MDBiologics

CARBON FOOTPRINT

Report 2025

Info@mdbiologics.co.uk

Eco Sourcing Hub
REDUCE COSTS, EMISSIONS & RISKS

INTRODUCTION

MD Biologics UK serves as the UK-based commercial branch of MD Biologics Ireland, focusing on the distribution of specialty biologic therapies within the UK healthcare sector. Operating through a virtual office model, the UK entity manages commercial activities without physical premises or direct sales operations.

The company's primary product is a single-use, intraocular injection designed for ophthalmic applications.

ABOUT THIS REPORT

This report contains the carbon footprint of the organization MDBiologics Ltd for Year 1 Estimation for the reporting period Y-2025: 2025-01-01 to 2025-12-31.

The purpose of this report is to disseminate the estimated inventory of greenhouse gas (GHG) emissions with great attention to the accounting principles of relevance, accuracy, consistency, completeness and transparency.

This report is intended for all stakeholders interested in the GHG emissions inventory and the associated reporting structure and explanations.

This report:

- Has been prepared in accordance with the requirements of the Greenhouse Gas Protocol reporting standards (Corporate Accounting and Reporting Standard, 2004; Corporate Value Chain Accounting and Reporting Standard, 2011).
- Endeavours to use primary data wherever possible but especially surrounding all major emissions sources. Where primary data is not available, a consistent and conservative approach to calculation is applied.
- Excludes specific targets or forecasts as well as reports on GHG removals and offsets.

METHODOLOGY

This assessment of GHG emissions is compliant with the Greenhouse Gas Protocol, a globally recognized standard jointly developed by the World Resources Institute and the World Business Council for Sustainable Development. The Greenhouse Gas Protocol provides comprehensive, standardized frameworks for quantifying and managing GHG emissions across private and public sector operations, value chains, and mitigation efforts.

Five key accounting principles are central to the Greenhouse Gas Protocol methodology:

Relevance

Ensure that the GHG data collection accurately records and presents all relevant emissions from the organization.

Consistency

The calculations are based on uniform methods. Any changes in data sources, calculation boundaries, or emission factors are always reported.

Completeness

The calculation captures all emitted GHGs. If any emission sources are omitted, clear and detailed justifications are given.

Transparency

All collected data is clearly and coherently reported, preferably through an accurate audit scheme. All assumptions on methods, approximations and emission factors are well documented.

Accuracy

The quantification of GHG emissions is without systematic overestimation or underestimation, it is tried to reduce uncertainties as much as possible wherever possible.

Following the guidelines of the Greenhouse Gas Protocol, the emissions inventory encompasses seven primary (groups of) GHGs: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), nitrogen trifluoride (NF_3), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). All of these gases are considered in-scope. Additionally, emissions out-of-scope are also considered, this included other greenhouse gases which are not included in the Kyoto Protocol, but still have a well-established global warming effect.

The Greenhouse Gas Protocol classifies emissions into 3 scopes and 21 categories:

Scope 1

Direct GHG emissions originate from sources owned or controlled by the organization.

Scope 2

Indirect GHG emissions result from purchased electricity and other energy carriers.

Scope 3

Other indirect GHG emissions beyond those covered by Scope 2 that happen elsewhere in the value chain, both upstream and downstream.

These scopes are further subdivided into distinct activity categories. Scope 1 encompassed 4 categories, Scope 2 encompasses 2 categories, and Scope 3 emissions are split into 15 categories, across upstream and downstream. See Figure 1 for a visual summary of this classification across the value chain.

To assess the global warming impact of emissions, the GHGs are evaluated using the Global Warming Potential (GWP) over a 100-year timeframe. For more detailed information on the methodology.

In the subsequent sections, activity categories may be customized in terms of naming, order, and further subdivision to enhance transparency and comparability within the organization; in accordance with the Greenhouse Gas Protocol accounting principles. However, to ensure standardization and analysis across industries, each activity category remains directly linked to one of the standard Greenhouse Gas Protocol activity category types. Detailed descriptions of each activity category and their corresponding Greenhouse Gas Protocol references can be found in Section 4. A consolidated inventory within the standard reporting framework is at the end of the report .

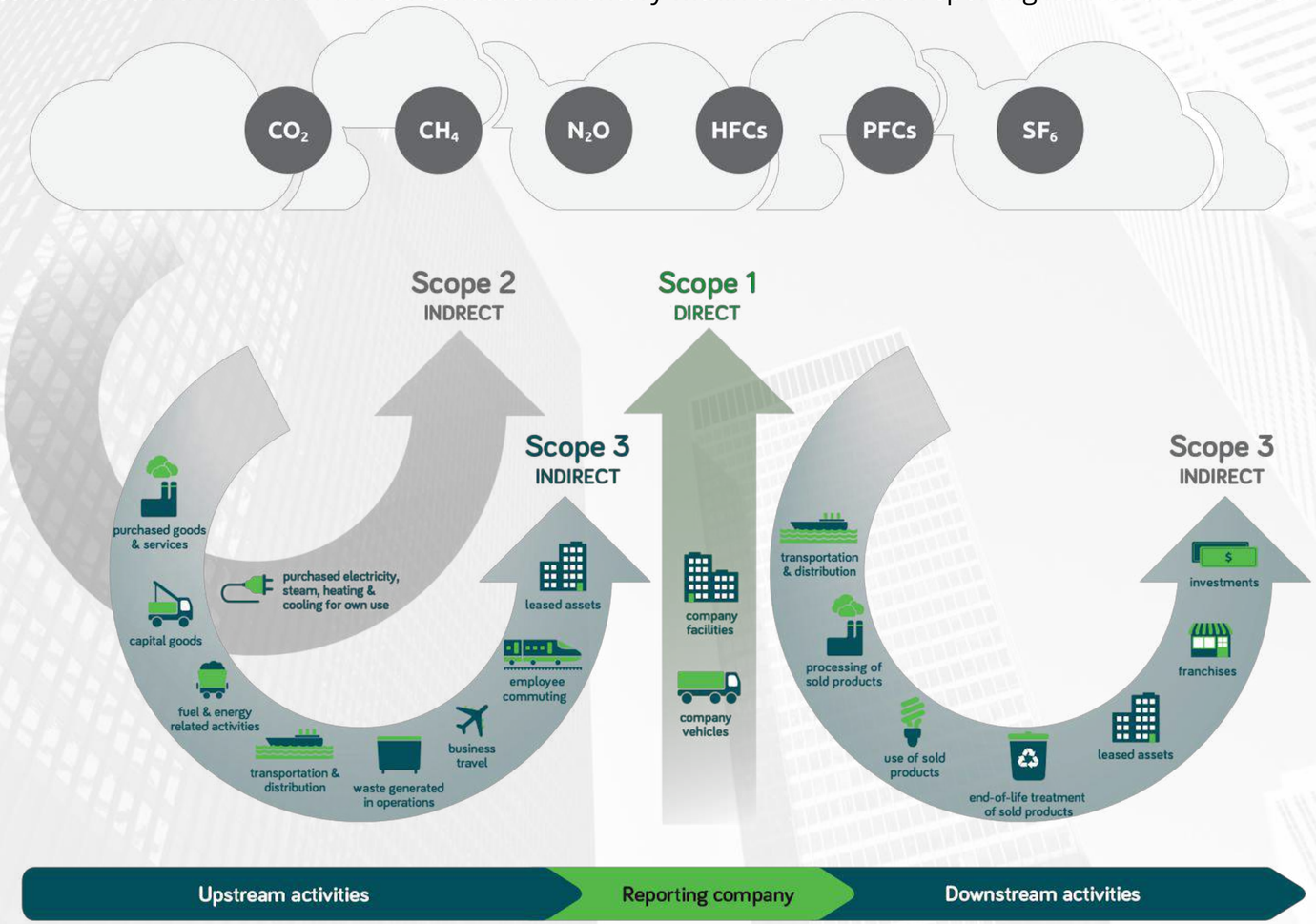


Figure 1: Overview of Greenhouse Gas Protocol scopes and activity categories across the value chain.
Adapted from the Greenhouse Gas Protocol Corporate Value Chain Accounting and Reporting Standard.

ORGANIZATIONAL BOUNDARIES

The organizational boundaries for this report were set using the operational control approach for consolidation.

Under this approach, the organization accounts for 100% of the GHG emissions from operations and the value chain over which it has operational control. Operational control applies when the organization or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation.

This consolidation approach applies to all units and subunits.

OPERATIONAL BOUNDARIES

Details on the description of the activity categories, as well as their rationale to include and their respective Greenhouse Gas Protocol references, can be found in the tables below.

Direct		
Mobile Combustion	Description	Emissions resulting from the combustion of fuels in company owned/controlled mobile combustion sources
	Rationale to Include	Directly related to the organization’s operations
	GHG Protocol Reference	1.2 Mobile combustion
Fugitive Emissions	Description	Emissions resulting from the leakage of refrigerants or the direct release of greenhouse gasses
	Rationale to Include	Important indicator for potential leaks or losses in the system
	GHG Protocol Reference	1.4 Fugitive emissions
Stationary Combustion	Description Rationale to Include	Emissions resulting from combustion of fuels in stationary sources Directly related to the organization’s operations
	GHG Protocol Reference	1.1 Stationary combustion

Electricity	Description	Emissions resulting from the generation of electricity, purchased by the company
	Rationale to Include	Major source of indirect emissions
	GHG Protocol Reference	2.1 Purchased electricity
Upstream		
Goods & Services	Description	Embedded emissions in purchased goods and services
	Rationale to Include	Important overview of major indirect emissions sources in the supply chain
	GHG Protocol Reference	3.1 Purchased goods and services
Energy Supply	Description	Embedded emissions in the purchase of fuels and energy in other activity categories
	Rationale to Include	Reflects important upstream emissions coupled with the organizations fuel and energy use
	GHG Protocol Reference	3.3 Fuel- and energy-related activities
Transport Upstream	Description	Emissions related to the transport of goods upstream of the production process or any transport purchased by the company
	Rationale to Include	Reflects the indirect carbon footprint of logistics in the value chain
	GHG Protocol Reference	3.4 Upstream transportation and distribution
Waste	Description	Emissions related to the disposal and processing of waste generated in operations
	Rationale to Include	Important indicator for impact of waste streams
	GHG Protocol Reference	3.5 Waste generated in operations
Business Travel	Description	Emissions related to transportation of employees for business-related activities
	Rationale to Include	Important for understanding and managing travel-related emissions
	GHG Protocol Reference	3.6 Business travel
Commuting	Description	Emissions related to commutes of employees in vehicles not under control of the company
	Rationale to Include	Important for understanding and managing employee commuting emissions
	GHG Protocol Reference	3.7 Employee commuting
Capital Goods	Description	Embedded emissions in capital goods like buildings, cars, ICT and machinery
	Rationale to Include	Important overview of major indirect emissions sources from long-term assets
	GHG Protocol Reference	3.2 Capital goods

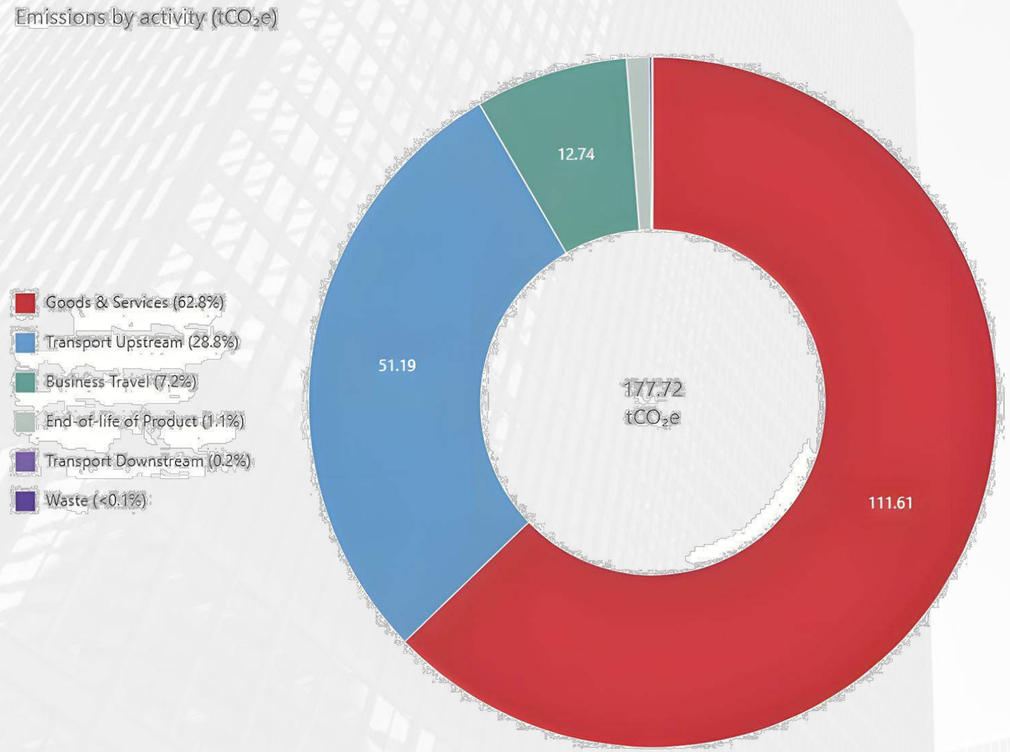
Downstream		
Transport Downstream	Description	Emissions related to the transport of goods downstream of the production process not paid for by the company
	Rationale to Include	Reflects the indirect carbon footprint of logistics happening downstream in the value chain
	GHG Protocol Reference	3.9 Downstream transportation and distribution
End-of-life of Product	Description	Emissions related to the disposal of the sold product at the end of its planned lifetime
	Rationale to Include	Important for understanding the full lifecycle impact of products
	GHG Protocol Reference	3.12 End-of-life treatment of sold products
Use of Product	Description	Emissions related to energy use of the product during its planned lifetime
	Rationale to Include	Important for understanding the full lifecycle impact of products
	GHG Protocol Reference	3.11 Use of sold products

In the tables below you can find details on the activity categories that were excluded from this report; the description of each of these, the rationale to exclude and their respective Greenhouse Gas Protocol references.

Excluded Activities		
Process Emissions	Description	Emissions resulting from the release of greenhouse gasses in production processes
	Rationale to Exclude	Emissions category not applicable
	GHG Protocol Reference	1.3 Process emissions
Steam, Heat, Cooling	Description	Emissions resulting from the generation of steam, heating or cooling, purchased by the company
	Rationale to Exclude	Emissions category not applicable
	GHG Protocol Reference	2.2 Purchased steam, heat, cooling
Leased Assets as Lessee	Description	Emissions related to the operation of assets leased by the reporting company
	Rationale to Exclude	Not relevant for in the applied consolidation approach
	GHG Protocol Reference	3.8 Upstream leased assets (as lessee)
Investments	Description	Emissions related to the operation of investments
	Rationale to Exclude	Emissions are estimated to be insignificant and available data is of poor quality
	GHG Protocol Reference	3.15 Investments
Processing of Product	Description	Emissions related to further processing of the sold product
	Rationale to Exclude	The organization’s influence on the emission source is too limited
	GHG Protocol Reference	3.10 Processing of sold products
Leased Assets as Lessor	Description	Emissions related to the operation of assets owned by the reporting company
	Rationale to Exclude	Emissions category not applicable
	GHG Protocol Reference	3.13 Downstream leased assets (as lessor)
Franchises	Description	Emissions related to the operation of franchises Emissions category not applicable
	Rationale to Exclude	
	GHG Protocol Reference	3.14 Franchises

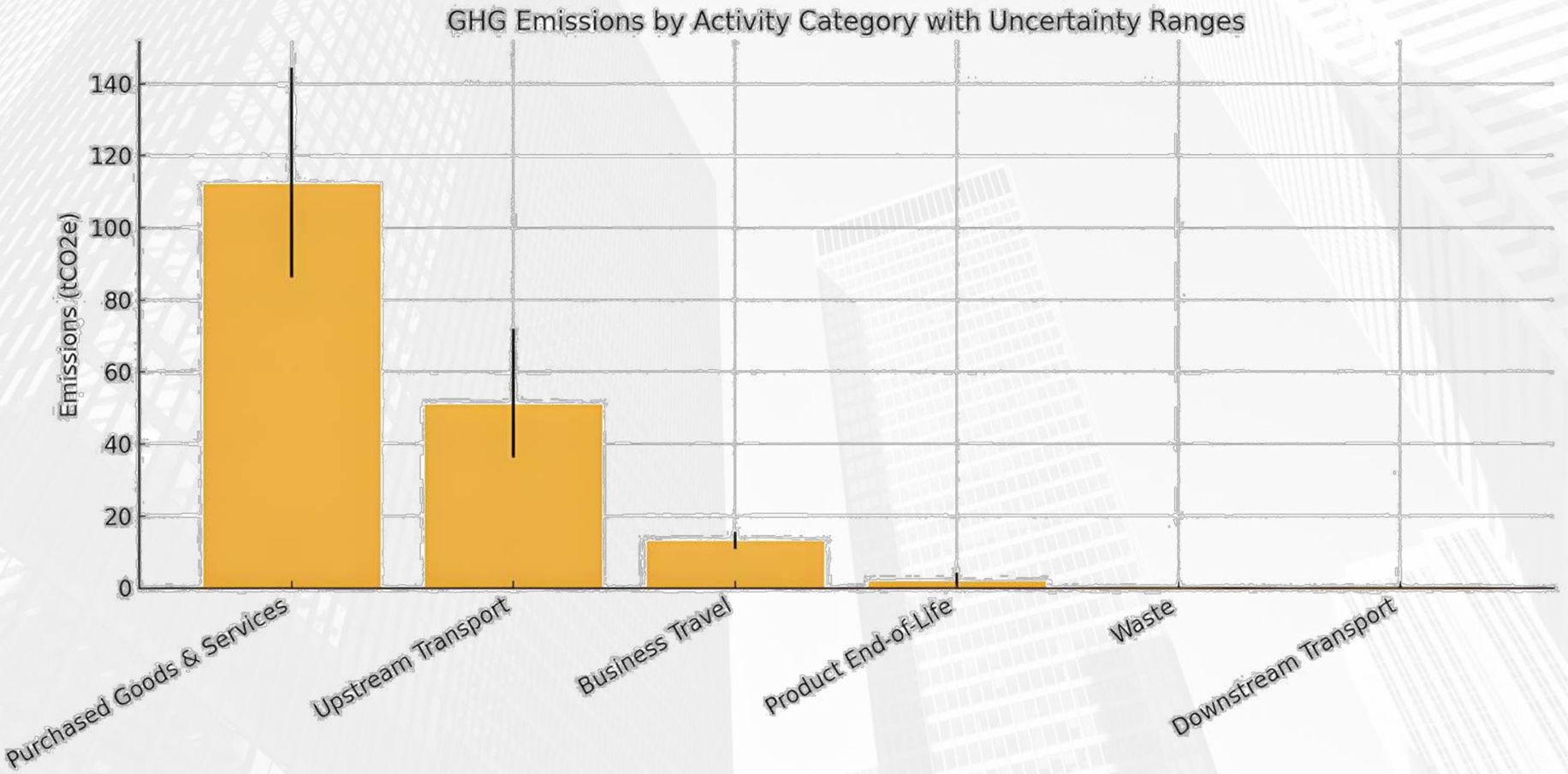
GHG
EMISSIONS INVENTORY

In the reporting period Y-2025 the total emissions for the reporting organization add up to 178 tCO2e. With a per-activity breakdown as follows:



Activity Category	Emissions	Certainty	Share of
	(tCO_2e)		Total Emissions
Direct	-	-	-
Mobile Combustion	-	-	-
Fugitive Emissions	-	-	-
Stationary Combustion	-	-	-
Electricity	-	-	-
Electricity	-	-	-
Upstream	176	–17% to +21%	99%
Goods & Services	112	–23% to +29%	63%
Energy Supply	-	-	-
Transport Upstream	51	–29% to +41%	29%
Waste	<1	–24% to +32%	<1%
Business Travel	13	–17% to +20%	7%
Commuting	-	-	-
Capital Goods	-	-	-
Downstream	2	–49% to +96%	1%
Transport Downstream	<1	–48% to +91%	<1%
End-of-life of Product	2	–53% to +115%	1%
Use of Product	-	-	-
Total GHG emissions	**178**	**–17% to +21%**	**100%**

GHG
EMISSIONS INVENTORY



METHODOLOGICAL DETAILS

The GHG emissions inventory reflects the consolidation of emissions data according to the Greenhouse Gas Protocol reporting standards. These being the Corporate Accounting and Reporting Standard (2004), the Corporate Value Chain Accounting and Reporting Standard (2011), and all associated guidance documents.

- GHG Classification Structure
- Global Warming Potential
- Additional Radiative Forcing Effects
- Approach to Emission Factors
- Uncertainty Assessment

CLICK ON TITLE

GHG Classification Structure

In Section 5, the reported GHG emissions are organised and aggregated into their respective activity categories and activity category groups. Each activity category is associated with a Greenhouse Gas Protocol category (1.1 to 3.15).

You can find a consolidation of all emissions into the strict Greenhouse Gas Protocol structure at the end of the report. This table shows a breakdown by greenhouse gas of all non-biogenic emissions.

Carbon offsets (removals or avoided emissions) are not reported in this report nor have they been subtracted from the total.

Global Warming Potential

The following GHGs are included in the analysis: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulphur hexafluoride (SF6), nitrogen trifluoride (NF3), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).

Emissions from these GHGs are expressed in CO2-equivalent (CO2e) based on their global warming potential over a time horizon of 100 years (GWP100). The Global Warming Potential values are based on the Intergovernmental Panel on Climate Change (IPCC) Fourth, Fifth or Sixth Assessment Report (AR4, AR5 or AR6), in accordance with the methodological choices of the emission factor publishers used in this report.

Additional Radiative Forcing Effects

The emission factors for aviation were extended to include the additional effects of radiative forcing through the emission of gases and aerosols and changing cloud abundance. For this a central estimate for a multiplier to the GWP100 figure is used. This estimate tries to reflect the additional effect based on the best available scientific evidence, while being consistent with UNFCCC reporting convention.

Approach to Emission Factors

For each activity the most relevant and localised emission factor possible has been selected, at the discretion of the reporter. The key considerations in emission factor selection were locality and relevancy, as well as the availability of emission factors and consistency of methodologies throughout each emission factor source.

A full list of emission factor publications used in this report can be found in the table below:

Publisher	Publication Version	Publication Date	URL Usage
UK.gov GHG Reporting Factors	v2024 1.1	2024-10-30	link 60.0%
Exiobase	3.8.2	2021-10-21	link 40.0%

Each emission factor used in the calculation has an assigned validity period overlapping or partially overlapping with the application period of the reported activity. The validity period of emission factors is determined by its publication document[1].

[1] In case the application period of the activity overlaps with the validity period of more than one emission factor, the median data of the application period is used to determine which factor to use (e.g. if an activity stretches from August 2021 to July 2022, the median date is 29/01/2022)

Uncertainty Assessment

To assess the uncertainty involved with the emissions calculations in this report, we applied the Greenhouse Gas Protocol's Quantitative Uncertainty Guidance to the inventory data. Using a system with discrete levels of uncertainty, a point estimate for each data point was obtained, which then was propagated across the entire inventory to result in a general quantified uncertainty estimation.

The first step in this process is separating the activity data uncertainty from the emission factor uncertainty. Activity data uncertainty (or volume uncertainty) reflects the reliability, completeness, and temporal, geographical and technical representativeness of the numerical value used into the emissions calculation (e.g. the uncertainty on "1000 kg of product A"). The emission factor uncertainty on the other hand, reflects the reliability, completeness and representativeness of the numerical value of the estimated emission intensity (e.g. the uncertainty on "500 kgCO2e per kg of product A").

For both the activity data uncertainty and the emission factor uncertainty, a single parameter uncertainty value is derived. This single parameter reflects the incomplete knowledge of the exact value in a probability distribution, based on qualitative assessments of how the evaluated parameter scores on the aforementioned dimensions (e.g. reliability). The numerical link between the qualitative assessment (very good, good, fair, poor) and the probability distribution is given by a pedigree matrix, provided by the Greenhouse Gas Protocol in the Quantitative Uncertainty Guidance (link).

Once the single parameter uncertainty of both activity data and emission factor is established for each entry, this uncertainty is propagated across all entries in the inventory. With this, we can obtain an estimate for the full uncertainty across all measurements. This propagation happens through Taylor series expansion under lognormal distribution assumptions (conform Greenhouse Gas Protocol guidance). It is likely that this leads to a conservative estimate, in other words the total uncertainty is likely an overestimation or an upper-bound of the real uncertainty.

Finally, this propagated uncertainty is aggregated; first on activity category level, and eventually for the total emissions across the entire inventory. The uncertainty is expressed as a 95% confidence interval of the actual value, assuming a lognormal distribution. The "-29% to +40%" uncertainty estimation for a value of 1000 tCO2e therefore indicates that with 95% certainty, the real value for this number lies between 710 tCO2e (1000 tCO2e -29%) and 1400 tCO2e (1000 tCO2e +40%).

KEY TAKEAWAYS ON UNCERTAINTY

1.Total Emissions:

- 178 tCO_2e
- Overall uncertainty range: –17% to +21%
- This means actual emissions could range from 147.7 tCO_2e to 215.4 tCO_2e

The major uncertainty drivers are:

- Purchased goods & services – due to lack of supplier-specific data.
- Transport emissions – variability in distance, mode, and control.
- End-of-life treatment – often estimated with industry av

Activity	Emissions (tCO_2e)	Uncertainty Range	% of Total
Purchased Goods & Services	112	–23% to +29%	63%
Upstream Transport	51	–29% to +41%	29%
Business Travel	13	–17% to +20%	7%
Product End-of-Life	2	–53% to +115%	1%
Waste	<1	–24% to +32%	Negligible contribution (<1%)
Downstream Transport	<1	–48% to +91%	Very small share (<1%)
Product End-of-Life	2	–53% to +115%	Highest relative uncertainty

Greenhouse gas emissions data										
According to the GHG Protocol										
Emission category		All GHG (tCO_2e)	CO_2 (tCO_2e)	CH_4 (tCO_2e)	N_2O (tCO_2e)	SF_6 (tCO_2e)	NF_3 (tCO_2e)	HFCs (tCO_2e)	PFCs (tCO_2e)	CO_2e* (tCO_2e)
1	Scope 1 - Direct Emissions from operations	Remote company without a physical office								
2	Scope 2 - Indirect emissions from the electricity	Remote company without a physical office								
3	Scope 3 - Indirect emission in the value chain Upstream	175.58	129.37	20.34	1.98	0.48		2.20	0.17	21.03
3.1	Purchased goods and services	111.61	65.77	20.34	1.65	0.48		2.20	0.17	20.99
3.2	Capital goods									
3.3	Fuel- and energy-related activities									
3.4	Upstream transportation and distribution	51.19	50.92	0.00	0.26					
3.5	Waste generated in operations	0.04								0.04
3.6	Business travel	12.74	12.67	0.00	0.07					
3.7	Employee commuting									
3.8	Upstream leased assets (as lessee)									
	Downstream	2.14	0.26	0.00	0.00					1.87
3.9	Downstream transportation and distribution	0.27	0.26	0.00	0.00					
3.10	Processing of sold products									
3.11	Use of sold products									
3.12	End-of-life treatment of sold products	1.87								1.87
3.13	Downstream leased assets (as lessor)									
3.14	Franchises									
3.15	Investments									
Total GHG emissions		177.72	129.63	20.34	1.98	0.48		2.20	0.17	22.90

CONTACT US

MDBiologics Ltd
71-75 Shelton Street
Covent Garden
London
WC2H 9JQ

Info@mdbiologics.co.uk