Logistic Industries.
*Weightings were calculated as per the CDP's [Carbon Disclosure Project] industry disclosures in 2022. They are indicative weightings based on industry averages.

Carbon Emissions & GIRP's Value Chain

Consolidation approaches

Defining the organisational boundary is a key step in corporate carbon accounting. This will define which activities in the company's value chain will be categorised as direct (i.e. Scope 1) or indirect (i.e. Scope 2, Scope 3). There are 3 key consolidation approaches:

1. Equity share: a company accounts for GHG emissions based on its *share of equity in the operation.*
2. Financial control: a company accounts for 100% of the GHG emissions over which it has *financial control.*
3. **Operational control:** a company accounts for 100% of the GHG emissions over which it has *operational control*. This is typically the most common approach for any company outside of the financial services sector, and what is pictured in the diagram below.

Corporate carbon inventories & double counting

The GHG Protocol's definition of Scope 1 and 2 is designed to prevent any risk of double counting. It does so by ensuring that:

1. Emissions are reported in Scope 1 only by the company directly generating them, and
2. Scope 2 emissions are reported solely by the company consuming the energy

Meanwhile, some forms of double-counting are seen as an inherent part of Scope 3 accounting. One company's Scope 1 & 2 may be the Scope 3 of another. For instance, a manufacturer's fuel and energy consumed in their operations creates their Scope 1 and 2 emissions. A wholesaler buying a product from a manufacturer would account for these fuel and energy-related emissions in their Scope 3 Category 1 (Purchased goods and services). Similarly, Scope 3 emissions can be counted twice across the value chain in two separate companies' Scope 3 inventory. For instance, a wholesaler may allocate emissions from the transport and distribution of their goods to a retailer in Scope 3 Category 4 (Upstream Transport and Distribution), a retailer may also allocate the emissions from this transport to their own Scope 3 Category 4 inventory.

This double counting occurs because the purpose of Scope 3 is to fully account for the emissions that have occurred to allow an entity to operate.

As seen in the diagram below, GIRP's network lies across the value chain, from manufacturers to wholesalers, to retailers. While each company will have a distinct Scope 1 & 2 inventory, Scope 3 emissions will fall across the entire group and often be shared by the entire value chain.

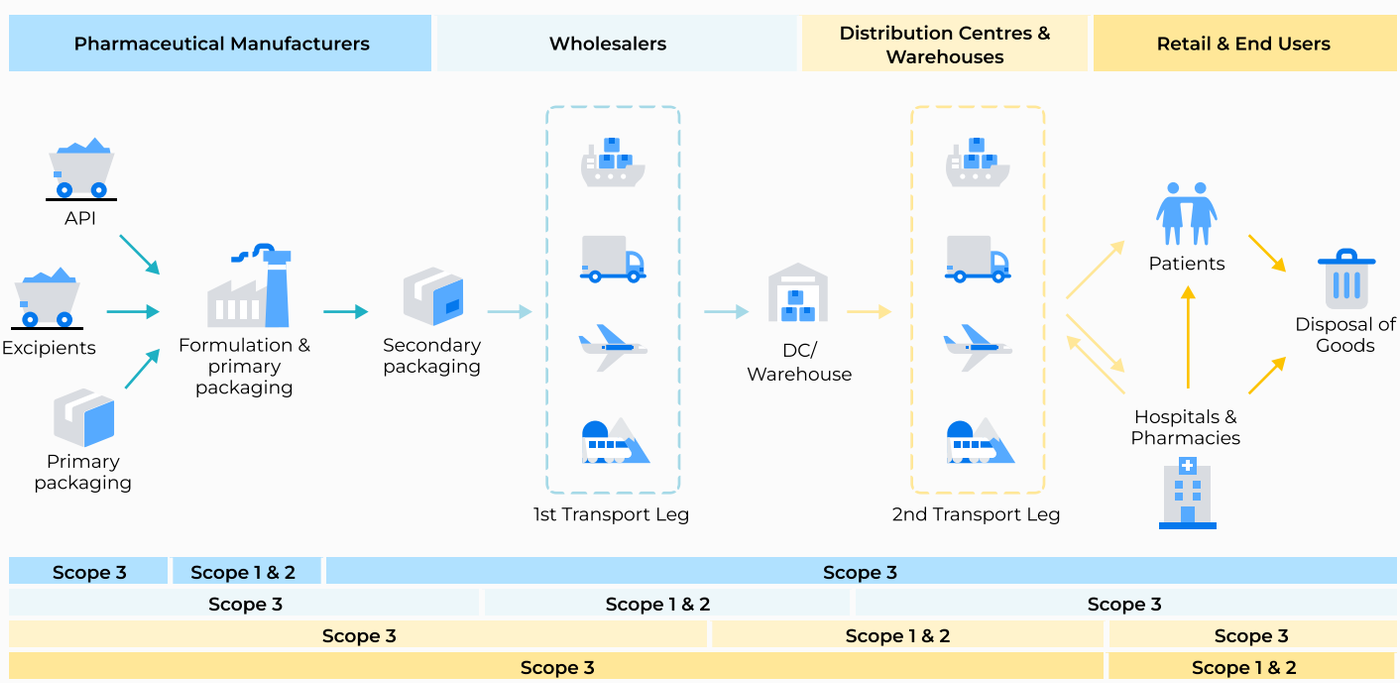


Figure 1. GIRP's Value Chain. The diagram above depicts GIRPs value chain, including all parts of where different stakeholders may lie. Based on the reporting company's sector, they can interpret where Scope 1, 2 and 3 are most likely to fall within their value chain. This will likely differ company to company and business model to business model but can serve as a starting point in understanding the scopes and their relevance to a business.

2

Data Challenges & Insights

Process Outcomes & Findings

GIRP's network have been challenged by the high volume of Scope 3 data requests received and the need to respond to them with accurate data. To better understand the complexities of the challenges arising from these requests, a series of stakeholder interviews with central ESG teams were conducted across a dozen companies.

During the interviews, 4 sustainability-related pillars were explored:

1. Sustainability governance approach
2. Existing carbon inventory approaches
3. Incoming and outgoing data requests
4. Data quality & organisation

The results of the interviews found similar traits among the leaders and the followers in terms of sustainability best practice and data harmonisation. The interviews showed that across both leaders and followers, common data and calculation challenges were encountered.

In general, the industry is faced with an increasingly important need to harmonise data collection and provision, and work towards adopting a streamlined sectoral approach.

The below table summarises the findings from the conversations with stakeholders, and the convergence towards shared challenges.

	Internal sustainability resources	Scope 1, 2, and 3 calculation approach	Incoming & outgoing data requests	Data quality & organisation
Leading	• Centralised ESG team • Data (site/department) owners across business • Sophisticated data management system • External assurance of all Scopes • Involved finance team	• Centralised system • Automatic data input • Use of primary (activity) data (i.e. data from specific activities within the value chain) • Limited or reasonable level of assurance across footprint	• Product-specific carbon footprints • Apportionment of data (e.g. space within warehouses or delivery vehicles) • Annexes on contracts (e.g. renewable energy requirement, SBTi alignment, and ability to share data)	• Data management software exists • Clearly defined roles & responsibilities (i.e. data owners, clear data storage)
Following	• Small team/limited resource • No data management system • Uninvolved finance team	• Non-centralised system • Manual data input • Several assumptions and estimations made • Excluding emissions due to lack of accurate data • No assurance or verification of footprints	• Undefined boundaries & scopes • Lack of understanding on data quality and data expectations	• No internal method of storing data • Reliance is predominantly on excel • Fragmentation between data owners • Unclear roles & responsibilities (i.e. data is fragmented across the business and there is a lack of data ownership)

Common challenges faced

1.Difficulty in providing customer, shipment, and product-level emissions
2.Difficulty in providing primary activity data for transport & distribution
3.Unclear Scope 3 category and calculation boundaries, with specific reference to Categories 4 & 9
4.Little to no accuracy in downstream transportation & distribution emissions calculation due to lack of data
5.Unsure what to measure and how to measure it for full Scope 3 boundary
6.None or very few levers to influence suppliers
7.Cultural & geographical factors impacting ability to calculate, disclose and ultimately reduce emissions

The following section explores and elaborates these challenges in greater depth and proposes best-practice solutions. It also gives insights into the future, GHG Protocol-aligned recommendations and the best way forward.

Aims & objectives

The focus of the following section is to provide GIRP's members and wider network with a sectoral approach for the apportionment of emissions in Upstream and Downstream Transportation & Distribution (Categories 4 & 9, respectively). The emphasis on emissions from transport and distribution is driven by the complexity of data requests (both incoming and outgoing) and the expected materiality of this part of the value chain.

Beyond the priority challenges of T&D, this section also covers Purchased Goods and Services (Category 1). Due to the nature of the pharmaceutical industry, emissions from this category are anticipated to significantly contribute to GIRP member's carbon hotspots, especially as data quality improves and engagement with suppliers increases.

Ultimately, the objective of this section is to:

- Highlight the challenges faced by GIRP members,
- Provide recommendations aligned with best practice,
- Encourage data organisation, and
- Drive collaboration

The following themes are covered:

1. Requesting data
2. Receiving data
3. Receiving emissions data requests
    a. Life cycle assessments
4. Improving data quality
5. Estimating data
    a. Inclusion & estimation case study
6. Data organisation
    a. Environmental management systems
7. Sustainability governance
    a. Governance case study
8. Other data challenges & solutions

Finally, the section following is a deep dive on the intricacies specific to transport & distribution, i.e. Category 4 [Upstream Transport & Distribution] and Category 9 [Downstream Transport & Distribution].

Data Challenges & Solutions
Requesting data

What data should I request from my third-party supplier to be able to calculate emissions from my Scope 3 Category 4 [Upstream Transport & Distribution] in line with the GHG Protocol and best practice?

It ultimately depends on the data quality you are expecting to receive, how detailed your requests are and the relationship with the data provider. Where possible try to request the best quality data, however if this is not available then focus on receiving the next best data.

The following steps summarise how to approach data requests, specifically for your upstream and downstream transport & distribution categories.

1

Understand your boundaries

Are you requesting data for the transport & distribution of products you have purchased?

Yes – Category 4

Are you requesting data for the transport & distribution of products you have sold, **and** you have paid for this transport and distribution?

Yes – Category 4

Are you requesting data for the transport & distribution of products you have sold, and the customer has paid for this transport and distribution?

Yes – Category 9

See more on Category 4 allocation on page 39.

2

Understand the data quality hierarchy

Once you've understood where to allocate the emissions, you need to understand the type of data you'd like to receive and align your expectations.

Fuel based data: this is the best quality of data you can obtain for transport & distribution calculations. Fuel based data requires data providers to know the portion of fuel used in deliveries and storage of products, specifically attributable to you.
Having fuel-based data allows you to apply fuel-specific emission factors that include emissions from the combustion, raw material extraction, and manufacturing and processing of the fuel.

Distance based data: this is the next best data quality and includes obtaining data on
1. Distance traveled per journey
2. Tonnage of your purchased/sold products being shipped per journey

Using the above primary data, a tonne.km figure is obtained on a journey-by-journey basis. The sum of these tonne.kms can be multiplied by appropriate emission factors. N.B. tonne.km emission factors are generally more accurate than km emission factors, but where only distance data is provided – km emission factors are available.

Spend based data: this is the lowest level of data quality on the hierarchy, but it is typically readily available. When requesting spend, ideally, this should be split by transport type, i.e.: £4,130 – Road, £10,001 – Air, £20,100 – Sea

Spend-based emission factors can be applied to this data. These are based on Input-Output Models that are applied internationally and then environmentally extended.
For more information on data quality, see pages 25 - 29.

3

Make the request as user-friendly as possible

Companies are only now starting to prepare themselves for these types of data requests. However, they may still not fully comprehend the level of detail and structure to the data they need to provide.

It is therefore crucial to provide concise but clear requests on the data expected.

1. **Prepare**
   Prepare a draft of the data you are expecting, from fuel-based, to distance-based, to spend-based.
   For instance, preparing a data collection template of the data to be received. See page 78 & 79 for an example.
2. **Engage**
   Set up calls with the data provider to explain why you are requesting this data, how it feeds into your own carbon inventory needs, specifically Scope 3.
   In these calls, define your expectations and ask to confirm what can be provided based on their internal systems and structures.
3. **Facilitate**
   You can facilitate this data collection by sharing the Scope 3 Category 4 & 9 (and equally, Category 1 & 2) data collection templates prepared for this exercise. See page 78 & 79 in the Appendix for a preview of the template.
4. **Communicate**
   Keep open the channel of communication.
   Set recurring meetings to see the progress of the data collection and if this aligns with your initial expectations.

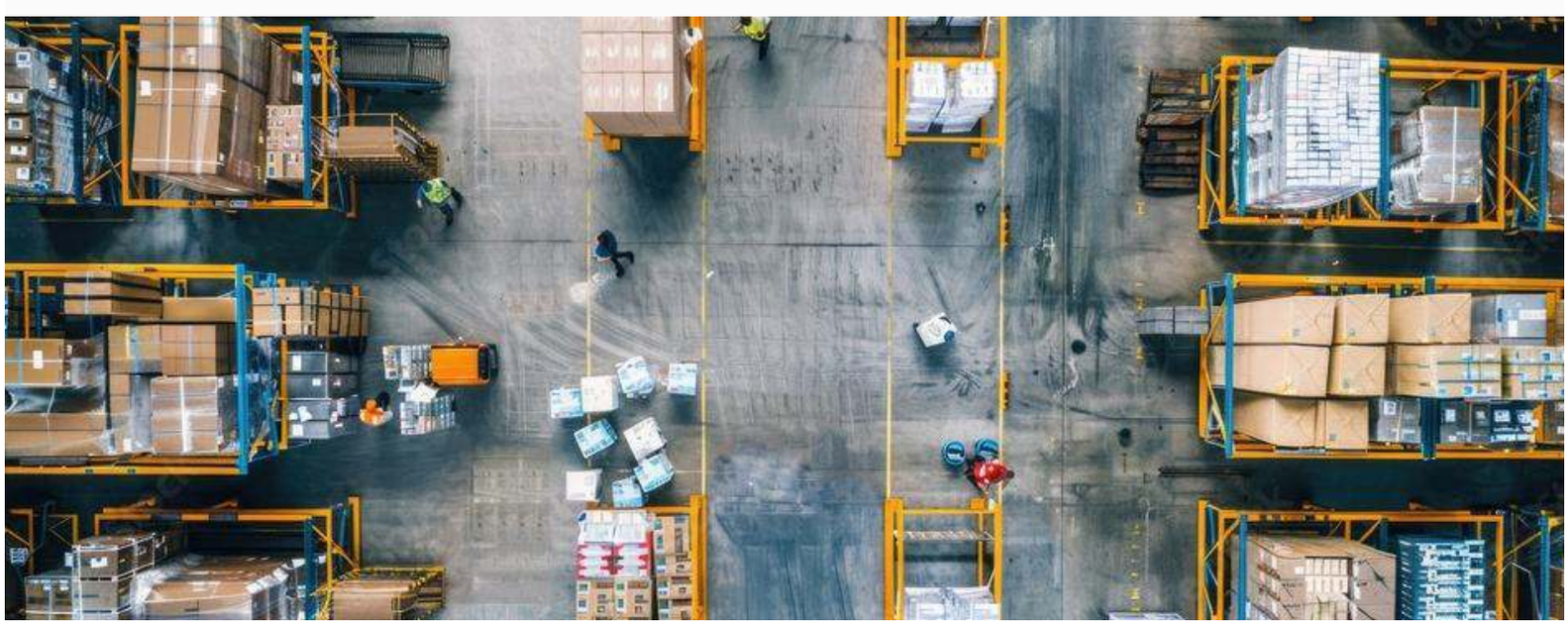
Assess gaps and the estimations needed to fill these.

4

Analyse, transform, calculate & improve

Once data has been received from the provider, it should be analysed before it is used in emissions calculations. Over time, it is also expected for data quality to improve. The next page elaborates on data quality improvement and levers that companies can take to drive this.

Bear in mind that if data is being requested from multiple stakeholders, this will likely differ in terms of quality and delivery. In this case, it is possible to apply a hybrid approach to calculations, which may include some fuel-based, some distance-based and some spend-based data.



Data Challenges & Solutions
Receiving data

What data do I need to request to calculate my relevant Scope 3 categories?

Different data, and data granularity, should be requested for different Scope 3 Categories. It may be useful to provide your data supplier with the different levels of data quality laid out in the table below. For more detailed requirements for each Category, including calculation approach, refer to the 'Activity Data Requirements' in Section 2 of the report – Scope 3 Deep-Dive.

Scope 3 Category		Highest quality data	Average quality data (see Improving & Estimating Data)	Lowest quality data (see Improving & Estimating Data)
Category 1	Purchased Goods & Services	Supplier-specific Emission Factors for single products or services purchased	Proxy data in the form of industry benchmarks	Spend on purchased goods & services (i.e. OPEX through a purchase ledger, £, $, etc.)
Category 2	Capital Goods	Supplier-specific Emission Factors for single products or services purchased	Proxy data in the form of industry benchmarks	Spend on capital goods (i.e. CAPEX through a purchase ledger, £, $, etc.)
Category 3	Fuel- and Energy-Related Activities not included in Scope 1 & 2	Primary activity data from owned and operated activities (i.e. Scope 1 & 2 data)	Proxy data in the form of industry benchmarks and secondary data (i.e. bills)	-
Category 5	Waste from Operations	Weight (kg) of waste Treatment method per waste type (i.e. recycling, landfill, incineration)	Proxy data in the form of weight	Spend on waste services
Category 6	Business Travel	Fuel consumption of transport being taken by employees for business travel	Distance travelled by employees for business travel	Proxy data in the form of regional benchmarks or spend on business travel services
Category 7	Employee Commuting	Questionnaire data on employee commuting	Fuel consumption of transport being taken by employees commuting	Distance travelled by employees for commuting
Category 8	Upstream Leased Assets	Primary activity data from the leased asset (i.e. kWh elec, litres of gas)	Proxy benchmarks (i.e. kWh per square meter based on building type)	-
Category 10	Processing of Sold Products	Buyer-specific processing data, including electricity, gas, and waste	Proxy data in the form of industry benchmarks	-
Category 11	Use of Sold Products	Consumer-specific use data, including electricity consumption	Proxy data in the form of industry benchmarks	-
Category 12	End-of-Life Treatment of Sold Products	Consumer-specific disposal data, including treatment method	Advisable treatment method advertised per product sold (assumption-based)	Proxy data in the form of weight
Category 13	Downstream Leased Assets	Primary activity data from the leased asset (i.e. kWh elec, litres of gas)	Proxy benchmarks (i.e. kWh per square meter based on building type)	-
Category 14	Franchises	Primary activity data from all franchise operations	Average proxy data in the form of activity data per FTE, floor area, franchise type	-
Category 15	Investments	Scope 1 & 2 emissions data for invested companies	-	-

I am unsure of the accuracy of the data provided by my data partners. How do I calculate with higher confidence, given these uncertainties?

Data provision can vary in quality due to numerous reasons including lack of verification, human error, system error, to name a few. This is especially common with companies lacking sustainability experience and resource. It consequently presents a challenge for reporting companies – to what extent can the data provided for calculation be trusted? How does one proceed if there is a low confidence in the data provided?

Activity, or raw data, will always be preferred to assumptions or estimations. So, if available, this data type is strongly recommended in the data collection phase. It is important that a methodology is written up so that there is an audit trail in place if calculations are ever replicated or verified.

What does a methodology entail?

- Data sources (i.e. meter readings, fuel receipts, purchase ledgers)
- Calculation steps
- Major assumptions or estimations
- Limitations and emission exclusions (including reasoning and rationales)

Optional: It is optional to include a data improvement journey/plan. See page 25 for Improving Data Quality.

In case primary or secondary data is unavailable, it is possible to make high-level assumptions or estimations. If this is the case, it is integral these are noted and rational provided – with the aim to improve on these assumptions or estimations in future years.

I am being charged for data by one of my data partners. How do I approach this situation? And what do I need to consider in future contracts?

Supplier selection is key, not just in sustainability, but across the business (e.g. costs, risks). The inability to access environmental data due to organisations putting a price on this information defies the principle of transparency. Despite this, some of GIRP's network is faced with this issue when attempting to collect data.

This issue should be considered, and ideally, included in contract renewal negotiations. Although EcoAct recognises purchase power varies by organisation. Supply chain partners are being pressured to become more transparent, even at a regulatory-level (e.g. CSRD). As such, if possible, companies should move towards working with suppliers who integrate data-sharing in their service provision. With time, premiums on data-sharing will decrease, and open data sharing will become standard practice.

Data Challenges & Solutions
Receiving emissions data requests

How can I provide the highest quality transportation emissions data for sold (upstream) or purchased (downstream) goods for a client?

Receiving emissions data requests is becoming increasingly common, as companies familiarise themselves with sustainability-related practices and more specifically, carbon reporting. However, note that providing direct emissions data at shipment, customer or transport-type level is typically best-practice. It is typically more common to provide activity data (in the form of tonne.kms, for instance), that customers can use to apply their own emission factors and calculations to. Ultimately, the level of confidence in the emissions data you provide is reliant on the way in which data is collected and organised internally. Ideally, you should have visibility on: customer split, transport method split, and journey split.

Apportioning Emissions

By Shipment

Example

When a customer asks you to provide the emissions solely from **1** (or multiple single) shipment(s) of the product you've sold to them.

Inputs for the Emission Figure

If you've outsourced the shipping for this sold product, you will need:

- Transport method (i.e. road, sea, air)
- Weight of the shipment
- Distance travelled for this shipment
- DEFRA Emission Factors for the relevant reporting year

Calculation

1. Multiply the:

Weight (tonnes) x Distance (km) = tonne.km

2. Multiply the:

Tonne.km (above) x DEFRA EF* = tCO_2e per shipment

*N.B. The DEFRA Emission Factor will differ based on transport method, and data available. For this calculation, you can use the tonne.km emission factors. See page 77 for more information on Emission Factor datasets.

Importance

Increasingly, customers will want to know the emissions specifically attributable to:

1. Individual journeys,
2. Entire transport & distribution activity,
3. Specific transport methods.

This will contribute to visibility on emissions from the value chain and can aid the implementation of reduction pathways (for instance, through more conscious purchasing habits, or engagement with suppliers towards lower carbon alternative transport & distribution methods).

Additionally, clients and other partners along the value chain (both upstream and downstream), will request the primary data supporting these emissions calculations. Ultimately, this is driven by a need for each partner in the value chain to calculate their own Scope 3 inventories.

While providing emissions data directly, having the primary data available at hand can hugely contribute to more transparency and collaboration across the network.

For more information on calculating emissions from transportation, see pages 58-61.

By Customer

When a customer (Company A) asks you to provide the emissions from the transport and distribution of purchased or sold goods, only attributable to them.

To carry out the emissions calculations to this level of detail, you must have data organised so that there is visibility on the transport occurring by **customer**. See page 30 for more information on data organisation.

You will also need the transport method to be able to apply the correct and most accurate emission factors, but in this apportionment method emissions aren't viewed by transport type.

See table below for an example of a data collection & calculation template:

Data necessary for Company A's emissions

Journey #	Customer Name	Distance (km)	Weight Shipped (tonnes)	Tonne.km	DEFRA Emission Factor (kgCO2e/ tonne.km)	Total Emissions (kgCO2e)
1	Company A	25	0.5	12.5	Company A	25
2	Company A	400	0.443	177.2	Company A	400
3	Company A	250	0.122	30.5	Company A	250
4	Company B	25	0.34	8.5	Company B	25

1. Multiply the: **Weight (tonnes) x Distance (km) = tonne.km**
2. Repeat [1] for each single journey (row) attributable to Company A.
3. Sum the tonne.km figures from each individual journey (row) and multiply by the appropriate DEFRA emission factor, ensuring the tonne.km unit is applied.

By Transport Type

When a customer (Company A) asks you to provide the emissions from the transport of purchased or sold goods, through a specific transport type.

Similarly to the apportionment methods above, there must be visibility on both **customer and transport type.** Only with this visibility can you carry-out transport-type-specific apportionment of emissions.

See table below for an example of a data collection & calculation template:

Journey #	Customer Name	Transport Method	Distance (km)	Weight Shipped (tonnes)
1	Company A	Truck >25t	25	0.5
2	Company A	Air freight	400	0.443

1. Multiply the: **Weight (tonnes) x Distance (km) = tonne.km**
2. Repeat [1] for each single journey (row) attributable to Company A.
3. Sum the tonne.km figures from each individual journey (row)
4. Multiply by the relevant DEFRA emission factor, ensuring the tonne.km unit is applied. DEFRA offers emission factors for: Air freight, road freight, and sea freight, split by specificities of each transport method (i.e. short haul, >24tonnes lorries, RoRo Ferry etc.)

Data Challenges & Solutions
Life cycle assessments

Requests have been made about product-specific carbon footprints. What are these and how can we respond to such requests?

Increasingly, Product Carbon Footprints (PCF) are being requested by organisations to meet their environmental management goals. These footprints can be a challenging request, especially for those companies that are at the start of their sustainability reporting journey.

Companies receiving these requests should begin by engaging with the requestee –

- What product(s) are they interested in knowing the carbon footprint of?
- Is there a common reoccurrence?
- Is it the most emission-intensive or the highest volume sold?

Product life cycle accounting is a subset of Life Cycle Assessments (LCA). Understanding LCAs builds the base for a solid Product Carbon Footprint.

Life cycle assessments

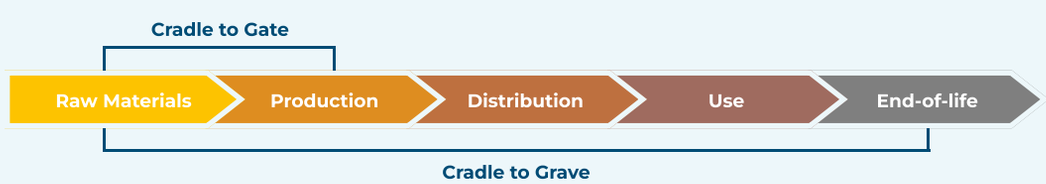
LCAs assess the potential environmental impacts of a product (e.g. single medicinal product) or service (e.g. medicinal storage & transportation) throughout its life, including the emissions associated with the product from start to end. It provides an in-depth understanding of these impacts of the products and services provided, informing your decisions on climate and sustainability strategy. It also builds transparency and confidence on sustainability claims and reporting.

An LCA study requires a thorough inventory of the energy and materials that are involved across the supply chain and value chain of a product. They require significant resources and time to conduct properly which may hinder your ability to provide data for any requests in the short-term.

To begin, identifying one key product to analyse can trial an LCA Pilot study. Internal collaboration will be key with the size and maturity of an organisation directly impacting the ability to conduct such an assessment.

An LCA can be completed in the following formats:

- **Cradle-to-gate:** An assessment of a partial product life cycle from resource extraction (cradle) to factory gate (pre consumer)
- **Cradle-to-grave:** An assessment of the whole product life cycle from resource extraction to use phase and disposal (grave)



LCA methodologies are closely aligned to Scope 3 as data quality greatly affects the understanding of the supply chain emissions and impacts. Higher quality data ensures a robust lifecycle assessment and accurate calculation of the environmental impact of your product.

Gathering supplier-specific data is crucial to maximise the value of the assessment and stand to third-party reviews for external claims. Some examples of supplier-specific data include:

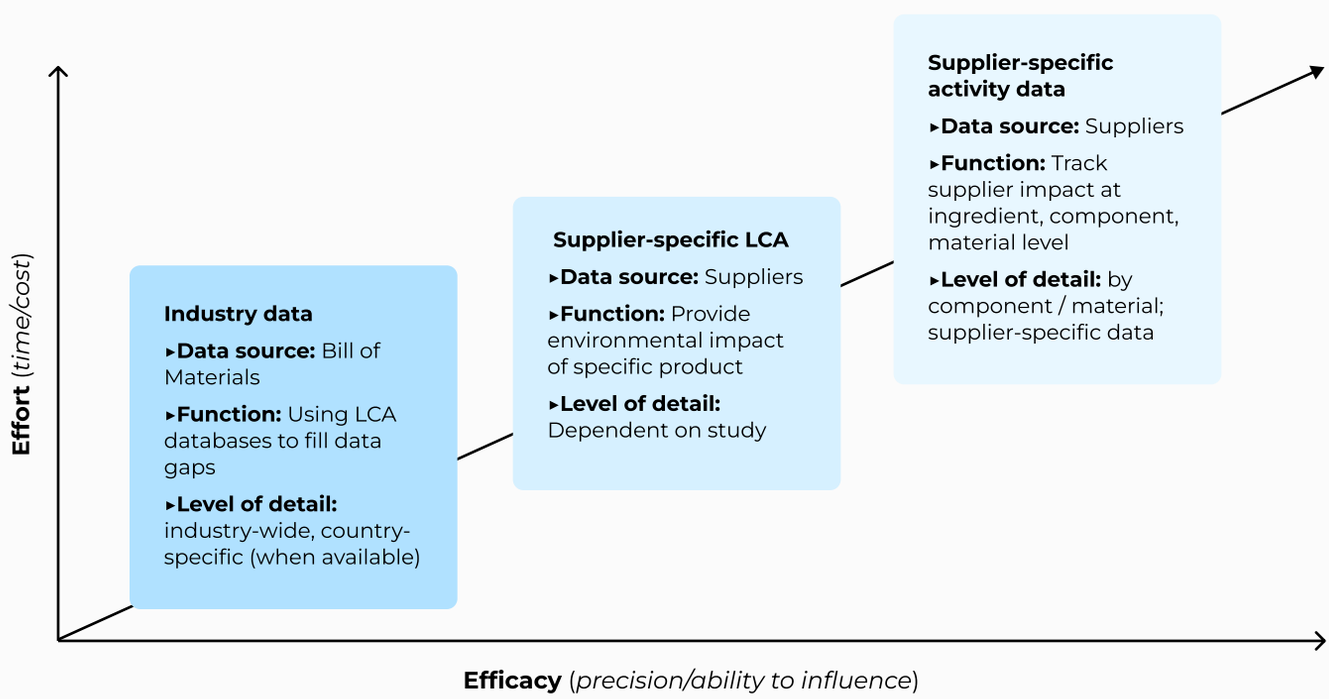
- Energy consumption per unit of product
- Raw material inputs per unit of products
- Waste produced per unit of product
- Waste treatment method(s)
- Production location
- Transport method
- Packaging uses

The steps below outline the approach to conduct an LCA, aligned with the methodology prescribed by the International Organisation for Standardization (ISO) – ISO 14040 & ISO 14044 Standards.

Step 1. Define project boundary	• Define objectives & boundary approach (cradle to grave vs. cradle to gate) • Define the functional unit (e.g. per kg of end product) • This is undertaken to understand what the LCA is for, what is to be included and excluded
Step 2. Process mapping	• Determine the **energy** and **carbon flows, input** and **output material** • Develop process maps which will inform the data collection & calculation phases • Identify contacts and data requirements to complete the LCA

Step 3. Data gathering & research	• Collect & collate data from company stakeholders, such as existing datasets, by engaging with agreed:
	  • Internal contacts
	  • Suppliers
	  • Technical representatives
	• Fill data gaps by reviewing existing literature

Step 4. Calculations & modelling	• Model the data using an LCA software
Step 5. Interpret, present & share results	• Determine overall carbon footprint of offered products or services and identify hotspots • Engage with the value chain to strategically work on these major hotspots and decarbonise from there



Data Challenges & Solutions
Product carbon footprints

Requests have been made about product-specific carbon footprints. What are these and how can we respond to such requests?

The GHG Protocol has released specific guidance for the calculation of Product Life Cycles, with the aim of guiding users through the calculation of a PCF.

This page relays an overview of what a product carbon footprint is as well as a summary of the steps involved in product accounting and reporting.

Please note, if attempting to calculate a product carbon footprint, please refer to the Product Life Cycle Accounting Reporting Standard for further guidance.

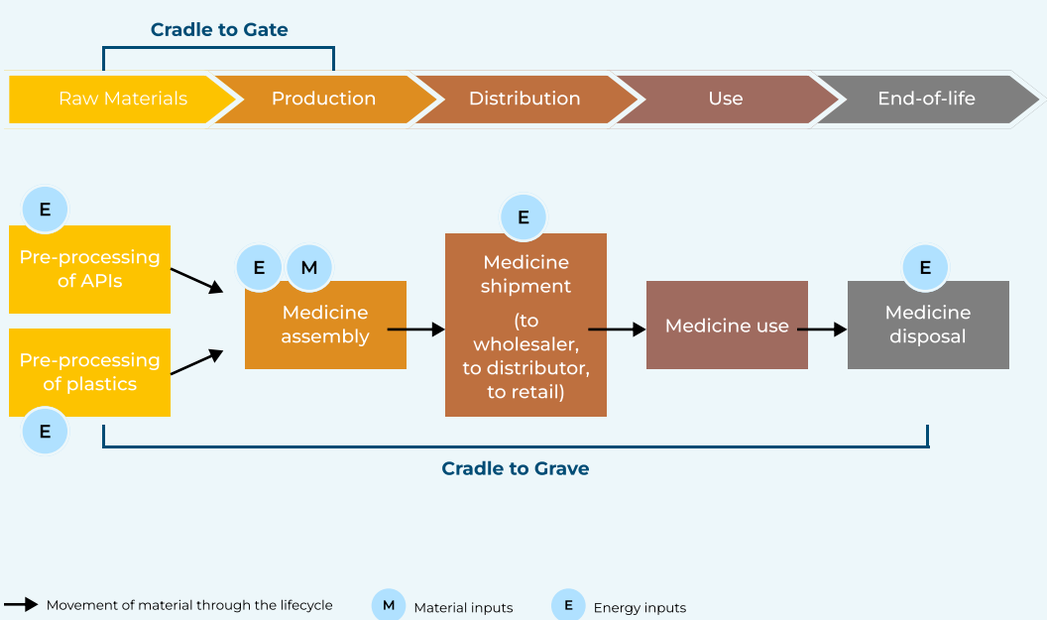
Product Carbon Footprints

Product life cycle accounting is a subset of Life Cycle Assessments (LCA), which seeks to quantify and address the environmental aspects and potential environmental impacts throughout a product's life cycle, from raw material extraction to end-of-life waste treatment. They are a subset of LCAs because they focus only on the climate change impact category of an LCA.

The Product Standard builds on the framework and requirements established in the ISO LCA standards and PAS 2050, with the aim of providing additional specifications and guidance to facilitate the consistent quantification and public reporting of product life cycle GHG inventories.

A product carbon footprint uses the attributional approach, meaning that GHG emissions are attributed to the studied product by linking together attributable processes along its life cycle. It makes use of primary data provided by a supplier/customer, or average (secondary) data for a given process.

See the diagram below for a sample process map for a general medicinal product (Cradle to Grave inventory).



The steps below outline the approach to conduct a PCF, aligned with the methodology as described by the GHG Protocol.

Step 1. Establish the scope	• Choose a studied product • Choose a unit of analysis (functional unit) • Identify whether a cradle-to-gate inventory is appropriate • Identify if any additional GHGs are applicable to the product or sector (i.e. GHGs from anaesthetics)
Step 2. Boundary setting	• Understanding the life cycle stage definitions & descriptions • Specific attributable processes • Relevant non-attributable processes • Justified excluded attributable processes (including significance thresholds) • Use and end-of-life profiles • Time period covered • Method used to calculate land-use change impacts
Step 3. Collecting data & assessing data quality	• Identify the type of primary data to collect for processes under the reporting company's control • Processes not under the reporting company's ownership/control where primary data should be collected • Secondary data sources and default data values
Step 4. Allocation	• Allocation method & appropriate allocation factor • Recycling allocation method
Step 5. Assessing uncertainty	• Default uncertainty values • Likely sources of uncertainty
Step 6. Calculating inventory results	• Global Warming Potential (GWP) values to use • Default emission factors

Data Challenges & Solutions
Improving data quality

How can I improve my data quality over time? What levers can I pull?

As the volume of data requests increase over time, companies familiarise themselves with the data they need to provide.

However, getting this data to improve it is a completely separate discussion and often takes time, effort and engagement. Additionally, the data needed to accurately calculate emissions from each Scope 3 category differs significantly. Below are category-specific data improvement recommendations on Categories 1, 2, 4 and 9, highly anticipated to be GIRP members' emission hotspots.

Category 1. Purchased Goods and Services & Category 2. Capital Goods

- If supplier engagement is not feasible (due to individual sub-contractors for instance), develop a methodology that estimates the emissions from the service through desktop research or a questionnaire to key sub-contractors to then extrapolate. This enables a *more accurate methodology compared* to average data approach.
- If you have readily available product-specific data (i.e. kgs of active ingredient), move towards volume-based emission factors, such as ecoinvent, rather than relying on EEIO EF databases. This enables decarbonisation through material choice.
- Collect publicly available data for suppliers (LCA data, economic intensities, FTE intensity), for instance through CDP.
- Finally, consider conducting Life Cycle Assessments (LCAs) for key goods/services that you have identified may contribute to emission hotspots.

Category 4. Upstream- & Category 9. Downstream - **Transport**

- Spend is typically the lowest quality of data, but is readily available and comes from sources such as bills, invoice payments, and financial accounting systems. Note that when using spend data, there is little visibility on the split between emissions from the transportation or emissions from the distribution (i.e. warehousing). Typically, a spend emission factor will incorporate emissions from both parts of the T&D process.
- In the near term (2-3 years), companies should ideally move towards distance-based data and aim to gather information on the distance traveled and the tonnage carried per journey. This is where stakeholder engagement becomes crucial.
  - If distances aren't readily available, logistics teams should know the origin & end points of locations. These can be used to look up distances separately.
  - Exact tonnages per journey should similarly be available to logistics teams, but given the granularity of such information, assumptions on the average weight/tonnage carried per journey can be made in the first instance if this is not available.
- Finally, gathering information on the amount of fuel (& electricity) consumed to carry out these transport and warehousing activities.

Category 4. Upstream- & Category 9. Downstream - **Distribution**

- Obtaining benchmark data for warehouses and other distribution centres is typically the least time intensive type of data to receive in the first instance. This includes things such as: square footage, proportion used by client, refrigerant usage, and building type (warehouse, office, residential).
- Similarly to the primary data captured for Scope 1 & 2 calculations, obtaining electricity, natural gas, and other activity information for warehouses where purchased or sold products are stored during their transport and distribution cycles should fall with the facilities management teams of the T&D provider.

STEP 01

Scope 1, 2 & 3 scoping assessment

Determine Scope 1 & 2 and Scope 3 categories' relevance to your business

STEP 02

Full carbon inventory

Calculate your full carbon footprint (Scopes 1, 2 and 3) using calculation approaches based on data available. This will likely be high level the first time. Verify your Scope 1 & 2 and look to verify material Scope 3 categories

STEP 03

Determine emission hotspots

With a complete and comprehensive carbon inventory, you can understand where your emission hotspots lie. Prioritise efforts to increase data quality in these hotspots.

STEP 04

Data improvement plan

Assess at which level of quality your data currently stands and work with stakeholders across the company to identify improvements

Example
Category 4 is identified as the largest hotspot for emissions, contributing to more than 60% of your carbon inventory.
You are currently following a **spend-based** approach to calculate emissions from this category as this is the only data available.
You decide to work with your suppliers to gather **distance-based** data.

→

- Organise data workshops
- Include data quality as part of tender processes
- Create internal incentives for better quality data
- Implement Environmental Management Systems

STEP 05

Supplier-specific data

Ultimately, regardless of your category hotspots, the most accurate data is supplier-specific.
Engaging directly with suppliers is crucial to this step.

Data Challenges & Solutions
Estimating data

The data quality I've received for my Scope 3 calculations is patchy or incomplete. What's the best way to approach this, and how do I estimate and improve?

Data can often be variable in quality and incomplete between data sources, especially in the first years of calculations. The data estimation hierarchy below summarises the next-best approach to use when data is missing and based on what is available.

Estimating data

When calculating carbon footprints, it is not uncommon to have difficulties in obtaining the necessary data required to calculate emissions. Hence, some level of estimation is usually required.

The following hierarchy of preference should be adopted, before resorting to complete exclusion:

1. **Actual data (primary data)** Retrievable from internal data sites, and/or invoices.

2. **Secondary data** Where primary consumption data is not available, references on the amounts paid (on electricity, gas, purchased goods) can subsequently be linked to consumption

3. **Previous data** If no information is available for the missing period, resorting to the same period from a previous year can be used. For example, gas consumption in October from 2023 can be used for October 2024.

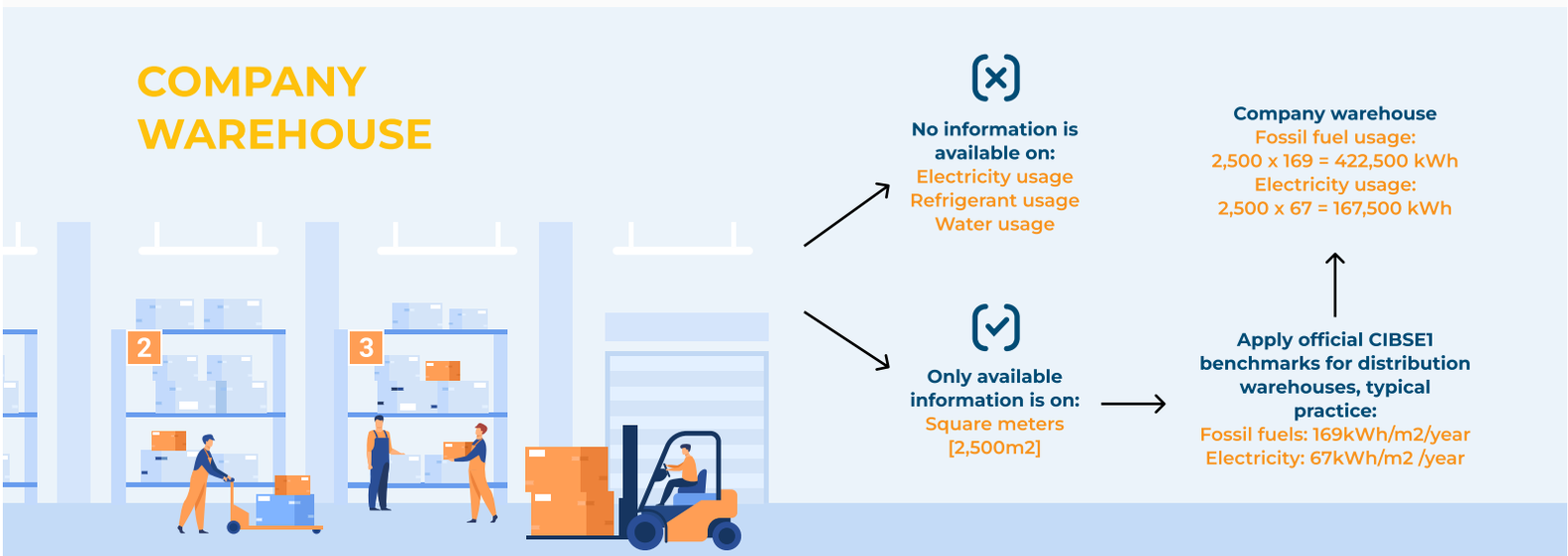
4. **Average data** If some data is available during the reporting period, this can be used to calculate an average and pro-rate consumption for the missing period. Bear in mind, this may lose aspects of seasonality.

5. **Benchmark data** When no information is available for a location, and no secondary, previous or average data can be obtained, benchmarks may be used. These can be consumption benchmarks based on available datasets, or general industry benchmarks (e.g. CIBSE, REEB). See the benchmark sources on the next page.

6. **Exclude** If there is no way to gather any data using the above steps, the source of emissions should be excluded. N.B. This should be clearly stated within the footprint.

Environmental benchmarks

In emissions calculations, when data is patchy, there is increased reliance on secondary, previous or average data. When this too is unavailable and there is no information for a location or activity, environmental benchmarks are applied to data. These help measure and compare the environmental performance of the activity in question.



Official benchmarks

REEB [Real Estate Environmental Benchmark]
Publicly available operational benchmark of environmental performance for commercial property in the UK

CIBSE [Chartered Institution of Building Services Engineers]
The CIBSE Energy Benchmarking Dashboard is an online platform which uses energy data as it becomes available to provide the most up-to-date and reliable benchmarks that represent the current trends of energy use in buildings.

IP6 Cundall - Waste Benchmark
Information paper providing benchmarks on the production of waste annually in typical UK office buildings

Other Benchmarks:
Depending on the type of benchmark needed, desk-based research using reliable sources typically aids calculations that require benchmarks. For example,

- Typical waste production by type, country, and treatment method [The World Bank's WhatAWaste Dataset, UK Government Statistics]
- Average energy use from digital products and services [The DIMPACT Methodology]

Data Challenges & Solutions
Inclusion & estimation

Company A lacked visibility of downstream operations (i.e. customer to final patient data) and as a result, often excluded this from its emission inventory. Should these emissions be included? If so, how does Company A obtain this data? And if this data is unavailable, how does Company A accurately estimate for it?

From an emissions perspective, customers and other end-users are key components of the Scope 3 inventory. However, obtaining reliable data downstream of operations can be challenging, particularly if the value chain is long and complex. The first step in tackling this challenge is to recognise what should be included in emission calculation – and what can be excluded.

Step 1. Understand if the emissions are within the company's emission reporting boundary.

Scope 3 Categories relevant to sold products:
10. Processing of sold products (page 64)
11. Use of Sold Products (page 66)
12. End-of-Life Treatment of Sold Products (page 68)

Emissions associated with Categories 10, 11, and 12 **should** be included in emissions calculations if they occur downstream of a company's operations:

- Category 10 is only relevant if products are being processed once sold by an organisation. If this is the case, the energy used in this processing will be required. In the pharmaceutical industry, it is unlikely that products will require processing beyond manufacturing, especially as wholesalers and pre-wholesalers collect finished goods. Hence, emissions from the processing of sold products will typically be excluded from calculation.
- Category 11 is only relevant if energy is required to use the product. If this is the case, the energy required for operation will be required. This Category is also likely to be irrelevant as most products sold in the pharmaceutical industry do not require energy to be used/consumed. Please refer to the Category-specific deep-dive section if potentially relevant (e.g. selling of electronic medicinal equipment).
- Category 12 is relevant to companies along a pharmaceutical supply chain, as medicinal product packaging will need to be disposed of at the end-of-life. This will need to be included in the carbon footprint of each organisation that sells the product on. The next step is to obtain the necessary data for inclusion.

Step 2. Obtain the necessary data.

The data required to calculate Category 12 is a breakdown of disposal method by weight, for each product sold. It is unlikely that retailers and pharmacies will be able to obtain this data, and so, assumptions can be made to ensure this Category is included.

Step 3. Make high-level assumptions and estimations, where data is unavailable.

Often, high-level assumptions and estimations need to be made in GHG reporting, due to the difficulties in obtaining primary data. For Category 12, assumptions will need to be made on the likely disposal method of sold products, by weight sold, if this data is unavailable. To do this, it is recommended to refer to regional waste databases. Many developed countries have detailed breakdowns of waste averages by disposal method and waste composition. Since the organisation will have the weight of each sold product, applying these assumptions will enable the calculation of emissions associated with End-of-Life treatment (please refer to Category 12 guidance for further calculation guidance).

Whenever high-level assumptions and estimations are made, it is important that reporting companies make note of these, including any sources used. These assumptions/estimations should then be updated on an annual basis, or until better data is available. Collaboration with organisations downstream of operations is encouraged to achieve better data quality along the value chain.

Data Challenges & Solutions
Data organisation

Where can I find the data required for my Scope 3 carbon footprint?

Typically, each category will require data from different stakeholders across your business.
Below is a list of the categories and the respective internal stakeholder groups commonly responsible for delivering data to be used in calculations:

Category 1
Purchased Goods and Services

- Procurement
- Finance

Category 2
Capital Goods

- Procurement
- Finance
- Accounting

Category 3
Fuel- & Energy-Related Activities not Included in Scope 1 & 2

- Facilities managers

Category 4
Upstream Transport & Distribution

- Logistics & Distribution team

Category 5
Waste from Operations

- Facilities managers
- Finance

Category 6
Business Travel

- Human resources
- Finance

Category 7
Employee Commuting

- Human resources

Category 8
Upstream Leased Assets

- Facilities managers
- Finance team

Category 9
Downstream Transportation of Sold Products

- Logistics & Distribution team

Category 10
Processing of Sold Products

- R&D team
- Finance
- Sales

Category 11
Use of Sold Products

- Finance
- Sales

Category 12
End-of-Life Treatment of Sold Products

- R&D team
- Finance
- Sales

Category 13
Downstream Leased Assets

- Facilities managers
- Finance

Category 14
Franchises

- Finance

Category 15
Investments

- Finance

The above is a useful guide for the discovery and management of data internally. However, for some of these categories (namely Category 1, 2, 4 & 9), collating data internally is an intermediary step as companies increasingly engage directly with suppliers to obtain supplier- or product-specific data. Utilising your procurement team will be necessary to optimise supplier engagement.

How can I facilitate data collection, and organise this data to increase efficiency and smoothen the Scope 3 calculation process?

Data organisation is fundamental in the carbon footprinting process. To calculate and disclose a robust carbon inventory there needs to be a clear understanding of where to find the data internally, and subsequently appropriately collecting, storing, and analysing it.

The bigger the company, the greater the complexity of the data. In such cases, managing data can become difficult, especially if inadequate data management systems exist or there is no data management system in place. Environmental Management Systems (EMS), are platforms that can be used to better manage data, with the goal of automating carbon accounting and reporting. See page 32 for more information on EMS.

Meanwhile, smaller companies, who are not yet at a stage of requiring EMS should initially focus on defining data owners & sustainability-related roles to improve the efficiency of data collection, storage, and analysis. The below outlines the major checkpoints to begin a smoother process of data collection, and subsequent data analysis, cleansing and calculations.

1. **Assign internal data owner(s),** responsible for the internal scouting of data. This individual should: know the structure of the company, identify all the relevant stakeholders for the data collection, and understand the data quality hierarchy.

2. **Identify & contact external data owner(s),** account managers or supplier contacts responsible for the external scouting of data. This individual should: be in contact with the sustainability team, and ideally the internal sustainability-related

3. **Assign sustainability-related roles & responsibilities,** relaying the collected data to an individual focused on cleansing, analysing and calculating. This individual should: know carbon accounting best-practice & the GHG Protocol, understand the data quality hierarchy, and apply the correct calculation approaches based on this.

   Consider investing in relevant training and upskilling for this individual(s) to acquire the correct skills and expertise needed for this role.

4. **Establish data collection guidelines** including timelines, roles & responsibilities and methodologies. This may include providing recurring training and resources to help stakeholders understand the importance of good quality and consistent data.

5. **Notify, review, validate and improve** the data.
   - Notify: ensure that enough time is provided to the data owners prior to the data collection period
   - Review: implement a review process to make sure data is reviewed as it comes in, allowing for any amendments, additional supporting evidence & follow-up communications with data owners
   - Validate: request additional evidence or methodologies for assumptions where necessary
   - Improve: understand your data maturity, and create a Data Improvement Plan to support your data quality journey

Given the complexity of calculations and the requirement of certifications, standards and licenses, smaller companies may find it beneficial to outsource emission calculation. See page 34 for more information on Sustainability Governance Structures.

Data Challenges & Solutions
Environmental management systems

How can I facilitate data collection, and organise this data to increase efficiency and smoothen the Scope 3 calculation process?

Companies required to manage large datasets can often find storing, analysing and manipulating the data to create outputs a significant challenge, especially in the sphere of carbon reporting.
Specifically, there has been a noticeable increase in the amount of Scope 3 data requests coming from different value chain partners, triggering a need for more frequent data collection on previously underreported or irrelevant data. Companies are additionally being asked to slice the data in different ways.

For instance, a typical data request may ask for distance of sold products travelled by customer, by journey, and even by transport type.

Environmental Management Systems (EMS) offer a comprehensive solution to address these types of requests in one place. EMSs are systems through which a company controls the activities, products, and processes that cause, or could cause, environmental impacts. In measuring and assessing impacts, it gives companies the possibility of managing and ultimately minimising these.
While the need for an EMS depends on a variety of factors, including the size and complexity of the reporting company, regardless, implementing an EMS will ensure:

1. Compliance with environmental requirements
2. Efficient use of resource
3. Waste reduction and minimal pollution
4. And the continuous improvement of environmental management and performance

Case study

It's regularly observed that companies with experience and a high level of maturity in carbon reporting rely on the use of EMS.

UL360 is one example of an Environmental Management System. It is a specialised sustainability management software platform, designed to help companies measure, manage and ultimately report on their environmental, social and governance data, including (but not limited to) carbon emissions.

Data organisation

UL360 allows data to be stored in multiple ways. Depending on the company's needs, storage can happen by region, by activity, by business division or by product.

Data owners

The system has multiple data collection features, including so-called "delegations". These can be attributed to specific users which are prompted when data entry is expected and due.

Estimating data

Where actual data is missing, the system can adopt estimation approaches based on the estimation hierarchy.

Incoming data requests

Data stored within the system can be visualised in many ways. This means it can also be exported and shared from the system seamlessly and with little to no need for manipulation.

UL360 is a strong example of a specialised EMS. However, depending on the company's overlapping needs (between sustainability as well as general data management), other Environmental Management Systems can cater accordingly.

Identified challenge	Environmental management system provision
Data organisation & outgoing data requests	**Automated data requests** A substantial amount of time is required to manage data owners, requiring prompts and re-prompts to ensure timely submission. Automating requests mitigates this.
Data organisation	**Data owner engagement** Systems are capable of calculating outputs and immediately presenting findings to data owners. Providing data owners with an understanding of how their information contributes can increase engagement
Data organisation	**Division of work** Large companies inevitably have many data sources. Ensuring owners can access and edit only their own data sets is paramount.
Improving data quality	**Compilation of data** Data should always be equal to the sum of like for like information. Standardised data entry means systems sum up information into multiple subtotals and totals simultaneously without potential for human error.
Data organisation	**Version control** Spreadsheets populated by multiple users will result in many versions being saved and adjusted; thus, it can be challenging to ensure your version contains all updates. Systems only ever reflect the latest available information.
Estimating data	**Validation** It is not uncommon for typos or unit errors to occur in regular submission processes. A system will flag variances, standardize units and ensure consistency in data submission. Where needed, systems can also uplift for missing data.
Data organisation	**Automated audit trail** Systems will log individual user details against each data submission in the platform – ensuring traceability and accountability of data processed in reporting.
Data organisation	**Evidence log** Third party auditors will require appropriate evidence to verify reported outputs. Systems can mandate and store source information parallel to data uploaded.

Data Challenges & Solutions
Sustainability governance

Although GIRP's network operates in the same sector and can share many common traits, each company operates differently due to a series of factors, including:

- Size of business
- Geographic location
- Regional compliance, legislation, and regulation

Regardless of these operational differences, to contribute to a net-zero future, GIRP's members should strive to incorporate sustainability throughout their business. The diagram on the next page depicts the best practice sustainability governance approach for a company integrating sustainability bottom-up.

Eventually, a company at the highest level of maturity in terms of governance will move from sourcing data from internal stakeholders to integrating sustainability directly into their role.

It is appreciated that not all, or many, companies will be at this stage or have the internal resources to operate at this level. See the checklist below for the suggested sustainability governance structure, based on the size and maturity of your organisation.

- **100 – 1,000 Employees**
- **>1 year of carbon reporting**

Entry-level size and maturity

- Singular employee responsible for ESG reporting
- An employee assigned to support person responsible for ESG reporting
- No oversight of relevant data – constant internal correspondence needed
- No sustainability plan or strategy at board level
- All sustainability work conducted externally by consultants

- **1-4 y1,000 – 10,000 Employees**
- **ears of carbon reporting**

Mid-level size and maturity

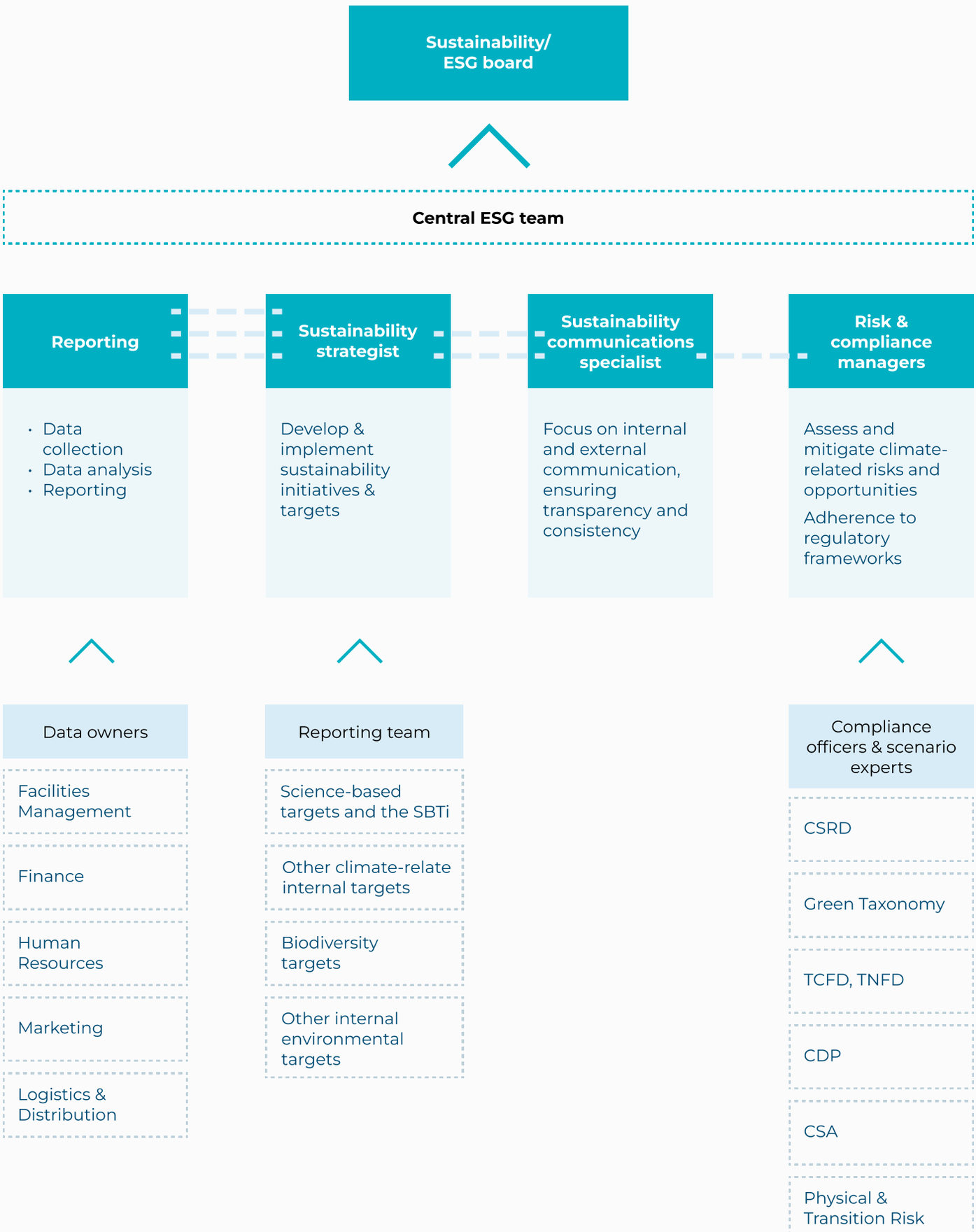
- A small team, focused on sustainability
- Oversight of some relevant data – limiting internal correspondence required
- Sustainability plan discussed sporadically at board level
- Basic sustainability work conducted in-house
- Specialised sustainability work conducted externally by consultants

- **10,000+ Employees**
- **5+ years of carbon reporting**

High-level size and maturity

- A large, sustainability-specific team
- Oversight of most, or all, relevant data – involving those who oversee in the process
- Sustainability strategy imbedded in company culture
- Meet all required, and optional, compliance
- Engaging with external sustainability consultants to lead in industry

Note that there is less correlation between the size of the company, compared to the experience and maturity of the company with regards to their sustainability journey.


Sustainability/ ESG board
Central ESG team
Reporting
Sustainability strategist
Sustainability communications specialist
Risk & compliance managers
• Data collection
• Data analysis
• Reporting
Develop & implement sustainability initiatives & targets
Focus on internal and external communication, ensuring transparency and consistency
Assess and mitigate climate-related risks and opportunities
Adherence to regulatory frameworks
Data owners
Facilities Management
Finance
Human Resources
Marketing
Logistics & Distribution
Reporting team
Science-based targets and the SBTi
Other climate-relate internal targets
Biodiversity targets
Other internal environmental targets
Compliance officers & scenario experts
CSRD
Green Taxonomy
TCFD, TNFD
CDP
CSA
Physical & Transition Risk

Other Data Challenges & Solutions

I am finding it difficult to select suppliers given the lack of 'eco-scores'. Is there a widely recognised eco-score to look for? How do I assess the environmental performance of suppliers otherwise?

'Eco-scores' are used in industries around the world to make more-informed environmental decisions. In the pharmaceutical industry, a standardised eco-score does not exist, making it difficult to compare companies on environmental performance. Due to this, it is encouraged that companies work towards widely-accepted and well-recognised eco-scores, such as EcoVadis; EcoVadis is an online platform that enables companies to manage and compare ESG risk and compliance, corporate sustainability goals, and sustainability performance.

If unable to obtain these scores, companies can consider alternative factors, for example:

Emission reduction commitments & net zero strategy

Emission reduction commitments and a net zero strategy demonstrate a high-level of ambition to improve environmental performance. Partnering with companies with one, or both, of these will improve the consistency of climate alignment.

Near or long-term SBTi-aligned targets set

The Science-Based Target initiative (SBTi) is a well-known, and accepted, standard of target formulation. Setting an SBT can be a progressive and public view of commitment to sustainability. Partnering with companies who have an SBT is a good barometer when eco-scores are not available. It is important to note, as with all these alternative factors, resource and capacity play a key role in leading in industry. Because of this, they should be considered, alongside the capabilities of each firm.

Involvement in environmental working groups

Numerous environmental working groups exist, many of which are focusing on specific area tackling the climate crisis. Companies that join these working groups demonstrate ambition to be part of the solution, being proactive to climate change. This is a good sign when considering the environmental credentials of a potential partner firm.

Mandatory and voluntary disclosures

Mandatory and voluntary disclosures provide businesses with the opportunity to work towards improving operations, whilst having the support and guidance of a governing body.

- CSRD
- Carbon Disclosure Project (CDP)
- Taskforce for Climate-related Financial Disclosures (TCFD)

Publicly available sustainability reporting

Transparency is key when considering sustainability reporting. When selecting partners to work with, the transparency they demonstrate may be a factor worth considering. It is important to evaluate how public and robust companies are with their sustainability reporting. A company's Annual, ESG, or Sustainability report may be a good place to start when considering this.

Sustainability governance

It is important that all firms within GIRP's Network consider the way they are governed for sustainability. Refer to page 34 on the way a company can be governed, and the recommended best practice approaches for environmental performance. It is worth considering where companies sit on this hierarchy, contextualised for the size of the organisation.

Alignment on best practice will be key across the industry to enable accurate comparisons to be made. Companies who are part of GIRP's Network should refer to this guidance when comparing company credentials.

What levers can I pull to influence the sustainability-related decisions of my suppliers?

It is vital that companies can select suppliers based on overall strategy, including environmental performance. However, many organisations are tied into long-term contracts with suppliers, whom they have very little influence over. If this is the case, the immediate priority should be to encourage collecting improved quality data internally to improving the accuracy of emission calculation. In the medium to long-term, at the time of contract renewals or tenders, 'hard' and 'soft' requirements should be considered as the next step.

What are 'hard' requirements?

Hard requirements are terms in contracts that mandate data sharing. In this context, these would be requirements for certain environmental criteria. For example, a term of a contract could be that both parties agree to share data required for Scope 3 calculation with each other.

What are 'soft' requirements?

Soft requirements are terms in contracts that enable flexibility of data sharing, and or, requirements for certain environmental criteria. For example, a term of contract agreement could be that both parties have SBTi targets set by x year.

In parallel, all companies should start having conversations with their suppliers in one form or another. Companies should therefore consider implementing more robust supplier engagement strategies.

Supplier engagement

Supply chain emissions are on average 11.4x higher than direct emissions and are identified as a key lever for companies to decarbonise their own value chain. As per the new SBTi guidance, CDP supply chain report and ISO 20400 Standard for Sustainable Procurement, engagement with suppliers and embedded processes within procurement are vital to reach net-zero.

Supplier engagement is a set of mechanisms or interventions implemented both internally and with suppliers to empower them to create more decarbonised, resilient supply chains.

Supplier engagement is used to:

- Deliver company carbon reduction targets from Scope 3;
- Engage to collect primary data;
- Track and monitor supplier performance;
- Support company responsible sourcing commitments;
- Reduce climate risk within the supply chain;
- Enhance efficiency, transparency, and resiliency across the value chain.

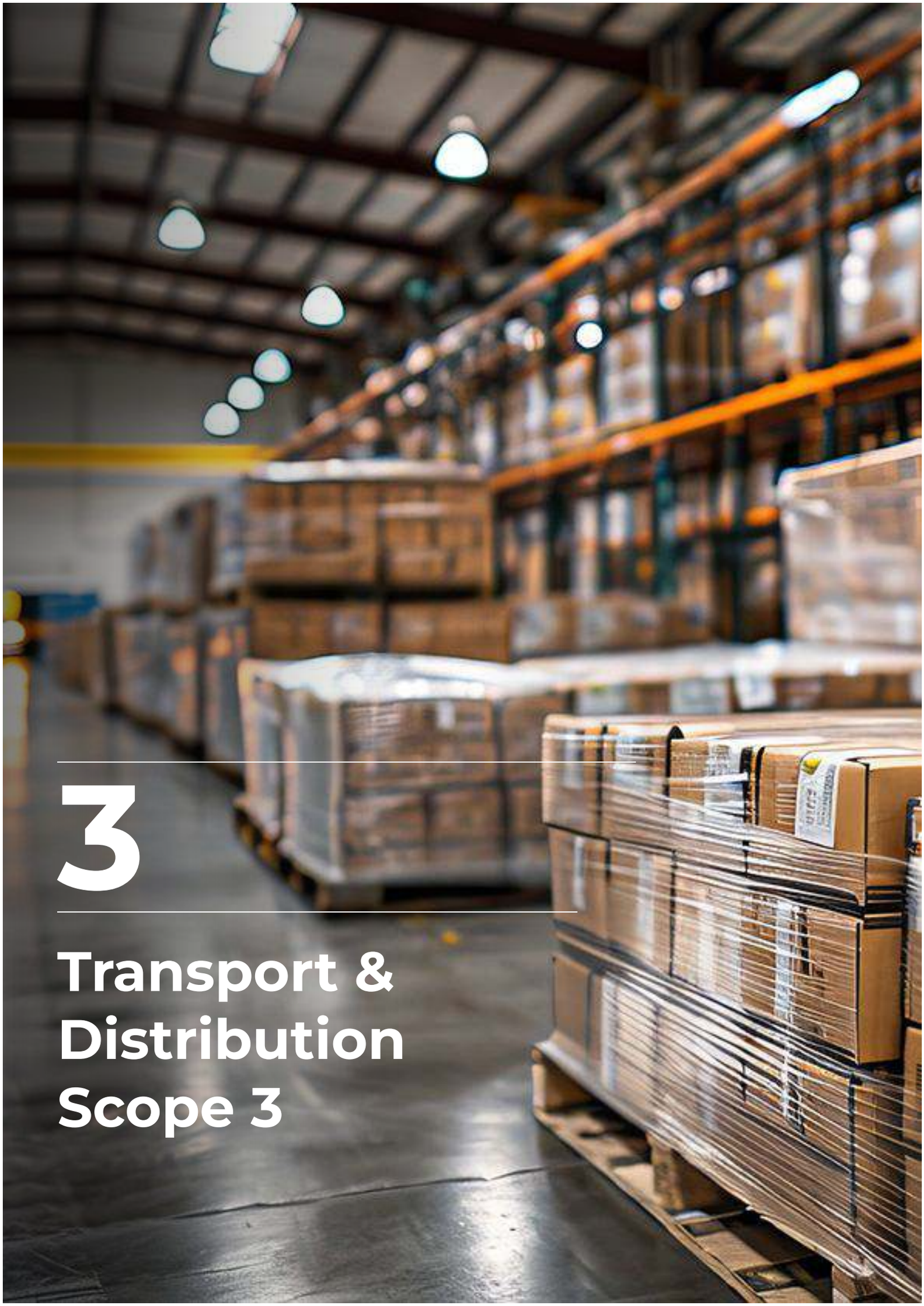
Being part of the GIRP network can significantly facilitate supplier engagement. This should however, be accompanied by a robust framework and a clearly defined set of steps to undertake.

Case Study

The National Health Service (NHS) in the United Kingdom has embarked on their own sustainability journey, applying stringent environmental and emissions objectives, not only internally but also to their suppliers.

As part of this commitment to sustainability, they have launched the Evergreen Sustainable Supplier Assessment (ESSA). This serves as an online tool which enables suppliers to engage with the NHS on their sustainability journey and understand how to align with the NHS net zero and sustainability ambitions, including those set out in the NHS net zero supplier roadmap.

Ultimately, it serves as an environmental and carbon 'North Star' for NHS suppliers, while transparently sharing data.



3

Transport & Distribution Scope 3

Category 4 Upstream Transport and Distribution & **Category 9** Downstream Transport and Distribution

Introduction

Scope 3, Category 4 emissions include the transportation and distribution (T&D) of products purchased by your organisation in the reporting year. It also includes the emissions from the storage of products in warehouses, distribution centres, and retail facilities.

Category 4 differs from Category 9 due to the upstream aspect of the emission calculation. Emissions are allocated to Category 4 in two cases:

1. If the transport and distribution occurs for products purchased or acquired by the reporting company
2. If the transport and distribution occurs for products sold by the reporting company, paid for by the reporting company

Emissions are allocated to Category 9 when the transport and distribution occurs for products sold by the reporting company, and the T&D is paid for by the purchasing company.

You may optionally include emissions from unladen backhaul (i.e., the return journey of the empty vehicle) in Category 4/9.

Case study

Company A **buys** products → The transport & distribution from these purchased products fall into Company A's Category 4 emissions, regardless of the payment.

Company B **sells** products → The transport & distribution from these sold products will:

- Go into Category 4, ***only if*** the selling company **is paying for the T&D**
- Go into Category 9, if the buying company pays for the T&D

Manufacturer's Scope 3

A Manufacturer sells products to a Wholesaler.

The emissions from the transport of these sold products will go into the Manufacturer's Scope 3 Category 9, as the wholesaler pays for the T&D.

→

Wholesaler's Scope 3

A Wholesaler purchases products from a Manufacturer and pays for the transport and distribution of these.

The emissions from the T&D of these purchased products will go into the Wholesaler's Scope 3 Category 4.

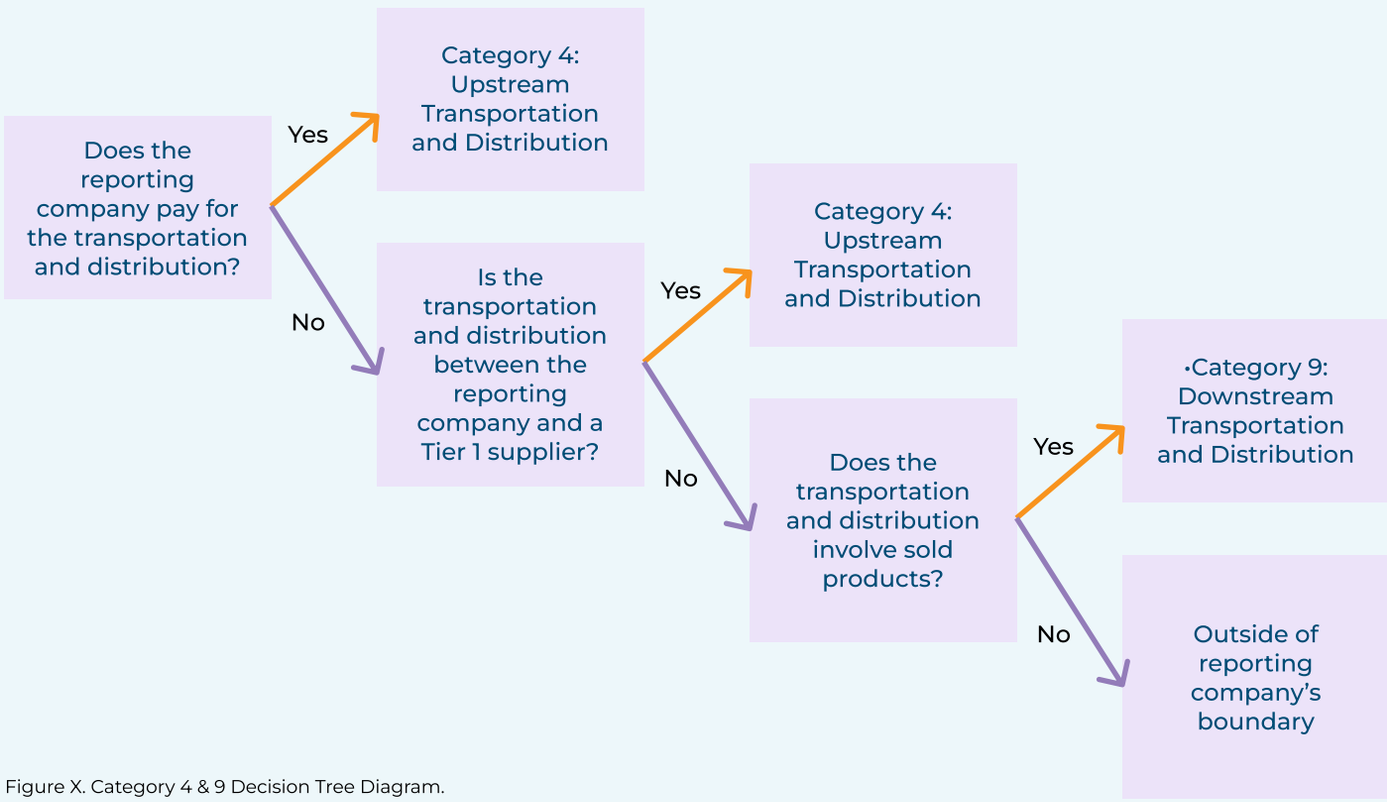


Figure X. Category 4 & 9 Decision Tree Diagram.

The table below summarises the expected allocation of emissions for Transport & Distribution activities based on ownership, payment and financial transaction (bought or sold goods and services).

Scope, Category	Transport & Distribution Activity
Scope 1 & 2	T&D in vehicles owned or operated by your company.
Scope 3, Category 1	Emissions from T&D should be included in the cradle-to-gate emissions of Purchased Goods and Services.
Scope 3, Category 4	T&D of products purchased in the reporting year **and** paid for by the reporting company. T&D of products sold in the reporting year **and** paid for by the reporting company.
Scope 3, Category 8	Purchased Goods & Services
Scope 3, Category 9	**T&D of products sold by your organisation in the reporting year, paid for by a third party.**

Category 4 & 9
Transportation

Typical transportation data request & data quality

Data sources for activity data on **transportation** include:

- Aggregated fuel receipts. If fuel data is unavailable, it can be derived by using:
  - Amount spent on fuels and average price of fuels in the country, for the reporting year
  - Distance traveled and the vehicles' fuel efficiency
  - Amount spent on transportation services, fuel cost share (as % of total cost of transportation services), and the average price of fuel in the country, for the reporting year
- Purchase records/orders
- Internal transport management systems
- Specific carrier or mode operator
- Industry associations
- Online maps and calculations

Case study

You are in the process of calculating the emissions from the transportation of purchased pharmaceuticals, Category 4. You have had various conversations with your transport service provider, and they have confirmed they are able to provide:

1. Individual rows of journeys that occurred during the reporting year
2. For each journey, the distance travelled
3. For each journey, the weight of the goods transported (and confirmed they all belong to you), and
4. The fleet details including fuel type and vehicle size

The quality of this data allows you to carry out tonne.km calculations and apply a tonne.km emission factor to calculated the final emissions created.

The tables below shows an incorrect (left) and a correct (right) calculation method to derive final emissions.

N.B. The below calculation method assumes using an Average (up to 3.5 tonnes), Diesel, Van emission factor = 0.5706 kgCO2e/tonne.km

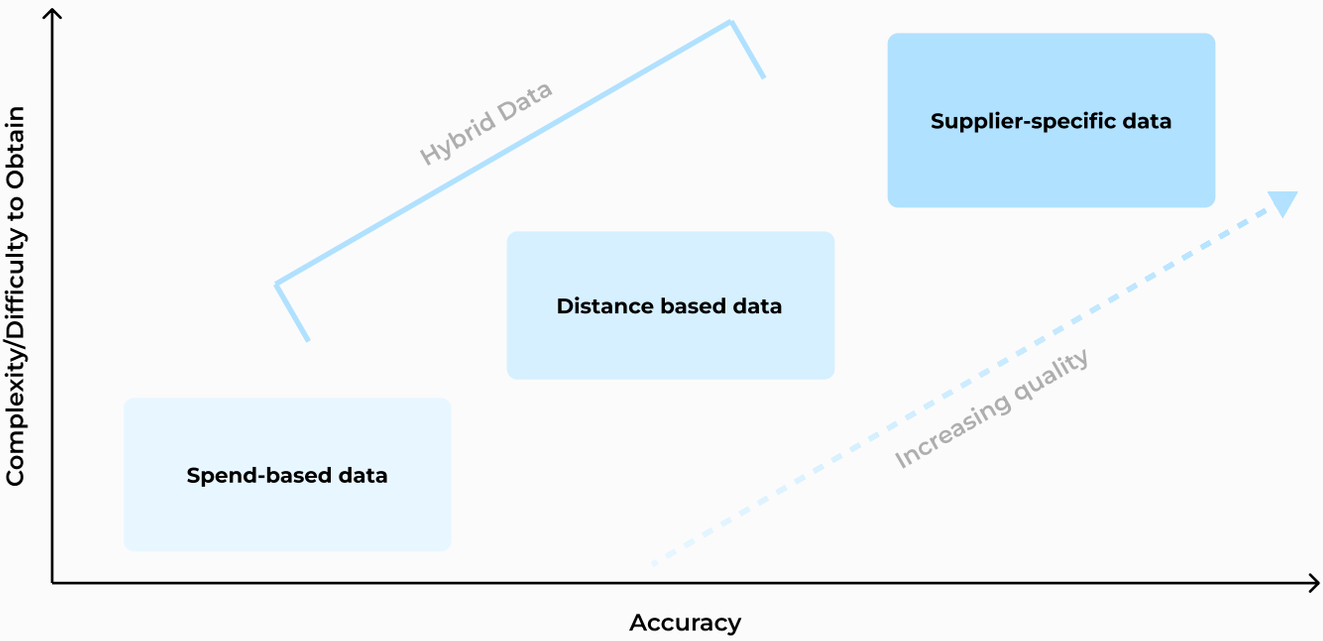
Tonnes		Km		Tonne.km	Journey #
85		2,000			Journey 1
60		1,000			Journey 2
50		4,000			Journey 3
70		6,000			Journey 4
265	x	13,000	=	**3,445,000**	***Sum of Total***

x 0.5706 =
1,965,717 kgCO2e

Tonnes	Km	Tonne.km	Journey #
85	2,000	170,000	Journey 1
60	1,000	60,000	Journey 2
50	4,000	200,000	Journey 3
70	6,000	420,000	Journey 4
		850,000	***Sum of individual journeys***

x 0.5706 =
485,010 kgCO2e

Transportation data quality hierarchy



Activity Data Requirements

• Amount spent on transportation by type (e.g., road, rail, air) • Currency • For Category 9, spend data will not be available. Therefore, estimate using patient travel, or distances for product delivery instead.	• Mass of the products sold • Actual distances provided by transportation suppliers • Online maps or calculations • Published port-to-port travel distances	• Fuel consumption • If applicable, fugitive emissions (e.g., refrigerant consumption in temperature-controlled vehicles)

Hybrid Data will be a **mixture** of fuel-based, distance-based, and spend-based activity data

Emission Factors Required

Cradle-to-gate emission factors for the transportation type per unit of economic value (e.g., kg CO2e/€)	Emission factor by mode of transport or vehicle type expressed in units of GHG per unit of mass or volume travelled (e.g., kg CO2e/ tonne or km, kg CO2e/TEU)	Fuel emission factors, expressed in units of emission per unit of energy consumed (e.g., kg CO2e/ litre, CO2e/Btu) For electric vehicles (if applicable), electricity emission factors, expressed in units of emissions per unit of electricity consumed (e.g., kg CO2e/kWh) Fugitive emission factors, expressed in units of emissions per unit (e.g., kg CO2e/kg refrigerant leakage)

Category 4 & 9
Distribution

Typical distribution data request & data quality

Data sources for activity data on **distribution** (i.e. warehousing and storage) include:

- Utility bills
- Purchase records
- Meter readings
- Internal IT systems
- Supplier records and internal management systems

Case study

A wholesaler is calculating their annual Scope 3 footprint. During their scoping assessment, they realise they've been employing a courier service to take their products from their owned and operated distribution centres to their customer, a pharmacy chain. This courier owns and operates their own warehouses as part of their transport and distribution service offering.

Since the products being transported & distributed are sold products, but the service is paid for by the wholesaler, they know the emissions from this activity are to be allocated to the wholesaler's Category 4.

A portion of the wholesaler's sold products end up in the courier's warehouses for 2 days between pick-up and final delivery to customer. The wholesaler knows that the courier picked up products from them 25 times that year, meaning their products were stored in the warehouse for 50 days in total.

The wholesaler therefore requests the following information from the courier, **and the courier's response is:**

- How big is the warehouse (m2)? **2,500 m2**
- Is the warehouse refrigerated? **No**
- What is your annual electricity & fuel usage? **Electricity: 1,700,822 kWh; Fuel: 2,500 litres used for our back-up generator**
- What % do we occupy in your warehouse? **We don't know, but you represent roughly 5% of our annual revenue**

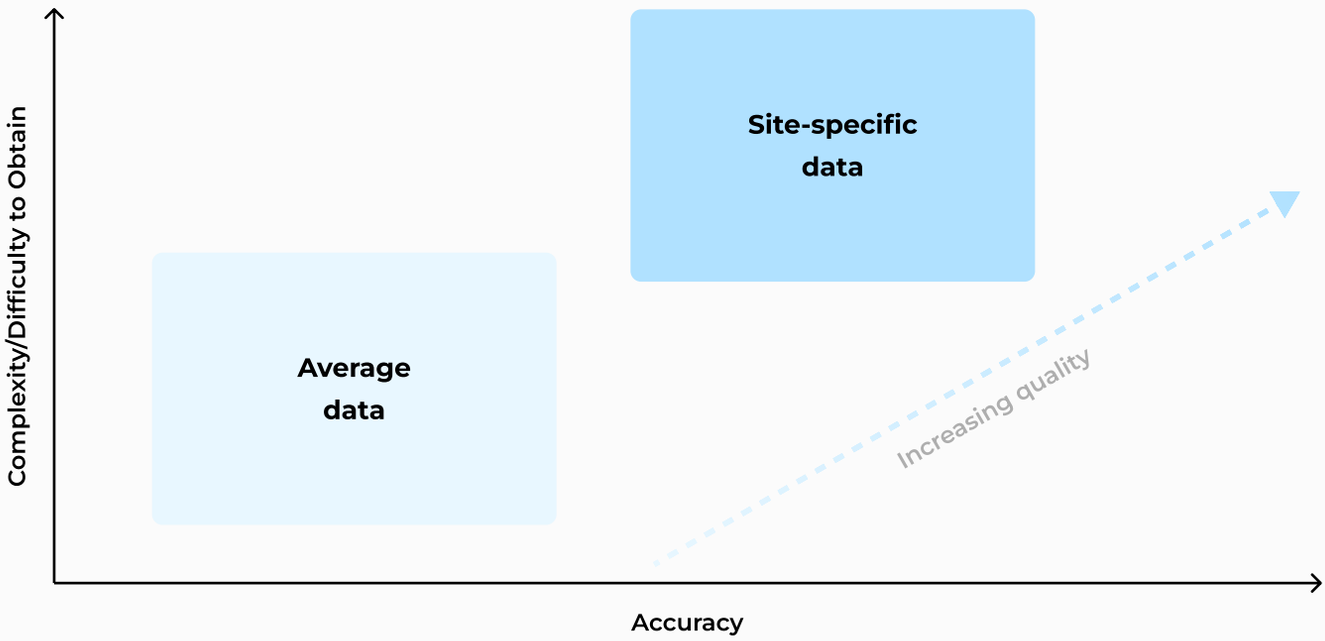
Using the above information, the wholesaler does the following:

1. Finds a daily electricity intensity
   1,700,822 / 365 = 4,659 kWh used per day
   4,659 * 5% = 232.95 kWh used per day, per the wholesaler's portion of the courier's revenue
   232.59 * 50 days = 11,647.5 kWh used by wholesaler
2. Multiplies the total electricity found by the appropriate electricity emission factor
3. Repeats the same process as above for the fuel usage

The wholesaler is able to calculate the emissions from the distribution of their sold products by apportioning part of the actual activity data from the courier.

In future years, the wholesaler can work with the courier to better understand the portion of space occupied in the warehouse and more accurately account for the emissions from the distribution.

Distribution data quality hierarchy



Activity Data Requirements

Average data	Site-specific data
• Volume of purchased goods that are stored, or number of pallets needed to store purchased goods. • Average number of days that goods are stored.	• Site-specific fuel and electricity use. • Site-specific fugitive emissions (e.g., air conditioning or refrigerant leakage) • Average occupancy rate of the storage facility (i.e., average total volume of goods stored)

Emission Factors Required

- Site- or regionally-specific emission factors for energy sources per unit of consumption (e.g., kg CO2e/kWh for electricity, kg CO2e/litre for diesel)
- Emission factors for fugitive and process emissions (kg CO2e/kg)

Any one of the below:

- Emission factor per pallet per day stored in facility
- Emission factor per square meter or cubic meter per day stored in facility
- Emission factor per TEU (twenty-foot equivalent unit) stored in facility

Data Challenges & Solutions
Transport and distribution

Does refrigerant loss need to be accounted for during T&D of products? If so, how is this calculated? And who should account for this?

Transportation methods in the pharmaceutical industry may need to include refrigeration due to the temperature requirements of the products being transported. For vehicles to remain cool, refrigerant gases are consumed. The consumption of refrigerants release emissions into the atmosphere that need to be accounted for.
Refrigerant loss should only be included in emission calculation when this loss is known. It is not possible to estimate for refrigerant loss, and as such, such emissions would need to be excluded from calculation where no actual consumption data is available.

How is it calculated?

When the specific consumption of a refrigerant is known (i.e., the top-up volume is recorded), companies should multiply the consumption by the appropriate emission factor. The Department for Business, Energy and Industrial Strategy, BEIS (previously the Department of Environment, Food and Rural Affairs, DEFRA) discloses refrigerant-specific emission factors that can be applied. These are reviewed and re-disclosed on an annual basis, similarly to all other BEIS emission factors. The calculation follows:

Volume of refrigerant (in the same unit as the emission factor, e.g. litres) x Emission Factor (kgCO2e/litre) = Refrigerant CO2e

Once emissions have been calculated, they should be split by journey where possible. At journey level, emissions can then be apportioned by the contents of the vehicle. Companies who are responsible for these emissions should know how much of the vehicle their products make up, and the total emissions for the journey should be derived as such.

Who should account for this?

Owned & operated fleet	**Scope 1**
Leased fleet	**Scope 3, Category 8**
Third party provider, paid for by the reporting company, transporting & distributing purchased goods	**Scope 3, Category 4**
Third party provider, paid for by the reporting company, transporting & distributing sold goods	**Scope 3, Category 4**
Third party provider, paid for by the customer, transporting & distributing sold goods	**Scope 3, Category 9**

Accounting for the emissions from refrigerant loss is deemed best practice. However, as per the GHG Protocol, this is an optional part of the Transportation & Distribution calculation.

Do emissions associated with unladen backhaul and empty vehicles need to be accounted for? If so, how is this calculated? And who should account for this?

Uncertainty can arise when it comes to the accounting of empty delivery vehicles and unladen backhaul (i.e. the return journey of an empty truck after delivery). Primarily, couriers front the burden of these carbon emissions, however, it may be best practice for companies across the value chain to consider the emissions associated with this aspect of T&D. It is encouraged by the GHG Protocol to account for these emissions.

Calculating emissions from unladen backhaul

Quantity of fuel consumed from backhaul x Emission factor for the fuel

If quantity is unknown, the following calculation can be carried out:

Average efficiency of vehicle unladen x Total distance travelled unladen

To obtain this data, couriers should track the distance and/or fuel used for journeys completed in empty trucks.

Who should account for this?

Emissions associated with empty trucks and unladen backhaul should be included in a courier's Scope 1 emissions. In addition, organisations upstream and downstream of the courier should also include these emissions in accounting – however, based on a split of the vehicle they are responsible for. Couriers may need support in these apportionments, but they are necessary to increase the accuracy of carbon accounting in the industry.

While it is best practice to account for these emissions, it is not required as per the GHG Protocol.

4

Scope 3 Deep-Dive

Scope 3
Category & calculation summary

Category	Description	Likelihood to be in Scope	Calculation Method 1	Calculation Method 2	Calculation Method 3
1. Purchased goods and services	Emissions associated with the products and services purchased in the reporting year	Very likely	Supplier-specific approach	Average approach	Spend approach
2. Capital goods	Emissions associated with the production of capital goods purchased or acquired in the reporting year	Likely	Supplier-specific approach	Average approach	Average approach
3. Fuel- and energy-related activities	Emissions associated with the production of fuels and energy purchased and consumed in the reporting year	Very likely	Supplier-specific approach	Average approach	-
4. Upstream transportation and distribution	Emissions associated with the upstream transportation and distribution of products purchased in the reporting year	Very likely	Fuel approach	Distance approach	Spend approach
5. Waste generated in operations	Emissions associated with the disposal and treatment of waste generated in the reporting year	Very likely	Supplier-specific approach	Waste-specific approach	Spend approach
6. Business travel	Emissions associated with the transportation of employees for business-related activities in the reportion year	Very likely	Fuel approach	Distance approach	Spend approach
7. Employee commuting	Emissions associated with the upstream transportation and distribution of products purchased in the reporting year	Very likely	Fuel approach	Distance approach	Spend approach
8. Upstream leased assets	Emissions associated with the operation of leased assets in the reporting year	Likely	Asset-specific approach	Lessor-specific approach	Average approach
9. Downstream transportation and distribution	Emissions associated with the downstream transportation and distribution of products purchased in the reporting year	Very Likely	Fuel approach	Distance approach	Spend approach
10. Processing of sold products	Emissions associated with the processing of sold intermediate products by third parties after sale in the reporting year	Unlikely	Site-specific approach	Average approach	-
11. Use of sold products	Emissions associated with the use of goods and services sold in the reporting year	Unlikely	Fuel/electricity approach	Fuel/feedstock approach	Contained/ forming approach
12. End-of-life treatment of sold products	Emissions associated with the waste disposal and treatment of products sold in the reporting year	Likely	Supplier-specific approach	Waste-specific approach	Spend approach
13. Downstream leased assets	Emissions associated with the operation of assets leased in the reporting year	Very Unlikely	Asset-specific approach	Lessor-specific approach	Average approach
14. Franchises	Emissions associated with the operation of franchises, not included in Scope 1 or 2, in the reporting year	Unlikely	Franchise-specific approach	Average approach	-
15. Investments	Emissions associated with investments in the reporting year	Unlikely	Investment-specific approach	Project-specific approach	Average approach

The table above summarises the description of each Scope 3 category, and the respective calculation methods available for this. Methods 1, 2 and 3 demonstrate individual approaches that can be adopted, based on the data quality level available. The Alternative Method depicts where a 'Hybrid approach' can be adopted by applying a percentage of Methods 1-3 across the calculation. When applying a hybrid approach, it is best practice to understand what portion of the emissions calculated has been done so using which approach. For instance, 50% of Category 1 emissions = Supplier-specific approach (Method 1), 25% Average approach (Method 2), and 25% Spend approach (Method 3).

Calculation Approaches
General

increasing emissions quality

Supplier-specific data approach

Category 1 & 2 [Supplier-specific emission factor per Good/Service (0.444 kgCO2e/kg of product)] x [Quantity of Good/Service (50,021 kgs of product)] = **22,209.32 kgCO2e**

Category 5 [Sum of allocated scope 1 & scope 2 emissions of waste treatment company (i.e. **2,355.5 kgCO2e**)]

Category 8 [Supplier A-specific emission factor for electricity (0.99 kgCO2e per kWh)] x [Electricity from Supplier A (167,000 kWh)] = **165,330 kgCO2e**

Category 12 [Total mass of sold products and packaging (560.5kg)] x [% of total waste treated by waste-treatment method (50% landfill, 50% recycling)] x [Waste-treatment emission factor (recycling: 0.55 kg CO2e/kg, landfill: 0.90kgCO2e)] = **154.1 kgCO2e from recycling, 252.22 kgCO2e from landfill**

Average data approach

Category 1 & 2 [Mass or volume of purchased good or service (25,000 kg)] x [EF of purchased good or service per unit of mass or reference unit (0.55 kgCO2e/kg)] = **13,750 kgCO2e**

Category 5 & 12 [Total mass & type of waste (43 tonnes of PET Plastic)] x [Proportion of total waste treated by different waste-treatment methods (100% recycling)] x [Waste-treatment method emission factor (0.66 kgCO2e/tonne – recycling EF)] = **28.38 kgCO2e**

Category 7 [Number of employees by transport mode (25 FTEs)] x [Average or specific commuting distance (33 km average)] x [Emission factor of transport mode (road) (0.0244 kgCO2e/km] = **201.3 kgCO2e**

Category 8 [Proportion of office space leased (180 m2 of 2,500 total = 7.2%)] x [Total electricity use of building (150,000 kWh per year)] x [Electricity emission factor (0.11 CO2e/m2] = **1,188 kgCO2e**

Category 10 [Mass of sold intermediate product (2,500kg)] x [Emission factor of processing sold products (0.99 kgCO2e/kg)] = **2,475 kgCO2e**

Category 13 [Total floor space of building type (500m2)] x [Average emission factor for building type (0.81 kgCO2e/m2/year] = **405 kgCO2e**

Category 14 [Number of buildings or assets (23)] x [Average emission factor per building or asset type per year (1,002 kgCO2e/building or asset type/year)] = **23,046 kgCO2e**

Category 15 [Revenue of invested entity (EUR 250,000)] x [Spend-based Emission Factor, based on the invested entity's sector (0.45 CO2e/EUR)] = **112,500 kgCO2e**

Spend-based data approach

Category 1 & 2 [i.e. spend on aspirin (EUR 45,000.00)] x [EF of purchased good or service per unit of economic value (0.0544 kgCO2e/EUR)] = **2,448 kgCO2e**

Category 4 & 9 [i.e. spend on transportation (EUR 62,000.00)] x [Emission factor for expenditure transport & distribution (0.0025 kgCO2e/EUR)] = **155 kgCO2e**

Category 5 [i.e. spend on waste treatment services (EUR 5,000.00)] x [Emission factor for waste remediation services (0.001 kgCO2e/EUR)] = **5 kgCO2e**

Category 6 [i.e. spend on air travel (EUR 114,000.00)] x [Emission factor for expenditure on flights (0.0033 kgCO2e/EUR)] = **376.2 kgCO2e**

Category 8 & 13 [i.e. spend on electricity (EUR 25,000.00)] x [Emission factor for spend on electricity (0.1 kgCO2e/EUR)] = **2,500 kgCO2e**

Complete list of calculation approaches

- **Supplier-specific approach**
- **Average approach**
- **Spend approach**
- Fuel approach
- Distance approach
- Asset-specific approach
- Lessor-specific approach
- Site-specific approach
- Fuel/electricity approach
- Fuel/feedstock approach
- Contained/forming approach
- Waste-specific approach
- Franchise-specific approach
- Investment-specific approach
- Project-specific approach

Complexity/Difficulty to Obtain

Accuracy of Emissions

N.B. Figures and Emission Factors are intended solely for demonstrative purposes and do not reflect actual data.

Calculation Approaches
Category-specific

Fuel approach

Category 6 & Category 7
[Litres of gasoline used for travel (L)] x [Emission factor (CO2e/L)] = **kgCO2e**

Distance approach

Category 4 & 9 [Distance & tonnage travelled per journey, per vehicle type] x [Vehicle emission factor (kgCO2e/km)] = kgCO2e
Category 6 [Distance travelled by employees by vehicle type (km)] x [Vehicle emission factor (kgCO2e/km)] = kgCO2e
Category 7 [Distance travelled between home and hub/office, by employee, by vehicle type [km]) x [Vehicle emission factor (kgCO2e/km)]

Asset-specific approach

-
Category 8
[Electricity used by leased laboratory (kWh)] x [Emission factor (CO2e/kWh)] = **kgCO2e**

Lessor-specific approach (Category 8 only)

Category 8
[Lessors total emissions (CO2e)] x "[Leased asset floor space " ("m" ^"2")"]" /"[Total floor space " ("m" ^"2")"]" = **kgCO2e**

Site-specific approach

Category 10
[Quantity of fuel or electricity used (litre/kWh)] x [Emission factor for fuel or electricity (kgCO2e/litre or kWh)] + [Amount of refrigerant leakage (kg)] x [GWP for refrigerant (kgCO2e/kg) + [Mass of waste (kg)] x [Emission factor for waste activity (kgCO2e/kg)] = **kgCO2e**

Fuel/electricity approach

-
Category 11

Step 1.
[i.e. Energy use per year (kWh/year)] x [Years in use or lifespan (years)] = ***Total energy use per device kWh***

Step 2.
[i.e. Medical devices sold (units)] x [Total energy use per device (kWh)] x [Location- or Market-based electricity emission factor (kgCO2e/kWh)] = **kgCO2e**

Fuel/feedstock approach

-
Category 11
[i.e. Propane sold for heating application (L)] x [Emission factor for propane (CO2e/L)] = **kgCO2e**

Contained/forming approach

-
Category 11

Step 1.

[i.e. Inhalers sold (units)] x [Refrigerant contained which is released during use (kg/inhaler)] = ***Total refrigerant released kg***

Step 2.

[i.e. Refrigerant released (kg)] x [Refrigerant emission factor (kgCO2e/kg)] =**kgCO2e**

-

Calculation Approaches
Category-specific

Waste-specific approach
Category 5 [Total mass & type of waste (e.g. kilograms, plastic)] x [Proportion of total waste treated by different waste-treatment methods (%)] x [Waste-treatment method emission factor] = **kgCO2e**
Category 12 [Waste produced (tonnes or m3) ***and*** assumptions on treatment method (e.g. using WhatAWaste dataset)] x [Waste-type and waste-treatment emission factor (kg CO2e/tonne or m3)] = **kgCO2e**

Franchise-specific approach
Category 14 Scope 1 & 2 emissions of each franchise (kgCO2e) = **kgCO2e**

Investment-specific approach
Category 15 [Scope 1 & 2 emissions reported by company (kgCO2e)] x [Percentage share (%) of invested entity] = **kgCO2e**

Complete list of calculation approaches

- Supplier-specific approach
- Average approach
- Spend approach
- **Fuel approach**
- **Distance approach**
- **Asset-specific approach**
- **Lessor-specific approach**
- **Site-specific approach**
- **Fuel/electricity approach**
- **Fuel/feedstock approach**
- **Contained/forming approach**
- **Waste-specific approach**
- **Franchise-specific approach**
- **Investment-specific approach**
- **Project-specific approach**

Category 1 Purchased goods and services & Category 2. Capital goods

Introduction

Scope 3, Category 1 (Purchased Goods and Services) includes all upstream emissions from the production of products purchased or acquired by the reporting company in the reporting year. Products include both goods and services. Goods are tangible products; while services are intangible. Scope 3, Category 2 (Capital Goods) includes all upstream emissions from the production of purchased capital goods. Capital goods are final products that have an extended life and are used by the company to manufacture a product, provide a service, sell, store, or deliver merchandise. In financial accounting, capital goods are treated as fixed assets or as Plant, Property, and Equipment (PP&E). Examples include equipment, machinery, buildings, facilities, and vehicles.

In certain cases, there may be ambiguity over whether a particular purchased product is a Capital Good (Category 2) or a Purchased Good and Service (Category 1). Companies should follow their own financial accounting procedures to determine whether to account for a purchased product as a Capital Good or a Purchased Good and Service.

Hybrid data case study

BulkMed is a pharmaceutical wholesaler who buys medicine in bulk from the biggest medical manufacturer in Europe, MedicEur. They keep track of all their purchases in one purchase ledger which the finance team provides at the end of every reporting year.

BulkMed has been calculating their Scope 3 footprint for 3 years now. With CSRD coming into full force, also MedicEur has shown significant advancements in their own sustainability journey.

Previously, BulkMed fully relied on spend-based data and therefore have historically employed the spend-based approach.

From this year, given the sustainability-related advancements they have undertaken, MedicEur has been able to calculate a full Life Cycle Assessment (LCA) for 3 of the products they provide to BulkMed. These LCAs are publicly available on MedicEur's website, align to best practice from the GHG Protocol and have even recently been assured by a third-party.

This means that BulkMed can now switch from a spend-based to a hybrid approach of calculating emissions from their Purchased Goods and Services.

See below the general calculation approaches -

Previous spend-based approach

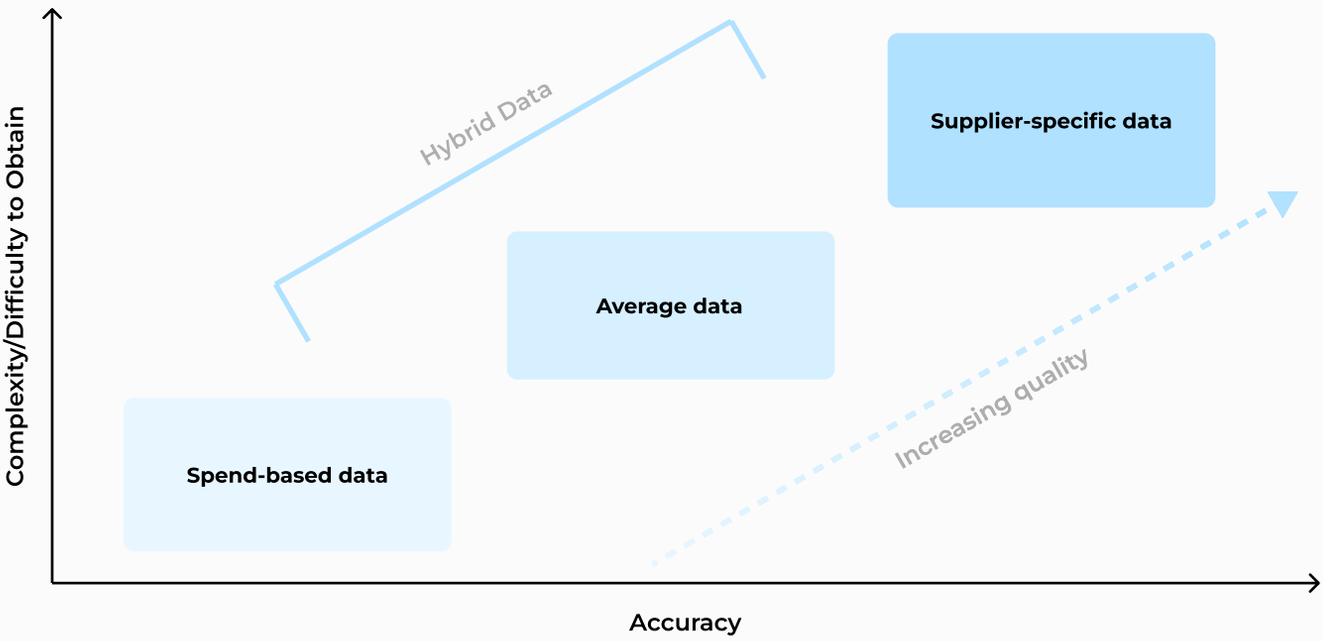
[Total spend ($)] x [Spend emission factor (kgCO2e/$)]
= Total Category 1 kgCO2e

New hybrid approach

{[Total spend ($)] – [Spend on 3 MedicEur products ($)] x [Spend emission factors (kgCO2e/$]}
+ [LCA1 (kgCO2e) x Product 1 kg]
+ [LCA2 (kgCO2e) x Product 2 kg]
+ [LCA3 (kgCO2e) x Product 3 kg]
= Total Category 1 kgCO2e

The aim in the short-term is for BulkMed to identify which are their most popularly sold products, and engage with MedicEur to undertake best-practice & GHG Protocol-aligned LCAs of these specific products. Moving forward, in the medium- to long-term, MedicEur should be encouraged to undertake LCAs of all products produced. .

Data maturity matrix



Activity Data Requirements

Spend-based data	Average data	Supplier-specific data
Amount spent on the purchased goods & services, split by product type. Can typically be obtained through ***purchase ledgers***	*Mass* or *volume* of the purchased goods or services	***Supplier-specific emission factor*** *(usually in kgCO2e/unit of measurement or product)*
Currency of spend	E.g. kg, tonnes, hours spent	***Quantities*** *or* ***units*** *of goods or services purchased*

Hybrid Data will be a **mixture** of supplier-specific, average-data, and spend-based activity data

Emission Factors Required

• Cradle-to gate emission factors of the purchased goods or service per unit of economic value • Environmentally-extended input-output (EEIO) databases (i.e. CEDA) • Industry associations	*Cradle-to-gate emission factors of the purchased goods or services per mass or unit*	***Supplier-specific emission factor*** I.e. Tier 1 supplier provides product-level, cradle-to-gate GHG data for the purchased good or service

Category 3
Fuel and energy-related activities not included in Scope 1 & 2

Introduction

Scope 3 Category 3 includes the emissions from the production of fuels and energy purchased and consumed by the reporting company that are not included in Scope 1 & 2.

There are 4 activities from which these emissions stem:

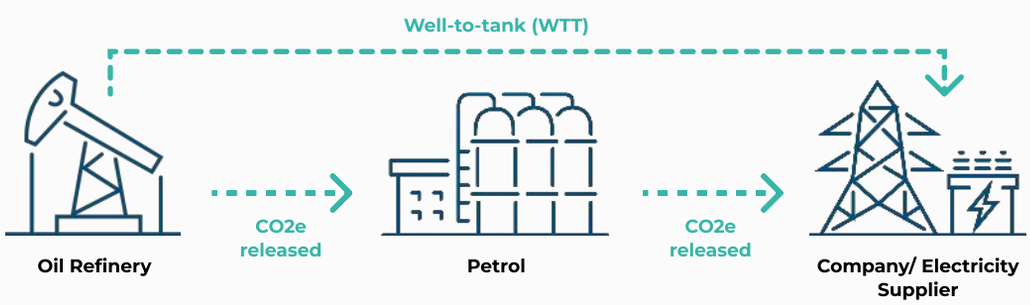
1. Upstream emissions of **purchased fuels**	Extraction, production, and transportation of fuels consumed by the reporting company. Examples include mining of coal, refining of gasoline, transmission and distribution of natural gas, production of biofuels, etc.	**Well-to-tank (WTT)**
2. Upstream emissions of **purchased electricity**	Extraction, production, and transportation of fuels consumed in the generation of electricity, steam, heating, and cooling that is consumed by the reporting company Examples include mining of coal, refining of fuels, extraction of natural gas, etc.	
3. T&D losses	Generation (upstream activities and combustion) of electricity, steam, heating, and cooling that is consumed (i.e., lost) in a T&D system – reported by end user	**Transmission & distribution (T&D)**
4. Generation of purchased electricity that is sold to end users	Generation (upstream activities and combustion) 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 Note: This activity is particularly relevant for utility companies that purchase wholesale electricity supplied by independent power producers for resale to their customers	

Well-to-tank (WTT)

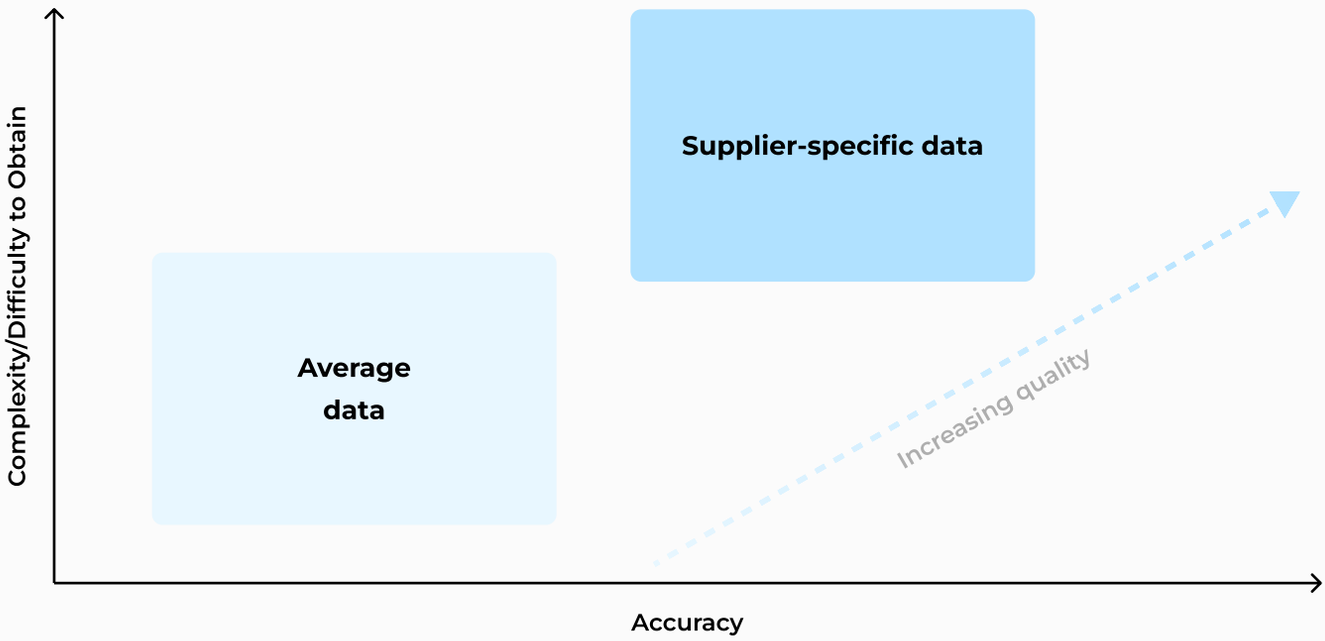
- Emissions associatec with getting energy from the ground to the source of consumption
- This applies to fuels c ɔnsumed directly by a company and the electricity used in a national grid

Transmission & distribution (T&D)

- The losses suffered by transporting electricity from power stations to homes or businesses
- Each grid usually has a T&D factor available



Data maturity matrix



Activity Data Requirements

Total energy purchased by the company:

- *Total kWh of electricity used*
- *Total litres of fuel used*

Specific data on upstream emissions of purchased fuels and electricity:

- *Amount of **fuel/electricity** purchased (litres, kWh)*
- *Specific data from suppliers on fuel extraction, production and transportation*

Emission Factors Required

Emission factors for fuel and electricity (e.g. CO2e per kWh, CO2e per litre)

Supplier-specific emission factors for fuel extraction, production and transportation (e.g. CO2e per kWh)

Category 5
Waste generated in operations

Introduction

Category 5 includes the emissions from third-party disposal and treatment of waste generated in the reporting company's owned or controlled operations in the reporting year. This includes emissions from the disposal of **both solid waste** and **wastewater.**

This category includes all future emissions that result from waste generated in the reporting year.

A reporting company's scope 3 emissions from waste generated in operations are derived from the scope 1 and scope 2 emissions of solid waste and wastewater management companies. Companies may optionally include emissions from transportation of waste in vehicles operated by a third party.

Examples of waste from operations includes:

- Waste from manufacturing processes of a manufacturer
  - Waste medicine
  - Waste packaging
  - Waste from retail sites
  - Waste from offices

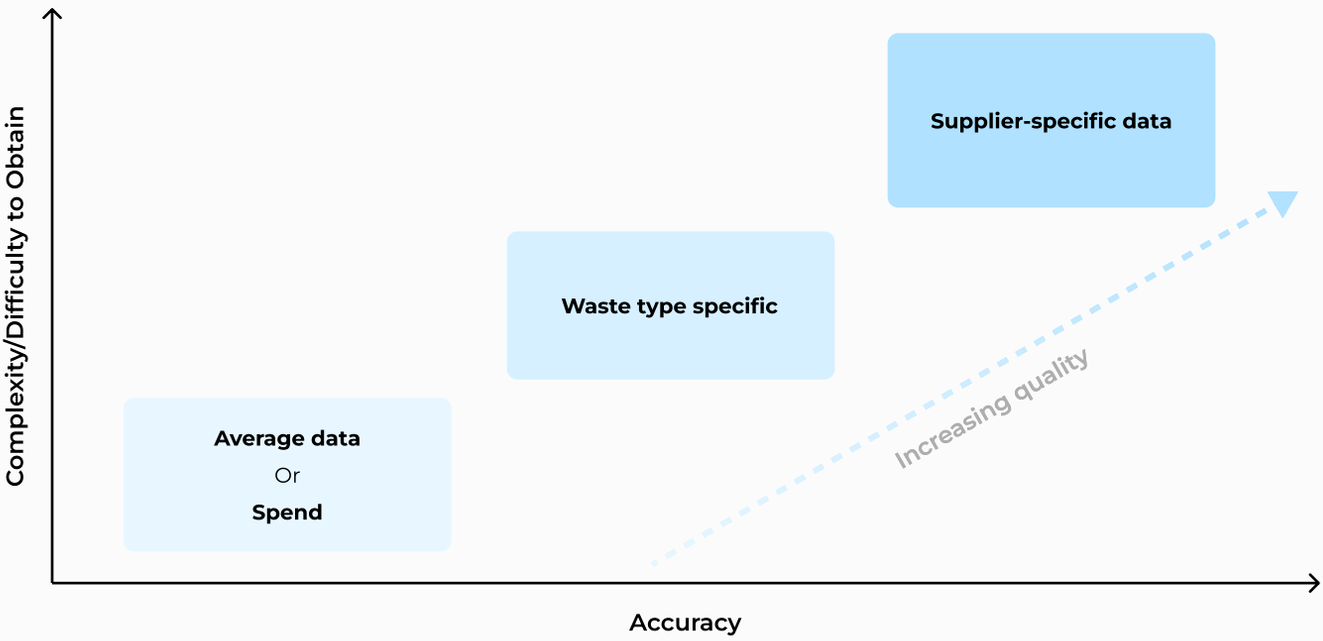
Visibility on this data will differ significantly based on the sector and company type. The pharmaceutical sector should find itself better placed with regards to waste generated in operations, given historical environmental requirements placed on such companies.

Manufacturers	Wholesalers	Retail
Emissions from waste produced during manufacturing operations are likely immaterial for manufacturers to the overall Scope 3 inventory. Typical sources of waste may include: • Medicinal by-products • Packaging waste	Emissions from waste produced during wholesaling operations are likely immaterial. Typical sources of waste may include: • Packaging waste • Waste from office activities	Emissions from waste produced in retail, including pharmacies and hospitals as major retailers of medicine, are likely immaterial to the overall Scope 3 inventory. Typical sources of waste may include: • Packaging & office waste • Hazardous waste

What emission factors for waste can I use?

Where is the waste occurring (geographically)?	Emission Factor databases by country → *France - ADEME*; *US - EPA*; *UK - BEIS*
How **big** is the country in which the waste operations are occurring?	Consider the size of the country in which the waste is occurring, i.e. China/India/Russia are of similar magnitudes to the US
What types of **regulations** exist in the country where the waste operations are occurring?	Regulations around how waste is treated can differ from country to country. For instance, incineration without energy recovery in the UK is no longer allowed. In the US, incineration without energy recovery is still common practice.

Data maturity matrix



Activity Data Requirements	• *Total mass of waste generated in operations* • *Average proportion of waste treated by different methods* • *Waste treatment services invoices & bills*	• *Waste produced and type of waste generated in operations* • *Specific waste-treatment method applied for each waste type*	• *Allocated scope 1 and scope 2 emissions of the waste-treatment company*
Emission Factors Required	• *Average waste-treatment specific emission factors based on all waste disposal types* • *Databases: DEFRA, ADEME, US EPA*	• *Waste-type and waste-treatment specific emission factors* • *Databases: DEFRA, ADEME, US EPA*	*None required (already used by waste-treatment company)*

Category 6
Business travel

Introduction

Scope 3, Category 6 (business travel) includes emissions associated with the transportation of employees for business-related activities in vehicles owned or operated by third parties in the reporting year. Emissions from Business Travel may arise from:

Flights

Rail

Automobile

Taxis

Bus/Coach

Tram/Metro

For Category 6, companies may optionally include emissions from business travelers staying in hotels.

While a comparatively small source of emissions for companies in the pharmaceutical sector, contributing on average 0.2% - 1.1% (see page 11 for CDP sector average) of the total Scope 3 inventory, it is typically relevant and has readily available data, either in the form of spend or distance.

How do you account for employee transportation across the value chain and when is it specifically attributable to Scope 3 Category 6?

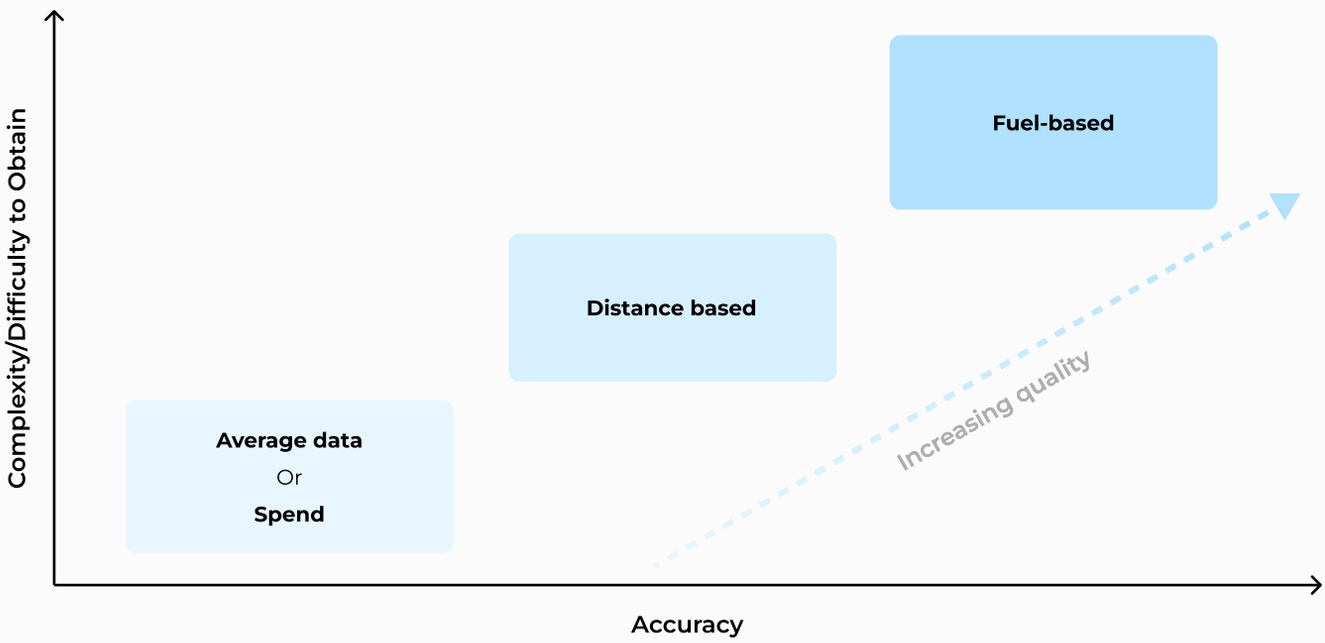
Activity	Relevant category of emissions
Emissions from transportation in vehicles owned or controlled by the reporting company	Scope 1 (for vehicles that consume fuel) and scope 2 (for vehicles that consume electricity
Emissions from the transportation of employees for business-related activities in vehicles owned or operated by third parties	**Scope 3, Category 6 (Business travel)**
Emissions from transportation of employees to and from work	Scope 3, Category 7 (Employee Commuting)
Emissions from leased vehicles operated by the reporting company not included in Scope 1 or Scope 2	Scope 3, Category 8 (Upstream Leased Assets)

Where can I find data internally on employee travel?

Business travel data can be collected through multiple streams within a company. Typically, the most common sources include:

- Human resources
- Finance, through purchase ledgers or expense receipts
- Through business travel agencies or other third-party service providers

Data maturity matrix



Activity Data Requirements	*Money spent on travel:* • *Total expenditure on flights, hotels, car rentals* • *Financial records of travel expenses*	*Distance travelled by mode of transport:* • *Kms travelled by air, rail, car, etc.* • *Travel itineraries and distance logs*	*Type and quantity of fuel consumed during business travel* • *Specific fuel consumption data from travel records*
Emission Factors Required	*Environmentally Extended Input-Output (EEIO) emission factors per monetary unit spent (e.g. CO2e dollar)*	*Emission factors per kilometre for each mode of transport (e.g. CO2e per km for flights)*	*Emission factors for specific fuels used (e.g. CO2e per litre of gasoline)*

Category 7
Employee commuting

Introduction

Scope 3, Category 7 (employee commuting) includes emissions associated with the transportation of employees between their homes and their worksites in the reporting year. Emissions from employee commuting may arise from:

Flights *Rail* *Automobile* *Taxis* *Bus/Coach* *Tram/Metro*

While under the GHG Protocol standard, it is optional to include emissions from teleworking (i.e. employees working from home), they are recommended to include for a comprehensive Scope 3 Category 7 inventory.

If teleworking emissions are included, companies should consider:

-Air conditioning (if applicable, for cooling)

-Gas consumption (if applicable, for heating)

-Electricity consumption (for equipment and lighting)

Optionally, you can find more information on EcoAct's whitepaper on Homeworking & Commuting emissions for further details, methods and assumptions.

How do you account for employee transportation across the value chain and when is it specifically attributable to Scope 3 Category 6?

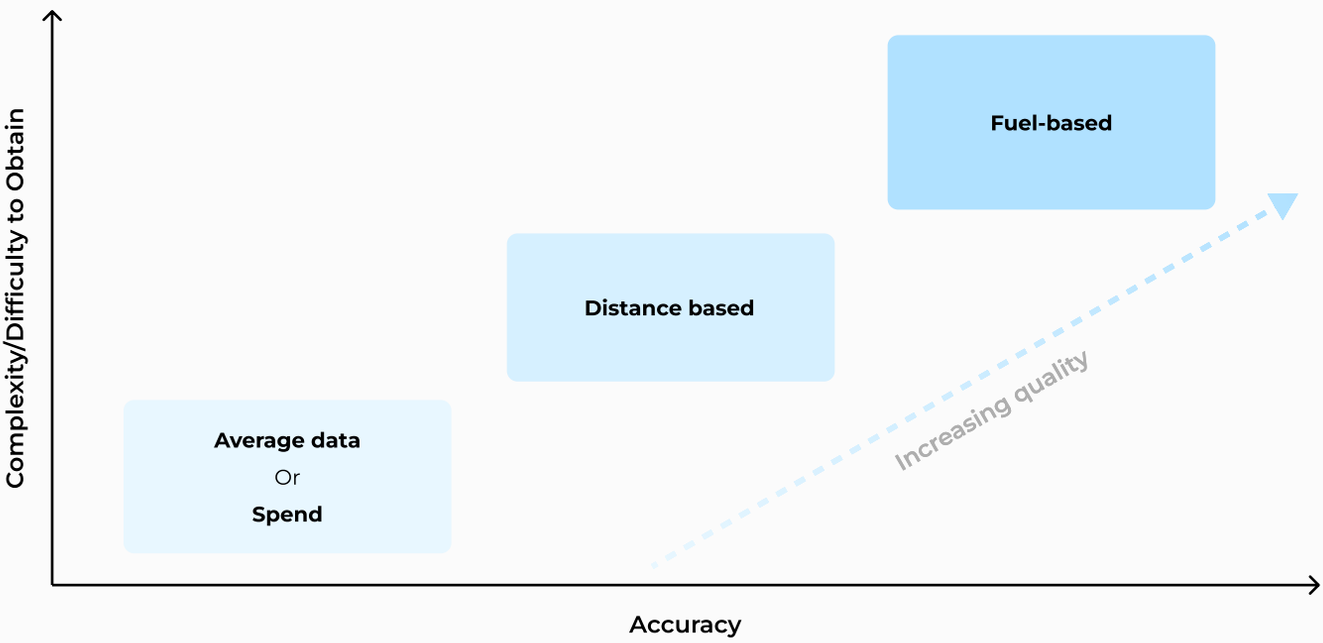
Activity	Relevant category of emissions
Emissions from transportation in vehicles owned or controlled by the reporting company	Scope 1 (for vehicles that consume fuel) and scope 2 (for vehicles that consume electricity
Emissions from the transportation of employees for business-related activities in vehicles owned or operated by third parties	Scope 3, Category 6 (Business travel)
Emissions from transportation of employees to and from work	**Scope 3, Category 7 (Employee commuting)**
Emissions from leased vehicles operated by the reporting company not included in Scope 1 or Scope 2	Scope 3, Category 8 (Upstream leased assets)

How can I improve visibility on employee commuting habits and collect data on this?

As companies begin to pay more attention to company activities that may contribute to emissions inventories, special attention is paid to company habits that could more easily be encouraged (or equally, discouraged), i.e. the 'quick [decarbonisation] wins'.
Indeed, increasing visibility on commuting habits is rising in popularity. Companies can do so through:

- Employee surveys
- Feedback forms
- Line management

Data maturity matrix

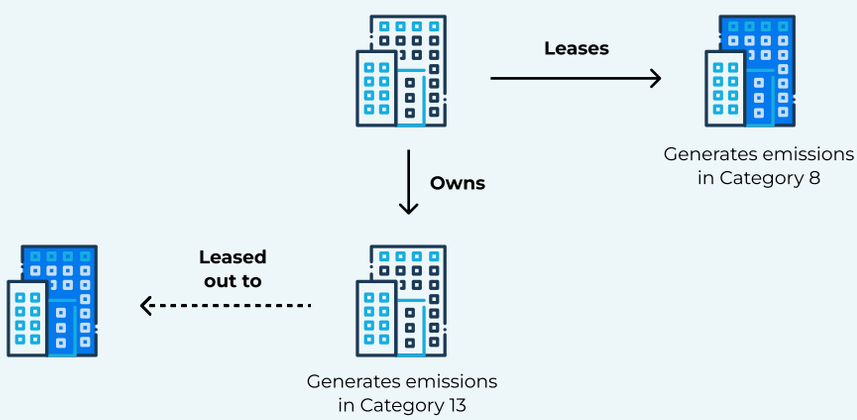


	Average data Or Spend	Distance based	Fuel-based
Activity Data Requirements	• *Number of employees* • *Average distance travelled* • *Average breakdown of transport modes* • *Average number of working days*	*Distance travelled by mode of transport:* • *Kms travelled by employees* • *Mode of transport used for commuting*	*Type and quantity of fuel consumed by employee commuting* • *Specific fuel consumption data from travel records*
Emission Factors Required	*Emission factors for each mode of transport*	*Emission factors per passenger- kilometres travelled for each mode of transport*	*Emission factors for specific fuels used (e.g. CO2e per litre of gasoline)*

Category 8
Upstream leased assets

Introduction

Scope 3, Category 8 (upstream leased assets) and Category 13 (downstream leased assets) are similar in terms of emission sources. They include the emissions from the operation of assets that are leased, or being leased, by the reporting company.



As per the definition of upstream and downstream by the GHG Protocol, Category 8 (upstream) defines emissions from assets leased by the reporting company. Category 13 (downstream) defines emissions from assets owned by the reporting company, being leased out to third parties.

Finance or capital lease

Enables the lessee to operate an asset and gives the lessee all the risks and rewards of owning the asset. These types of leasing arrangements are considered ***wholly owned assets*** in financial accounting.

Under a finance or capital lease, the lessee is considered to have ownership and both financial ***and*** operational control of the leased asset, categorising the emissions from this source as ***direct Scope 1.***

For instance, a specialised T&D provider for pharmaceutical wholesalers, Pharma2Go, leases its vehicles from a vehicle leasing company and its warehouses from private landlords.

The vehicles are considered a capital lease. Therefore, all emissions associated to the consumption of fuel to operate these are considered in the provider's Scope 1 (&2) inventory.

Operating lease

Enables the lessee to operate an asset but does ***not*** give the lessee any of the risks and/or rewards of owning the asset.

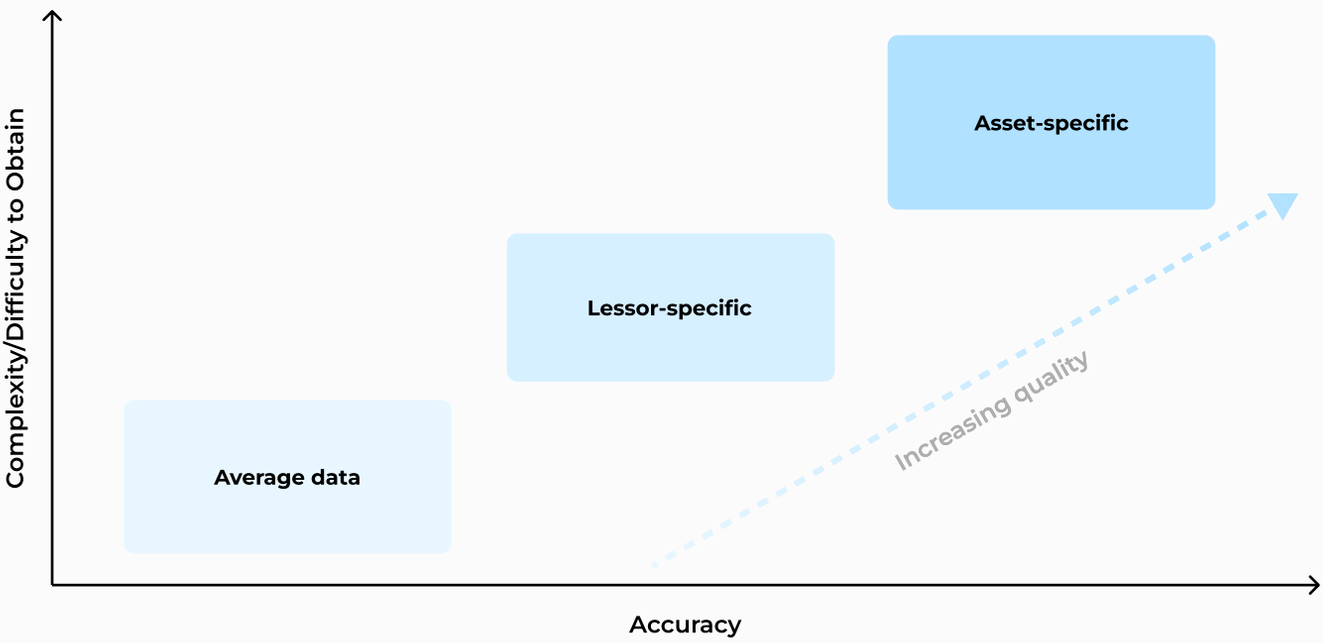
Categorisation of emissions for this type of lease are dependent upon the ***organisational boundary approach selected*** (see page 12 for consolidation approaches).

If an ***operational approach*** is used, emissions from operating leases will be considered direct and categorised in the reporting company's Scope 1 (&2).

If an ***equity*** or ***financial control approach*** is adopted, emissions from Operating Leases will fall into Scope 3, Category 8 or 13.

If Pharma2Go were to select a financial control approach to calculate its carbon inventory, any emissions from the operation of vehicles under an operating lease should be categorised into their Scope 3, Category 8.

Data maturity matrix



	Average data	Lessor-specific	Asset-specific
Activity Data Requirements	Average emissions per asset type or floor space: • Average energy consumption per m2 for similar assets • Average fuel use per asset type	Total emissions data from lessor: • Lessors scope 1 and 2 emissions • Proportion of floor space leased by the company	Fuel and electricity consumption data for leased assets: • kWh of electricity and litres of fuel consumed by leased assets • Utility bills and fuel consumption
Emission Factors Required	Average emission factors for similar assets (e.g. CO2e per m2)	Allocation based on the proportion of leased space (e.g. total emissions per m2)	Specific emission factors for fuel and electricity use (e.g. CO2e per kWh)

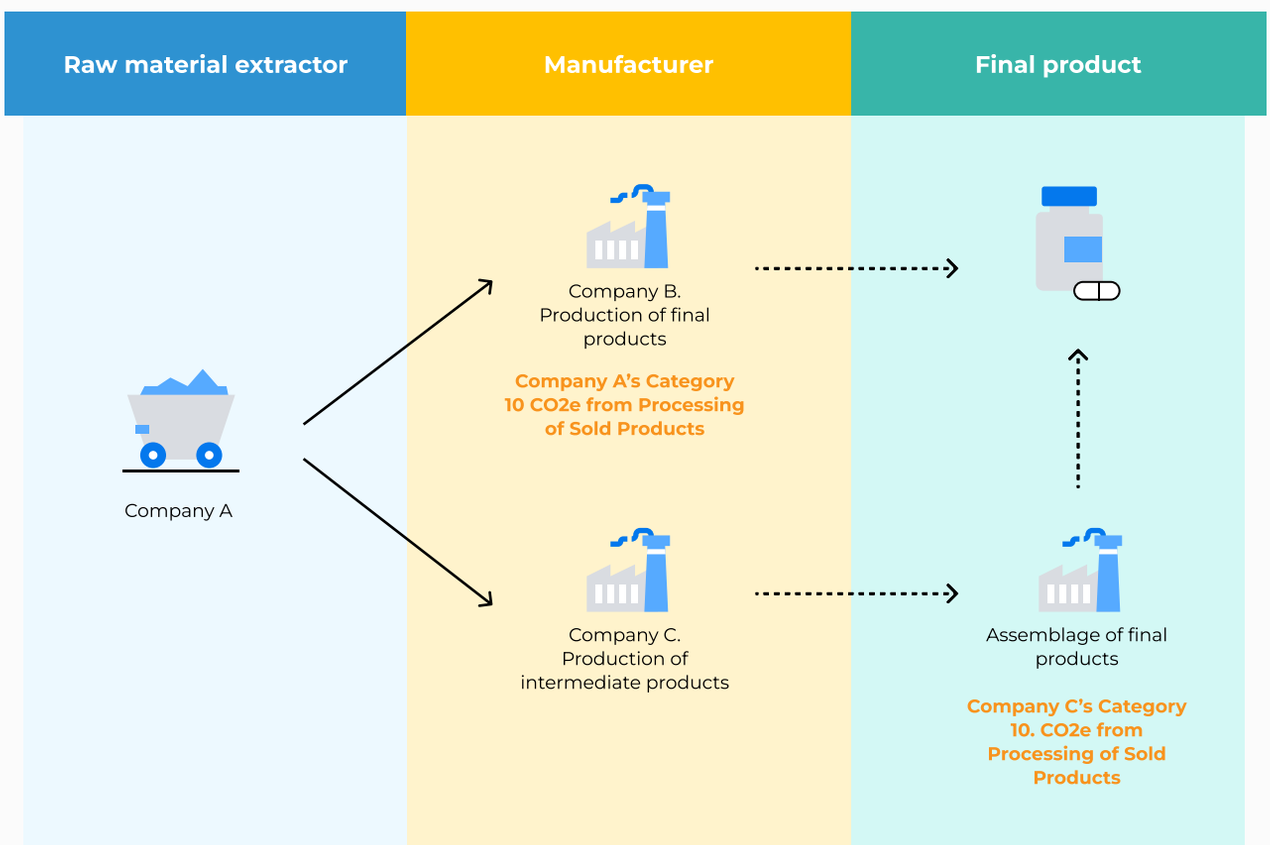
Category 10
Processing of sold products

Introduction

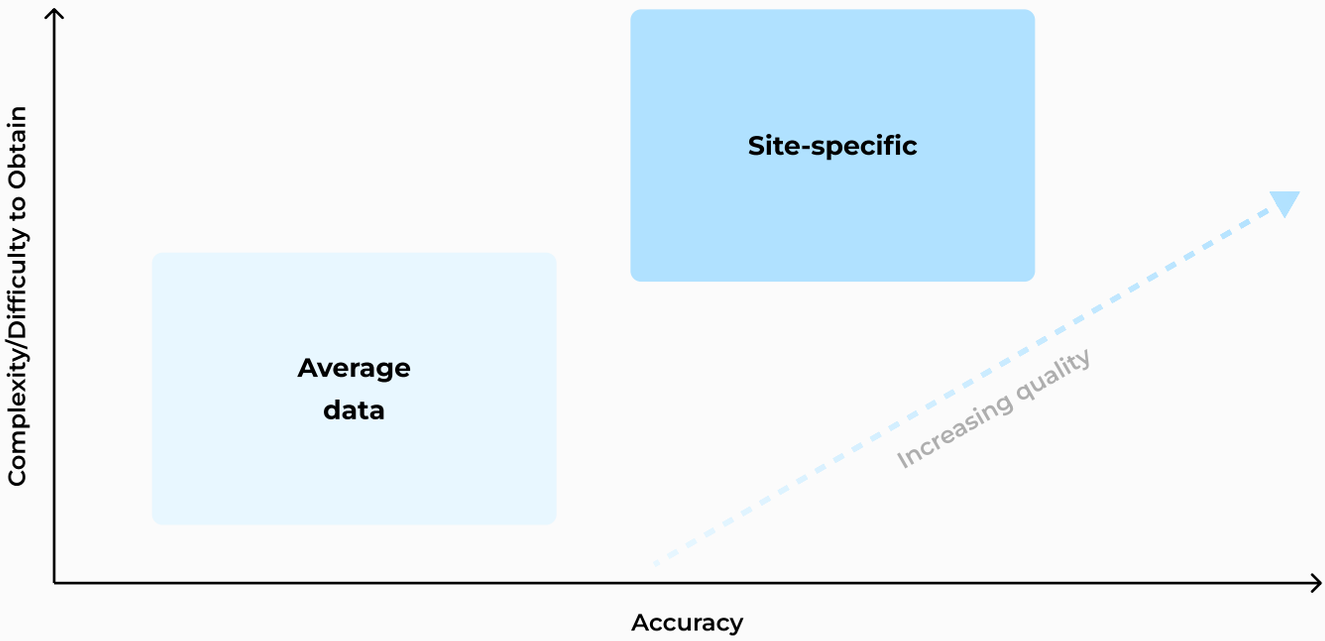
Scope 3, Category 10 (processing of sold products) includes emissions associated with the processing of sold intermediate products by third parties downstream of the reporting company.

Selling APIs and other raw materials to a manufacturer would be considered selling intermediate products. This is because to get to the final product, these require further processing, transformation, or inclusion of other products.

Typically, in the pharmaceutical value chain, Category 10 will likely be relevant for a very small portion of the value chain network: 1) for raw material extractors and when the reporting company manufactures intermediary APIs; 2) when the reporting company produces semi-finished products that are sold to other pharmaceutical companies further down the value chain, and these are responsible for the packaging of this semi-finished good.



Data maturity matrix



	Average data	Site-specific
Activity Data Requirements	Types of downstream processes • The processes involved in transforming final products • Information needed for allocation (e.g. mass, economic value)	Types and quantities of intermediate goods sold • Quantities of energy • Mass of waste generated • Non-combustion emissions (if applicable)
Emission Factors Required	Average emission factors for processing stages required to transform final products	• Emission factors for fuels • Emission factors for electricity • Emission factors for waste outputs • Emission factors for non-combustion emissions (if applicable)

Category 11
Use of sold products

Introduction

Scope 3, Category 11 (use of sold products) includes emissions associated with the use of products and services sold by the reporting company in the reporting year. If calculating for goods, companies should include the lifetime emissions associated with that good. If calculation for services, companies should only include emissions associated with the provision of the service for the reporting year.

These emissions can be divided into two types:

1. Direct use-phase emissions (required)
2. Indirect use-phase emissions (optional)

Companies may also (optionally) include emissions associated with the maintenance of sold products during use. This is likely to be irrelevant or immaterial for the pharmaceutical industry.

Direct use-phase vs. Indirect use-phase

Direct use-phase:

- Products that directly consume energy or emit greenhouse gases during use.
- E.g., release of GHGs from products like inhalers.

Indirect use-phase:

- Products that indirectly consume energy during use.
- E.g., vaccines that require refrigeration.
- Likely to be smaller, should only be tackled by companies at an advanced stage of emissions calculations

When might Category 12 contribute significantly to a Scope 3 inventory?

For the pharmaceutical sector, emissions from the use of products are seen to contribute between 9.7% and 16.8% (see page 11 for CDP sector average) of the total Scope 3 inventory.

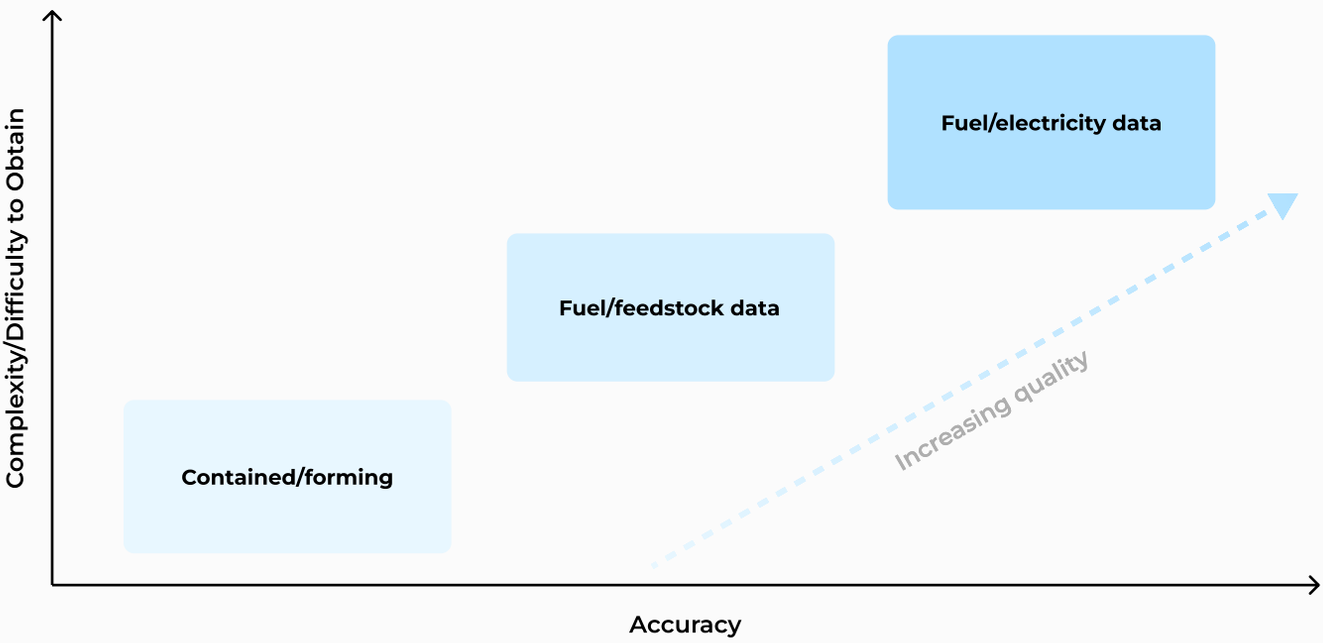
Direct use-phase emissions
Manufacturers and wholesalers producing and selling inhalers, among other products that use energy, fuel or emit other greenhouse gasses, will find that their Category 12 (use of sold products) will contribute significantly to their Scope 3 inventory. Indeed, inhaler emissions are likely to be significant as propellants have a high global warming potential (GWP).
In this case, it is important to have at-hand the specificities of these products, including for instance, the name of the propellants and the quantity or propellant on a per-unit basis.

Indirect use-phase emissions
These emissions are likely to be smaller compared to direct use-phase emissions and may be more difficult to calculate. Therefore, it is recommended for companies at advanced stages of emissions calculations to tackle these emissions sources.
If possible, where manufacturers and wholesalers sell medicinal products that require refrigeration, estimations will need to be used given the lack of visibility downstream. According to the Pharmaceutical Supply Chain Initiative, energy used for refrigeration at wholesalers and pharmacies is estimated to be:

- 40 kWh/m3 per year,
- With an average storage time at 90 days.
-

Activity data will relate to the number of boxes or units of product sold.
By multiplying the estimated refrigeration energy by the storage time by the units or boxes of product sold, a final refrigeration energy usage figure can be multiplied by the most appropriate emission factor.

Data maturity matrix



	Contained/forming	Fuel/feedstock data	Fuel/electricity data
Activity Data Requirements	• *Quantity of products sold* • *Amount of GHGs contained in or formed by the product during its use* • *Usage and disposal patterns*	• *Quantity of fuels/feedstocks sold* • *Expected lifetime consumption of fuels/ feedstocks* • *Product specifications and usage patterns*	• *Quantity of products sold* • *Expected lifetime usage of products in hours or units of activity*
Emission Factors Required	*Emission factors for GHGs contained in or emitted by the product during its lifetime (e.g. CO2e per unit of GHG contained)*	*Emission for the combustion or conversion of fuels and feedstocks (e.g. CO2e per litre of fuel)*	*Emission factors for electricity or fuel used during the products lifetime (e.g. CO2e kWh, CO2e per litre)*

Category 12
End-of-life treatment of sold products

Introduction

Scope 3, Category 12 includes emissions associated with the waste disposal and treatment of products sold by the reporting company in the reporting year.

As is the case with most downstream Scope 3 categories, calculating emissions for Category 12 requires several assumptions to be made about the end-of-life treatment methods used by consumers.

Companies are required by the GHG Protocol to clearly outline all the assumptions and estimations used to calculate emissions from Category 12 in the calculation methodology. For sold intermediate products, companies should account for the emissions from disposing of the intermediate product at the end of its life, not the final product.

Case study

BulkMed is a pharmaceutical wholesaler who buys medicine in bulk from the biggest medical manufacturer in Europe, MedicEur.

To calculate emissions from Category 12, End-of-Life Treatment of Sold Products, the sustainability team requires the sales team to share information on the quantity of medicine sold. As it is now the 3rd year of this data being requested across teams, the sales team is able to share the following detailed breakdown of the medicines sold.

Category	Description	Unit	Country of Destination
Aspirin	250,000	Kg	Supplier-specific approach
OkiTask	15,000	Packs of 6	Supplier-specific approach
Paracetamol	199,241,145	Pills	Supplier-specific approach

The sales team was able to provide the country of destination in this year's dataset, which will allow for slightly higher confidence on the assumptions applied regarding the treatment method.

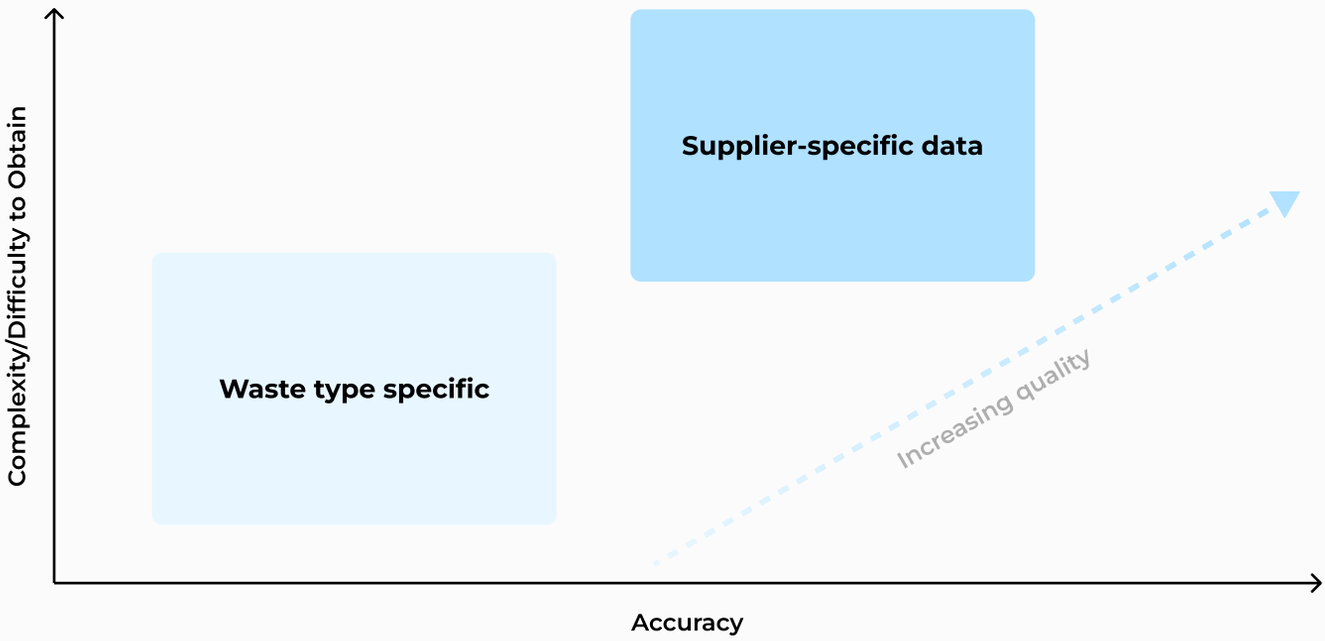
Using the above information, the BulkMed sustainability team can:

- Calculate a final weight
  - Kilograms and tonnes can be used in calculations directly
  - Other units will need to be converted using assumptions on pack & pill weights (in previous years these assumptions were reviewed and agreed upon also by the procurement team)
- Apply treatment method assumptions
  - In previous years, BulkMed used the World Bank's WhatAWaste dataset to derive a European average waste treatment type. This year, given the visibility on destination country of sold product, BulkMed can apply waste treatment type assumptions at a country level, rather than using a regional average.

Finally, the weight can be summed by country. The waste treatment percentages are applied to the weight and these are multiplied by the relevant emission factor.

Type of Sold Product	Total Weight (kg)	Country of Destination	WhatAWaste Dataset - Recycling % by Country	Total Weight Recycled	Emission Factor (Medicine, Recycled, kgCO2e/kg)	Emissions (kgCO2e)
Medicine - Aspirin	250,000	Italy	75%	250,000 * 75% = 187,500 kg	0.882	165,375

Data maturity matrix



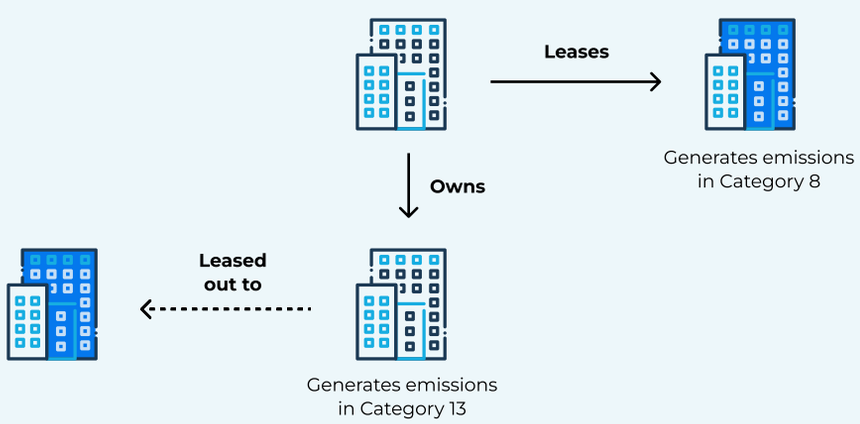
Activity Data Requirements	• *Total mass of sold products (kg, litres, units)* • *Average waste treatment method by waste type (i.e. The World Bank, Government resources)*	• *Average supplier-specific emission factors of the waste treatment companies in the country of occurrence*
Emission Factors Required	• *Waste-type and waste-treatment specific emission factors* • *Databases: DEFRA, ADEME, US EPA*	*Average waste-treatment specific emission factors for all waste treatment types*

Category 13
Downstream leased assets

Introduction

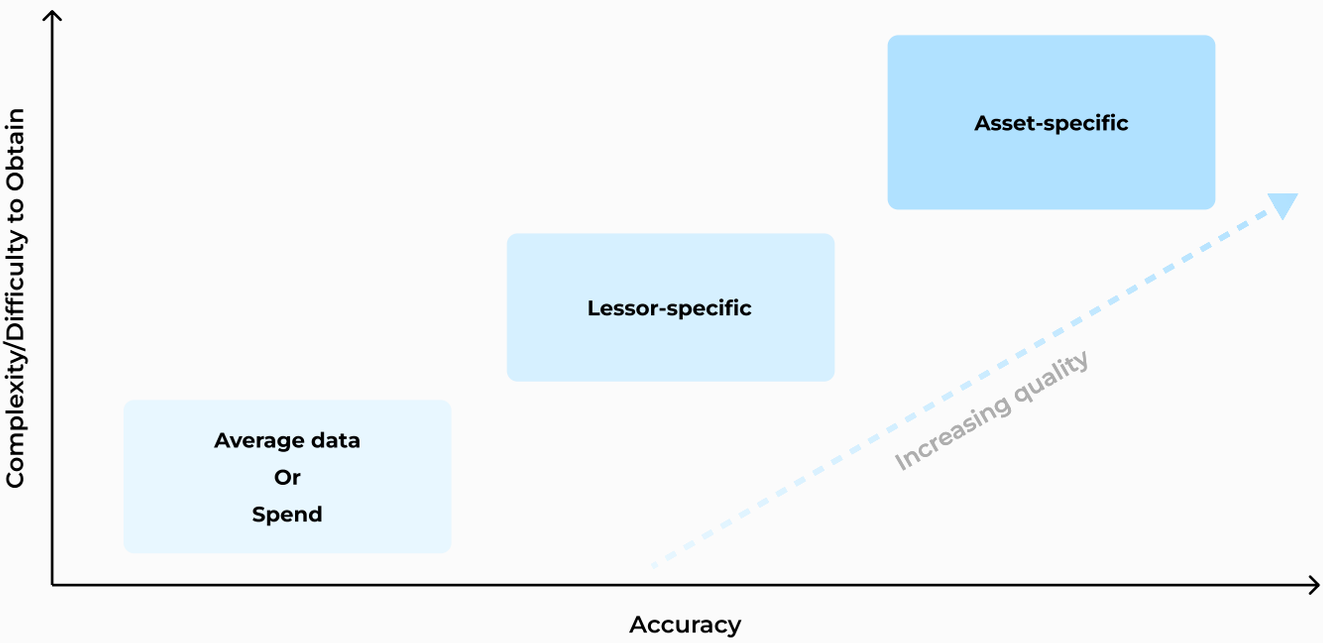
Scope 3, Category 8 (upstream leased assets) and Category 13 (downstream leased assets) are similar in terms of emission sources. They include the emissions from the operation of assets that are leased (Category 8), or being leased (Category 13), by the reporting company. See page 62 on lease types.

Similarly to the accounting of emissions from Category 8, a company should only account for the emissions from the portion of the year that the asset was leased. When this asset falls back under the lessee's control, emissions should consequently be allocated in the Scope 1 & 2 of the lessees inventory.



Emissions from these assets are likely immaterial for companies operating in the pharmaceutical sector. However, where owned assets that are leased out to third parties exist, it is best practice to collect and maintain a database of primary energy and fuel usage.

Data maturity matrix

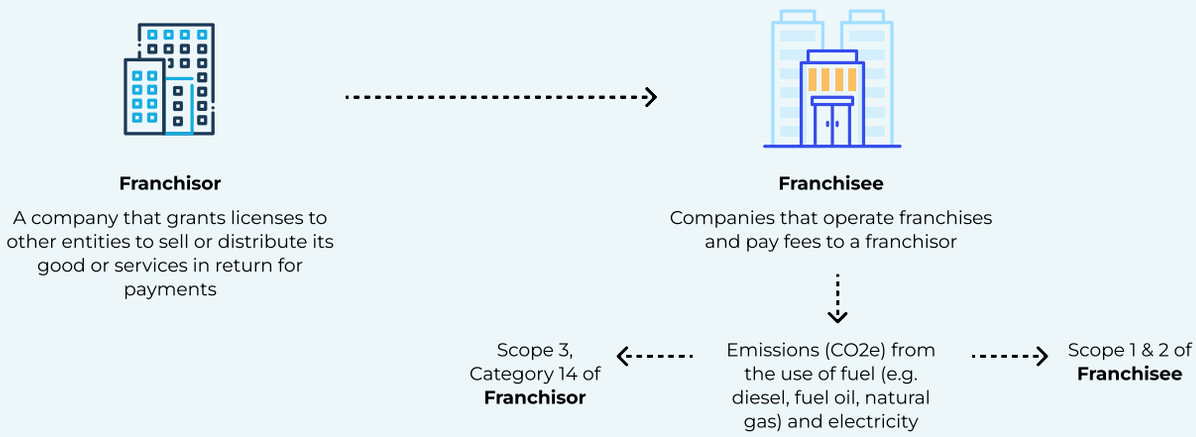


Activity Data Requirements	*Average emissions per asset type or floor space:* • *Average energy consumption per m2 for similar assets* • *Average fuel use per asset type*	*Total emissions data from lessor:* • *Lessors scope 1 and 2 emissions* • *Proportion of floor space leased by the company*	*Fuel and electricity consumption data for leased assets:* • *kWh of electricity and litres of fuel consumed by leased assets* • *Utility bills and fuel consumption*
Emission Factors Required	*Average emission factors for similar assets (e.g. CO2e per m2)*	*Allocation based on the proportion of leased space (e.g. total emissions per m2)*	*Specific emission factors for fuel and electricity use (e.g. CO2e per kWh)*

Category 14
Franchises

Introduction

Scope 3, Category 14 (Franchises) includes emissions associated with the reporting company's franchises, not included in Scope 1 or 2. Emissions from franchises are likely relevant for pharmacies and hospitals.

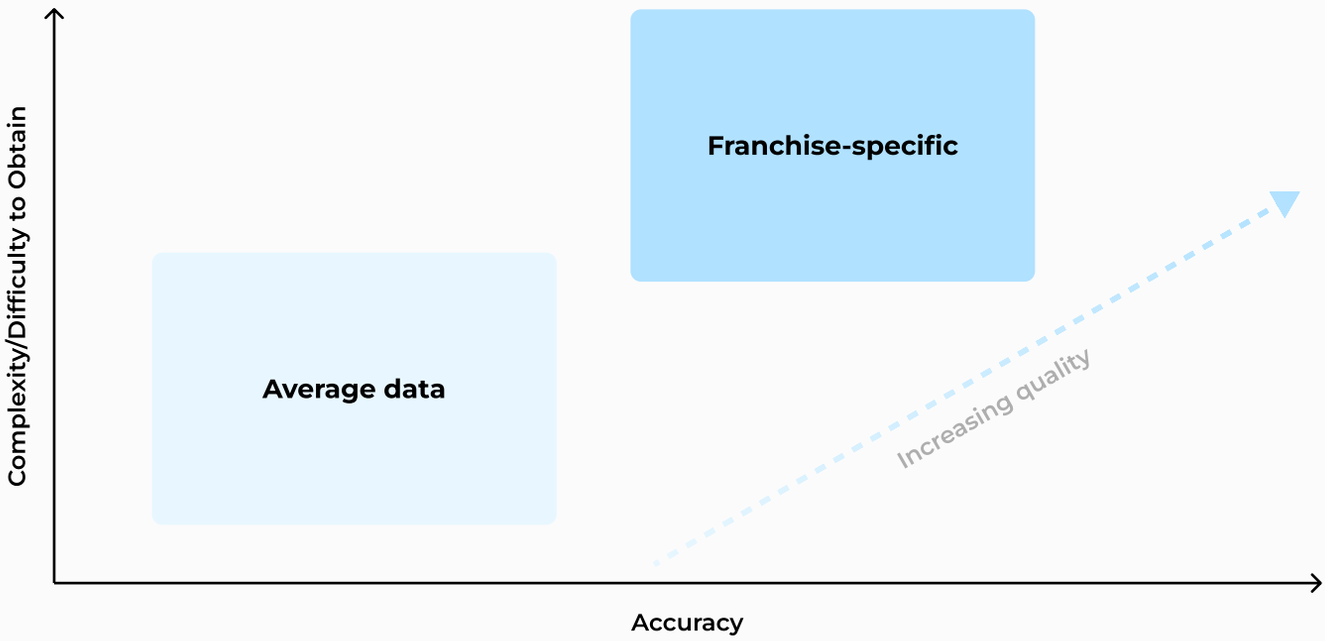


Franchise Case Study

BENU Farmacia is a chain of pharmacy franchises that operate across Italy under the parent company PHOENIX Pharma Italia. The affiliate programme offers autonomy to the independent pharmacist while enabling use of BENU Farmacia's commercial, financial, and managerial support. Following a rebrand in September 2023, the project now has over 100 private pharmacies.

Within Phoenix Pharma Italia's Scope 3 inventory, it is expected for Category 14 to be relevant and material given their need to disclose on the Scope 1 & 2 of all 100 BENU Farmacia across Italy.

data maturity matrix



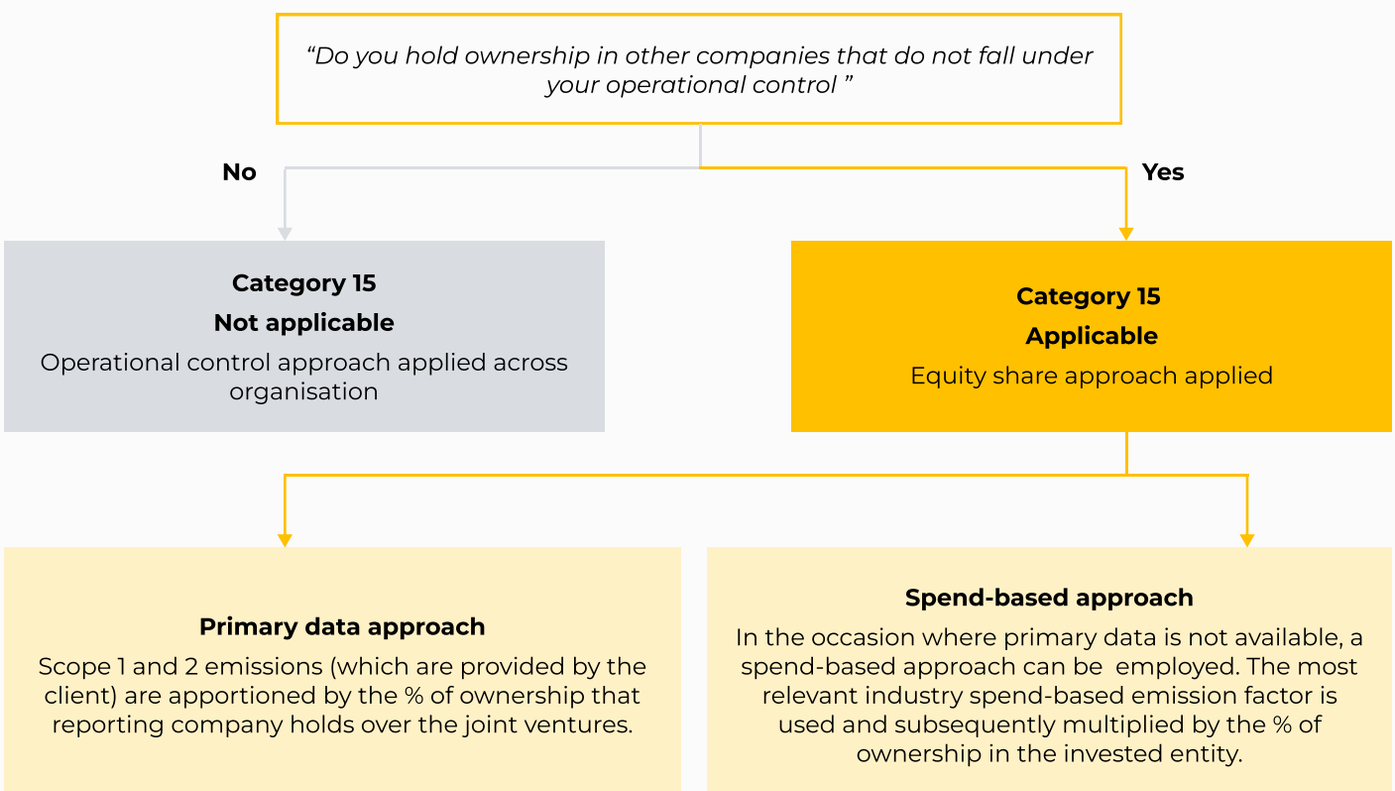
Activity Data Requirements	• *Floors space of each franchise* • *Number of franchises by building type* • *Number of GHG-emitting franchise assets*	• *Scope 1, scope 2 and (optionally)scope 3 emissions data from franchises* • *Site-specific fuel use, electricity use and process and fugitive emissions data*
Emission Factors Required	• *Emission factors by floor space* • *Emission factors by building type* • *Emission factors by asset type*	• *Site- or regionally-specific emission factors for energy sources* • *Emission factors of process and fugitive emissions* • *Upstream emission factors*

Category 15
Investments

Category 15. Investments

Scope 3, Category 15 (investments) includes emissions associated with investments made by the reporting company in the reporting year. This category is primarily applicable to investors and companies that provide financial services, and therefore deemed likely to be immaterial for most pharmaceutical companies. Nonetheless, it may still contribute a fractional amount of the Scope 3 inventory.

Companies that choose an operational or financial control consolidation approach to calculate their GHG inventory should account for emissions from any joint ventures, subsidiaries, or financing activities that their company has financial stake in but does not wholly own or control. The respective Scope 1 and 2 emissions from the not-wholly-owned entities should be reported in your Scope 3 Category 15, proportionate to your company's equity share. For example, if your company has a joint venture with a third party in which it has 10% ownership but does not have operational control over, 10% of the scope 1 and 2 emissions generated by the set joint venture should be reported under Category 15.



Summary of Category 15 Inclusion rationale, data collection & calculation approach

Step 1.
Enquire about ownership

"Do you hold ownership in other companies that do not fall under your operational control (i.e. do they fall under your financial accounts)?"

Step 2.
Identify joint ventures or associate companies

Do you have any joint ventures or associate companies that do not fall under your accounts"

Step 3.
Enquire about available data

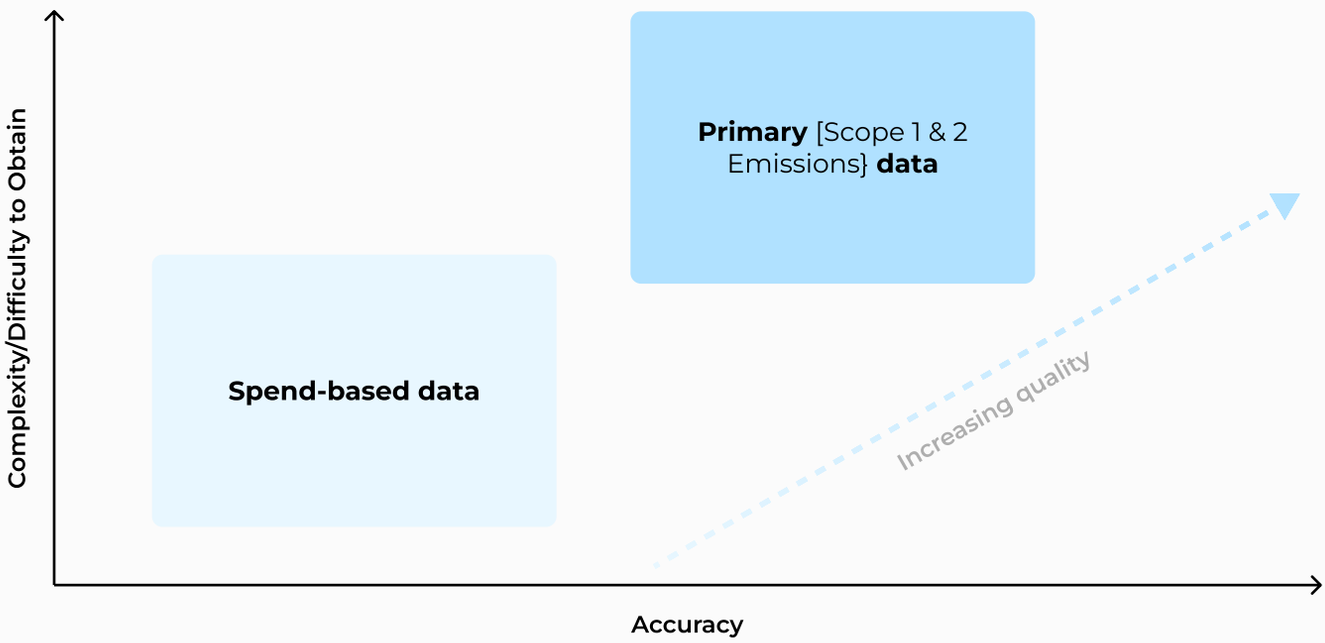
- Check for Scope 1 & 2 data
- Scrutinise financial and emission data based on publicly available information

Step 4.
Conduct calculation

Depending on data available, follow the calculation methodologies outlined:

- Primary-Data based
- Spend-Based

Data maturity matrix



Activity Data Requirements	• *Revenue of invested entity*	• *Equity share in the invested entity (%)*
Emission Factors Required	*Average emission factors for similar investments or sectors (e.g. CO2e per dollar invested)*	*Scope 1 and 2 emissions from invested companies*

Appendix

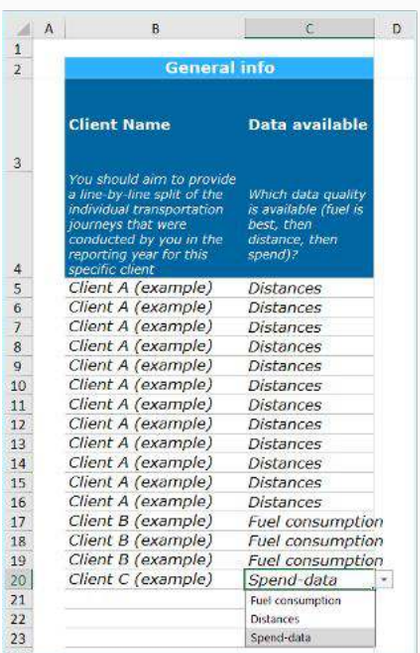
Emission Factor Databases
Summary

Database	Type of Data	Geography	Description	Relevant Scope, Category
BEIS (previously DEFRA)	Activity-based, spend-based	Typically United Kingdom, but can be applied to geographically proximate countries	The UK Government issues emission conversion factors for use by UK and international organisations to report on greenhouse gas emissions.	• Scope 1 • Scope 2 • Scope 3, Categories 1-15
CEDA	Spend-based	Global	The Comprehensive Environmental Data Archive (CEDA) is an environmental Multi Region Input Output (MRIO) model designed to assist various environmental systems analysis, including life cycle assessments (LCA), carbon footprints, and sustainable spend analyses.	• Scope 3, Categories 1-15 (except 3, 7, 8, 13, and 14)
EcoInvent	Activity-based	Multiple regions, Global	EcoInvent is a Swiss not-for-profit association that provides a Life Cycle Inventory (LCI) database that supports various types of sustainability assessments.	• Scope 3, Category 1 • Scope 3, Category 2 • Scope 3, Category 5
EEA	Activity-based	European countries	The European Environment Agency (EEA) is an EU agency that provides independent scientific and technical information to support environmental policies and sustainable development in Europe through data analysis, assessment, and reporting.	• Scope 2 • Scope 3, Categories 3, 8, 13, and 14
EXIOBASE	Spend-based	Multiple regions	EXIOBASE is a global, detailed Multi-Regional Environmentally Extended Supply-Use Table (MR-SUT) and Input-Output Table (MR-IOT).	• Scope 3, Categories 1-15 (except 3, 7, 8, 13, and 14)
IEA	Activity-based	Global	The International Energy Agency (IEA) provides comprehensive electricity emission factors, which are essential for understanding the carbon footprint of electricity generation across different regions and energy sources.	• Scope 2 • Scope 3, Categories 3, 8, 13, and 14
ADEME (Base Carbone)	Activity-based	Primarily France, but may be applicable to other European countries or even serve as a reference globally	The Agence de la transition ecologique (ADEME) is a French public agency under the Ministry of Ecological Transition and the Ministry of Higher Education, Research and Innovation. It produces a variety of environmental and energy-related data, including for carbon emissions and climate impact, offering factors for GHG emissions calculations across multiple sectors.	• Scope 1 • Scope 2 • Scope 3 (all Categories)
EcoTransIT	Distance-based	Global	EcoTransIT is a recognised tool in the logistics industry. It determines the emissions from logistics (i.e. Category 4 and Category 9) using an energy-based bottom-up approach: emissions are determined on the basis of the energy consumed and the fuel used. The methodology adopted include the ISO14083 and GLEC-compliant calculation.	• Scope 3, Categories 4 & 9

Category 4 & 9
Data collection template

The screenshots below are taken from the Scope 3 Category 4 & 9 Data Collection template. They are to be used in facilitating data collection for these Scope 3 categories.

1

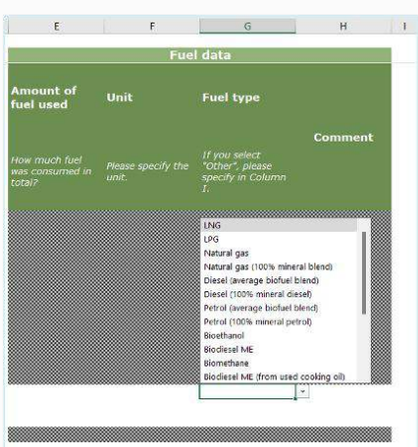


	A	B	C	D
1				
2		General info		
3		Client Name	Data available	
		You should aim to provide a line-by-line split of the individual transportation journeys that were conducted by you in the reporting year for this specific client	Which data quality is available (fuel is best, then distance, then spend)?	
4				
5		Client A (example)	Distances	
6		Client A (example)	Distances	
7		Client A (example)	Distances	
8		Client A (example)	Distances	
9		Client A (example)	Distances	
10		Client A (example)	Distances	
11		Client A (example)	Distances	
12		Client A (example)	Distances	
13		Client A (example)	Distances	
14		Client A (example)	Distances	
15		Client A (example)	Distances	
16		Client A (example)	Distances	
17		Client B (example)	Fuel consumption	
18		Client B (example)	Fuel consumption	
19		Client B (example)	Fuel consumption	
20		Client C (example)	Spend-data	
21			Fuel consumption	
22			Distances	
23			Spend-data	

[1] This first box (columns B to C) will dictate the remainder of the data collection template. Based on the 'Data available' option selected, other cells will either appear or grey out further into the template.

The options presented are: Fuel consumption (fuel based data), Distances (distance based data), or Spend-data (spend based data).

2



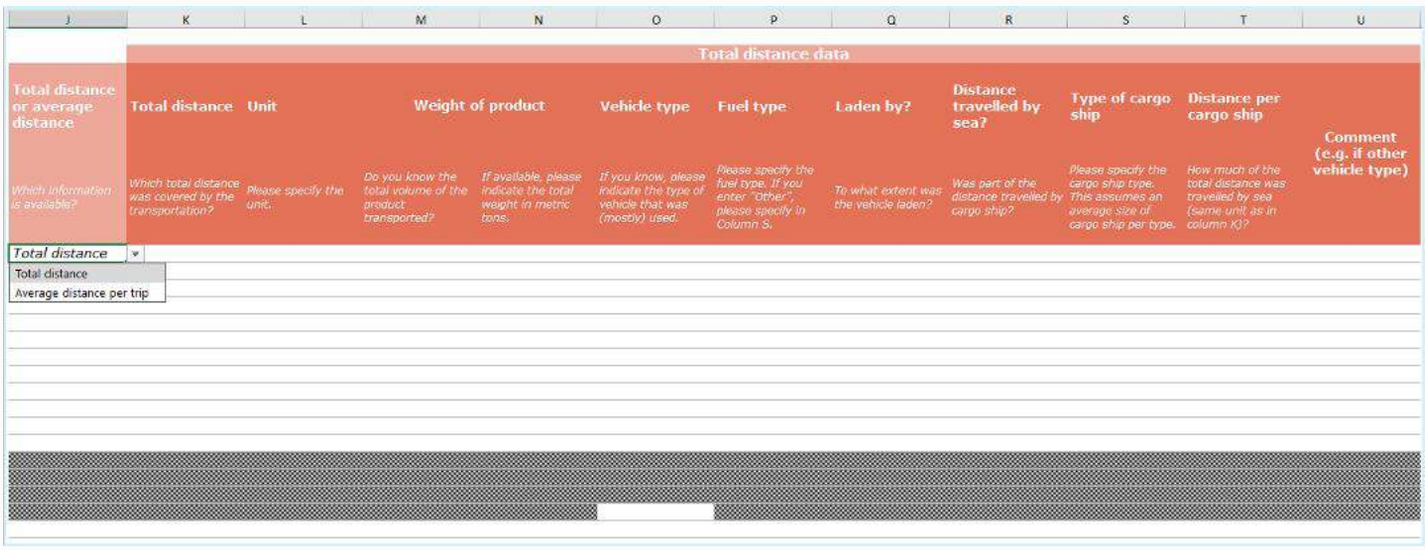
	E	F	G	H	I
	Fuel data				
	Amount of fuel used	Unit	Fuel type	Comment	
	How much fuel was consumed in total?	Please specify the unit.	If you select "Other", please specify in Column I.		

LNG
LPG
Natural gas
Natural gas (100% mineral blend)
Diesel (average biofuel blend)
Diesel (100% mineral diesel)
Petrol (average biofuel blend)
Petrol (100% mineral petrol)
Bioethanol
Biodiesel ME
Biomethane
Biodiesel ME (from used cooking oil)

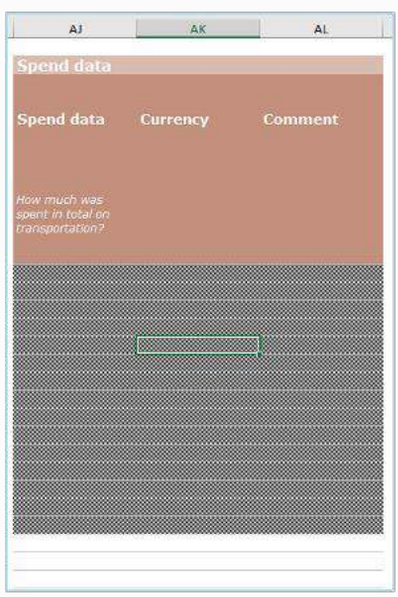
[2] The second box (columns E to H) is only applicable where 'Fuel consumption' is chosen as the available data in column C.

3

[3] The third box (columns J to U) is only applicable where ‘Distances’ is chosen as the available data in column C. If ‘Average distance per trip’ is selected in column J, a similar box will appear in columns W to AH



4



[4] The fourth box (columns AJ to AL) is only applicable where ‘Spend-data’ is chosen as the available data in column C. In the ‘Comment’ column, you may provide for what transport type this individual line spend is on (i.e., Truck, Air, Sea).

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15 bn packs of medicines/year
62 mio packs of medicines/day

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500+ pharmaceutical wholesalers

200,000 pharmacies& healthcare professionals acrossEurope

1,260 warehouses

35 Different products per delivery

18.8 Different manufacturers per delivery

2.5 h Average deliverytime

GIRP MEMBERS COUNT:

140,000 employees

Quality, integrity, excellence

GIRP members are trusted supply chain partners **the vital link in healthcare.**

GIRP

the vital link in healthcare

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