GHG Report IGB srl

2025



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1. INTRODUCTION

1.1 Purpose and Objectives of the Report

In the current context, where the ecological transition represents a priority challenge for all economic sectors, measuring one's environmental footprint constitutes a strategic lever to improve processes, strengthen corporate credibility, and generate long-term value.

With this commitment in mind, **I.G.B. S.r.l.** presents its organizational Carbon Footprint, developed to offer a clear, transparent, and scientifically sound view of the climate impact associated with its operational activities and its value chain. The decision to undertake this reporting stems from the company's commitment to gaining an in-depth understanding of its emission profile, identifying the main sources of impact, and defining strategies for mitigation, efficiency, and sustainable evolution. This process is part of a broader and progressive commitment to decarbonization, aimed at integrating emission reduction into the organizational culture, decision-making processes, and daily management.

Consistent with this orientation, **I.G.B. S.r.l.** has initiated the validation process of its **emission reduction targets** with the **Science Based Targets initiative (SBTi)**. The company is currently in the commitment phase, through which it has committed to setting near-term, company-wide emission reduction targets within the SBTi framework, in line with climate science principles.

This document therefore represents a fundamental step in this journey: it provides a reliable emission baseline, useful for guiding subsequent reduction actions and supporting the definition of targets consistent with international best practices. Through this report, **I.G.B. S.r.l.** intends to share with internal and external stakeholders not only the results of its emission analysis, but also the vision of a company that looks to the future with awareness, responsibility, and commitment toward a sustainable and resilient development model.

1.2 Context and importance of GHG management

In an economic context characterized by rapid transformations, increasing regulatory scrutiny, and growing expectations from stakeholders, the management of greenhouse gas (GHG) emissions assumes a strategic role for all businesses, regardless of their sector.

Climate change, recognized as one of the main global challenges, makes it imperative for organizations to adopt emission measurement and reduction policies. GHG reporting constitutes an opportunity to improve operational efficiency, mitigate risks, and strengthen corporate credibility in the market.

The adoption of a data-driven approach allows for the precise identification of the main emission sources, the planning of targeted interventions, and the definition of mitigation strategies in line with ESG priorities and global warming mitigation goals. This pathway contributes not only to limiting climate impact, but also to consolidating the trust of clients, investors, local communities, and regulatory authorities.

In this scenario, the proactive management of GHG emissions becomes a distinctive feature of competitiveness and resilience, capable of strengthening the company's positioning and aligning it with the sustainability standards required globally today.

1.3 General Methodological Framework

The determination of the Carbon Footprint is carried out in accordance with the methodology defined by the international GHG Protocol standard, which provides guidelines for the quantification and reporting of greenhouse gas (GHG) emissions and removals at the organizational level.

This universally recognized standard enables a systematic and transparent approach to emission management and reduction, ensuring an emission inventory that is representative of actual corporate emissions.

The GHG Protocol Initiative is a multi-stakeholder partnership of businesses, non-governmental organizations (NGOs), governments, and others, convened by the World Resources Institute (WRI), a US-based environmental NGO, and the World Business Council for Sustainable Development (WBCSD), a coalition of 170 international companies based in Geneva.

Launched in 1998, the Initiative's mission is to develop internationally accepted greenhouse gas (GHG) accounting and reporting standards for businesses and to promote their broad adoption.



2. GHG ACCOUNTING AND REPORTING PRINCIPLES

GHG accounting and reporting must be based on principles that ensure the reported information represents a faithful, true, and fair account of a company's GHG emissions. These principles are derived in part from generally accepted financial accounting and reporting principles and are the result of a collaborative process involving stakeholders from various disciplines. Their primary function is to guide the implementation of the GHG Protocol "Corporate Accounting and Reporting Standard".

The principles are:

- **Relevance:** ensure the GHG inventory appropriately reflects the GHG emissions of the company and serves the decision-making needs of users, both internal and external to the company. An important aspect of relevance is the selection of an appropriate inventory boundary that reflects the substance and economic reality of the company's business relationships, not just its legal form. The choice of the inventory boundary depends on the company's characteristics, the intended use of the information, and user needs, considering factors such as organizational structures (control, ownership, joint ventures), operational boundaries (on-site and off-site activities), and the business context.

- **Completeness:** account for and report all GHG emission sources and activities within the chosen inventory boundary. The objective is to compile a complete and meaningful inventory. Any specific exclusion must be disclosed and justified. It is not compatible with the completeness principle to define a minimum threshold for emission accounting (often referred to as a "materiality threshold") that allows a source below a certain size to be omitted. Companies must make a good-faith effort to provide a complete, accurate, and consistent accounting. If emissions have not been estimated or have been estimated at an insufficient quality level, this must be documented and justified transparently.

- **Consistency:** use consistent methodologies to allow for meaningful comparisons of emissions over time. Any changes to the data, inventory boundary, methods, or any other relevant factors in the time series must be transparently documented. This is essential to produce GHG emission data that are comparable over time and to ensure that aggregate information is internally consistent.

- **Transparency:** address all relevant issues in a factual and coherent manner, based on a clear audit trail. Relevant assumptions must be disclosed, and appropriate references to accounting and calculation methodologies and data sources used must be provided. The information must be sufficient to allow a third party to obtain the same results if provided with the same source data. An independent external verification can help ensure transparency.

- **Accuracy:** ensure that the quantification of GHG emissions is systematically neither over nor under actual emissions, as far as can be judged, and that uncertainties are reduced as far as practicable. Accuracy must be sufficient to enable users to make decisions with reasonable assurance as to the integrity of the reported information. The quantification process should minimize uncertainty.

3. DEFINITION OF INVENTORY BOUNDARIES

3.1 Definition of organizational boundaries

The first phase of the Carbon Footprint analysis process involves identifying the organizational boundaries, which means defining the activities, sites, and operational units included within the reporting perimeter.

The main methodologies for establishing these boundaries are:

- **Control approach:** the organization accounts for 100% of the emissions from operations over which it exercises control, which can be operational or financial.
    - **Operational Control:** an organization has operational control if it or one of its subsidiaries has the full authority to introduce and implement its operational policies in an operation.
    - **Financial Control:** the organization has financial control if it can direct the financial and operational policies of an operation to obtain economic benefits.
- **Equity share approach:** a company accounts for greenhouse gas emissions from operations based on its percentage of ownership or economic interest in those operations.

For greenhouse gas (GHG) emissions reporting, **I.G.B. S.r.l.** has adopted the Operational Control Approach in accordance with the provisions of the **GHG Protocol – Corporate Standard**.

Company Name	VAT Number
I.G.B srl	02921590960

Organizational Boundaries Table

IGB USA Corp. has been excluded from the reporting perimeter because, although it is subject to financial control by IGB S.r.l., it does not fall under the company's operational control. Indeed, the organizational boundary of the GHG inventory has been defined according to the operational control approach, including the activities over which IGB S.r.l. directly exercises the capacity to define and implement management, operational, and environmental policies.

The choice to adopt this approach is consistent with the nature of the Group's activities and the role played by IGB USA Corp., which operates exclusively as a commercial branch in the United States, without carrying out production, industrial, or processing activities. In light of the absence of manufacturing processes and considering the limited operational profile of the company, its relative emissions were considered immaterial compared to the overall emission profile of IGB S.r.l.

3.2 Definition of Operational Boundaries

Emission sources are categorized according to the following "Scopes" provided by the GHG Protocol:

- **Scope 1 - Direct Emissions:** emissions generated from sources directly owned or controlled by the company (stationary and mobile combustion, fugitive emissions). Scope 1 can include stationary combustion (e.g., boilers, production processes), mobile combustion (e.g., company vehicles), emissions generated from industrial processes, and leakage of refrigerant gases (e.g., from air conditioning systems).

- **Scope 2 - Energy Indirect Emissions:** emissions generated from the generation of purchased electricity, heat, or cooling consumed by the organization.

- **Scope 3 - Other Indirect Emissions:** an optional category that includes emissions resulting from activities correlated with but not directly controlled by the company (e.g., waste generated in operations, water resource management, employee commuting).

The following emission categories fall within the **operational boundaries**:

- **Direct emissions (Scope 1):** Scope 1 emissions include all direct greenhouse gas emissions from sources owned or controlled by I.G.B srl, in accordance with the GHG Protocol. This category includes:

    - emissions resulting from mobile combustion of fuel used for the company's own fleet;

- **Indirect emissions from purchased energy (Scope 2):** These include emissions associated with the consumption of energy purchased from third parties. This category includes:

    - **purchase of electricity**, reporting is carried out according to both approaches provided by the GHG Protocol:

        - **location-based**, based on the national average energy mix;

        - **market-based**, based on the Italian "residual mix" emission factor;

- **Other indirect emissions (Scope 3):**

    - purchased goods and services;

    - capital goods;

    - indirect emissions related to the life cycle of fuels and energy;

    - upstream transportation and distribution;

    - waste generated in operations;

    - business travel;

- employee commuting;
- downstream transportation and distribution;
- end-of-life treatment.

3.3 Reporting Period and Base Year

The reference period for the GHG emissions of **I.G.B. srl** is 01/01/2025 - 31/12/2025. The year 2025 has been identified as the base year to assess the evolution of environmental performance.



4. COMPANY PROFILE

IGB was founded in the 1960s by Dino Bressan and a colleague. The company was originally named Grafica Viggiù and operated in graphics and traditional typography. In the 1980s, Bressan acquired the share of the co-founding partner and changed the company's name to the current one. IGB focused on the design of boxes and cartons for consumer product packaging; this trend continued in the following years and led IGB to dedicate itself solely to pharmaceutical and cosmetic packaging. In the 1990s, the company integrated all processes related to the graphics supply chain (design, pre-press, printing, and paper conversion) for the production of pharmaceutical packaging, leveraging the best available technologies. Since the late 1990s, with the entry of the second family generation into management, IGB has continued to update its technology and has expanded its human resources, while also improving research and development. To date, IGB has filed numerous patents, including tamper-evident cartons and child-resistant folding boxes, and maintains numerous partnerships with pharmaceutical companies.

4.1 Mission

We work alongside businesses to increase their value, helping them address occupational safety and environmental balance in a simple and organized manner. Furthermore, we do this in total safety for your Company.

4.2 Vision

We want to become the reference model for consulting services to Italian businesses, integrating the effectiveness of solutions with an attitude open to discussion.

5. METHODOLOGY FOR CALCULATING EMISSIONS

5.1 Identification of Emissions Sources

The categories selected for the emission calculation for the year 2025 are the following:

Categories	Emission Typology	Emission Sources	Data Source
Scope 1: Direct Emissions	Direct emissions from mobile combustion	Company fleet	Company vehicle database, fuel invoices, travel reports
Scope 2: Indirect Emissions from imported energy	Indirect emissions from the purchase of electricity	Electricity consumption	Energy supplier invoices, energy monitoring systems
Scope 3: Indirect emissions from purchased goods and services	Emissions from the production of goods and services purchased by the company	Purchases of materials, products, services, consulting, and operational supplies	Supplier accounting, purchase invoices, purchase registers, goods/services classification
Scope 3: Indirect emissions from capital goods	Embedded emissions in capital goods purchased by the company	Machinery, equipment, plants, hardware, furniture, and other durable goods	Fixed asset register, purchase invoices, orders, economic value of goods
Scope 3: Indirect emissions from fuel- and energy-related activities	Emissions connected to the life cycle of purchased fuels and energy, excluding emissions already included in Scope 1 and Scope 2	Production, extraction, transportation, and distribution of consumed fuels and energy	Energy invoices, fuel consumption, Scope 1 and Scope 2 data
Scope 3: Indirect emissions from upstream transportation	Emissions from upstream transportation and distribution	Upstream transportation related to paper and cardboard and other purchase categories	Freight invoices, logistics expenses, supplier accounting
Scope 3: Indirect emissions from waste generated in operations	Emissions from the treatment and management of waste produced by the company	Waste produced at operational sites	Waste forms, MUD, loading/unloading logs, environmental managers' data, treatment methods
Scope 3: Indirect emissions from business travel	Emissions generated by personnel business travel	Business travel by car, train, plane, taxi, and any overnight stays included in the calculation perimeter	Expense reports, business travel reports, travel bookings, receipts, mileage data, and transport modes used
Scope 3: Indirect emissions from employee commuting	Emissions from employee commuting between home and work	Daily commuting of employees by car, motorcycle, public transit, or other transport modes	Employee surveys, days of attendance, home-work round-trip distance, transport mode used, fuel
Scope 3: Indirect emissions from downstream transportation	Emissions from downstream transportation and distribution	Transportation of products or materials to clients, final recipients, or subsequent destinations	Logistics data, transport documents, carrier invoices, transported quantities, distances, and transport modes
Scope 3: Indirect emissions from end-of-life treatment of sold products	Emissions associated with the treatment of sold products at the end of their life cycle	Disposal, recovery, recycling, or treatment of products at end-of-life	Data on sold products, material composition, end-of-life scenarios

Table: Emission categories selected for the Carbon Footprint analysis

5.2 Calculation Methods

The estimation of greenhouse gas (GHG) emissions for **I.G.B srl** was carried out following an internationally consolidated approach, based on the application of documented **emission factors** to the collected **activity data**.

This methodology, recommended by the **GHG Protocol** and the **IPCC Guidelines**, is particularly suitable in operational contexts where direct monitoring of emissions is not technically or economically feasible.

Emissions are calculated according to the **formula**:

GHG Emissions (tCO_2eq)= Activity Data x Emission Factor

Activity data represent the quantitative measurement of corporate activities responsible for emissions, such as, for example:

- fuel consumption (liters, kg),
- energy consumption (kWh),
- annual expenditure for purchased goods and services (€),
- annual expenditure for capital goods (€),
- energy and fuel consumption for energy-related activities,
- quantities of paper and cardboard handled (kg, t),
- annual expenditure for upstream logistics (€),
- quantity of waste produced (kg, t),
- business travel and trips,
- overnight stays,
- employees' commute distance (in km),
- days spent at the office,
- mode of transport used by employees,
- annual expenditure for downstream logistics (€),
- quantity of products sold or treated at end-of-life (kg, t).

5.2.1 Emission Factors

Emission factors express the quantity of greenhouse gases released per unit of activity. To ensure accuracy and representativeness, national or regional specific factors from official sources have been used where available:

- **DEFRA** (UK Department for Environment, Food & Rural Affairs) for the estimation of **Scope 1 emissions** and some categories of **Scope 3**

Mobile combustion (consumption of the company fleet and consumption related to business travel) based on kilometers traveled:

Vehicle Type	Fuel Type	Emission factors (kg GHG / km traveled)				Source of emission factors
		kg CO_{2eq}	kg CO_2	kg CH_4	kg N_2O	
Medium car	Diesel	0,1717	0,1701	0	0,0017	Defra 2025_ghg conversion factor v1,0_Passenger vehicles_Cars (by size)
Large car	Petrol Hybrid	0,1565	0,1551	0,0001	0,0013	Defra 2025_ghg conversion factor v1,0_Passenger vehicles_Cars (by size)
Medium car	Petrol	0,1747	0,1741	0,0004	0,0003	Defra 2025_ghg conversion factor v1,0_Passenger vehicles_Cars (by size)
Small car	Petrol	0,14308	0,1424	0,00036	0,00032	Defra 2025_ghg conversion factor v1,0_Passenger vehicles_Cars (by size)
Large car	Electric	0	0	0	0	Defra 2025_ghg conversion factor v1,0_Passenger vehicles_Cars (by size)
Vans	Diesel	0,1574	0,1557	0	0,0017	Defra 2025_ghg conversion factor v1,0_Delivery vehicles_Vans (by type)
Airplane		0,14253	0,14166	0,00001	0,00086	Defra 2025 Business travel- air_ International, to/from non-UK_ Average passenger

Table: Emission factors used for the calculation of Scope 1 emissions from mobile combustion and Scope 3 from business travel based on kilometers traveled. Source: DEFRA 2025

Employee commuting:

Vehicle Type	Fuel Type	Emission factors (kgGHG / km traveled)					Source of emission factors
		kg CO_{2eq}	kg CO_2	kg CH_4	kg N_2O	WTT - kg CO2eq	
Car	Petrol	0,1627	0,1620	0,00036	0,00032	0,05	Defra 2025 _ghg conversion factor v1,0_Passenger vehicles_Cars (by size)_Average car WTT - passenger vehicles
Car	Diesel	0,17304	0,17136	0,000005	0,00167	0,04	Defra 2025 _ghg conversion factor v1,0_Passenger vehicles_Cars (by size)_Average car WTT - passenger vehicles
Car	LPG	0,19599	0,19557	0,00006	0,00036	0,02	Defra 2025 _ghg conversion factor v1,0_Passenger vehicles_Cars (by size)_Average car

							WTT - passenger vehicles
Car	Hybrid	0,12825	0,12708	0,00019	0,00098	0,03	Defra 2025 _ghg conversion factor v1,0_Passenger vehicles_Cars (by size)_Average car WTT - passenger vehicles
Car	CNG	0,17414	0,17201	0,00177	0,00036	0,04	Defra 2025 _ghg conversion factor v1,0_Passenger vehicles_Cars (by size)_Average car WTT - passenger vehicles
Car	Electric	0	0	0	0	0,01	Defra 2025 _ghg conversion factor v1,0_Passenger vehicles_Cars (by size)_Average car WTT - passenger vehicles
Bus		0,10385	0,10311	0,00001	0,00073	0,03	Defra 2025 _ghg conversion factor v1,0_"Bus"_"Average local bus" WTT - bus
Motorbike	Petrol	0,11367	0,11138	0,00177	0,00052	0,03	Defra 2025 _ghg conversion factor v1,0_"Passenger vehicles"_"Motorbike"_"Average" WTT - motorbike

Table: Emission factors used for the calculation of Scope 3 emissions related to employee commuting. Source: DEFRA 2025

Smart-working:

Activity	**E.F. kg CO_2e per hour**	**Source of emission factor**
Homeworking	0,33378	Defra 2025 _ghg conversion factor v1,0_" Homeworking"_" Homeworking (office equipment + heating)

Table: Emission factors used for the calculation of Scope 3 emissions related to smart working. Source: DEFRA 2025

Business travel – overnight stay and additional services:

Business travel	**Emission factor (kgCO2eq/€)**	**Source of emission factors**
Overnight stay	14,3	Defra 2025 Hotel stay (room per night)
Food and beverage serving services	0,396	Defra22_results_UK_Food and beverage serving services
Accommodation services	0,223	Defra22_results_UK_Accommodation services

Table: *Emission factors used for the calculation of Scope 3 emissions related to overnight stays during business travel. Source: DEFRA 2022 and 2025*

Purchase of goods other than paper and cardboard:

Product category	Source of emission factor
Purchased goods and services other than paper and cardboard	Defra22_results_UK - SIC_multipliers_2022

Table: *Source of emission factors used for the calculation of Scope 3 emissions related to the purchase of goods other than paper and cardboard. Source: DEFRA 2022*

Purchased services:

Category	Source of emission factor
Purchased services	Defra22_results_UK - SIC_multipliers_2022

Table: *Source of emission factors used for the calculation of Scope 3 emissions related to the purchase of services. Source: DEFRA 2022*

Fuel-related activities WTT:

Fuels/Energy	Emission factor (kgCO2eq/liters)	Source of emission factors
Diesel	0,61101	Defra 2025 _ghg conversion factor v1,0_WTT - Fuel_Diesel (average biofuel blend)
Petrol	0,58094	Defra 2025 _ghg conversion factor v1,0_WTT - Fuel_Petrol (average biofuel blend)

Fuels/Energy	Emission factor (kgCO2eq/kWh)	Source of emission factors
Electricity WTT – electricity (generation)	0,0459	Defra 2025 _ghg conversion factor v1,0_WTT - UK electricity
Electricity WTT – electricity (T&D)	0,00397	Defra 2025 _ghg conversion factor v1,0_WTT - UK electricity

Fuels/Energy	Emission factor (kgCO2eq/tonne-km)	Source of emission factors
Road transport - HGV	0,02359	Defra 2025 _ghg conversion factor v1,0_WTT - Delivery vehs & freight
Maritime transport - Ship	0,003	Defra 2025 _ghg conversion factor v1,0_WTT - Cargo ship
Air transport	0,13516	Defra 2025 _ghg conversion factor v1,0_WTT - Air freight

Table: Emission factors used for the calculation of Scope 3 emissions related to WTT fuel activities. Source: DEFRA 2025

Fuel-related activities T&D:

Fuels/Energy	Emission factor (kgCO2eq)	Source of emission factors
Diesel	0,61101	Defra 2025 _ghg conversion factor v1,0_T&D - Fuel_Diesel (average biofuel blend)
Petrol	0,58094	Defra 2025 _ghg conversion factor v1,0_T&D -

		Fuel_Petrol (average biofuel blend)
Electric car	0,00352	Defra 2025 _ghg conversion factor v1,0_UK electricity T&D for EVs
Electricity	0,01853	Defra 2025 _ghg conversion factor v1,0_UK electricity T&D

Table: Emission factors used for the calculation of Scope 3 emissions related to T&D fuel activities. Source: DEFRA 2025

Capital goods:

Capital good	E.F. kg CO2eq/€	Source of emission factor
Technical plants (e.g., electrical systems)	0,701	Defra22_results_UK - SIC_multipliers_2022
Machinery and production plants	0,788	Defra22_results_UK - SIC_multipliers_2022
Industrial equipment	0,944	Defra22_results_UK - SIC_multipliers_2022
IT equipment and servers	0,689	Defra22_results_UK - SIC_multipliers_2022
Furniture and furnishings	0,701	Defra22_results_UK - SIC_multipliers_2022
Other capital goods	0,955	Defra22_results_UK - SIC_multipliers_2022

Table: Emission factors used for the calculation of Scope 3 emissions related to the purchase of capital goods. Source: DEFRA 2022.

Upstream transport spend-based:

Transport mode	E.F. kg CO2eq/€	Source of emission factor
Truck	0,863	Defra22_results_UK - SIC_multipliers_2022

Table: Emission factors used for the calculation of Scope 3 emissions related to upstream transportation (spend-based). Source: DEFRA 2022.

- **ECOINVENT:** for the estimation of emissions for the remaining **Scope 3** categories

Emissions from waste generated in operations:

CER Code	Type of recovery or disposal	Waste category	Source of emission factors
15 01 01	Recovery R13	Paper and cardboard packaging	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
15 01 03	Recovery R13	Wooden packaging	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
08 01 20	Disposal D15	Aqueous suspensions (paints/varnishes)	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).

15 01 02	Recovery R13	Plastic packaging	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
17 04 02	Recovery R13	Aluminium	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
09 01 02	Recovery R13	Developer solutions (offset plates)	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
15 01 10	Recovery R13	Packaging containing residues of or contaminated by hazardous substances	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
08 04 16	Recovery R13	Aqueous liquid waste containing adhesives	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
15 02 02	Recovery R13	Absorbents, filter materials, wiping cloths and protective clothing contaminated by hazardous substances	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
08 03 12	Recovery R13	Waste ink containing hazardous substances	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
08 03 08	Recovery R13	Aqueous liquid waste containing ink	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
15 01 06	Recovery R13	Mixed packaging	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
13 02 05	Recovery R13	Mineral-based non-chlorinated engine, gear and lubricating oils	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
20 03 07	Recovery R13	Bulky waste	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
08 03 18	Recovery R13	Waste printing toner containing hazardous substances	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
08 01 11	Disposal D15	Waste paint and varnish containing organic solvents or other hazardous substances	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
15 01 01	Recovery R13	Paper and cardboard packaging	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
15 01 03	Recovery R13	Wooden packaging	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
08 01 20	Disposal D15	Aqueous suspensions containing paint or varnish	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
15 01 02	Recovery R13	Plastic packaging	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
15 01 10	Recovery R13	Packaging containing residues of or contaminated by hazardous substances	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
17 04 02	Recovery R13	Aluminium	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
08 01 11	Disposal D15	Waste paint and varnish containing organic solvents or other hazardous substances	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
15 01 06	Recovery R13	Mixed packaging	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
15 02 02	Recovery R13	Absorbents, filter materials, wiping cloths and protective clothing contaminated by hazardous substances	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).
08 03 12	Disposal D15	Waste ink containing hazardous substances	Ecoinvent database v3.12 – Allocation model: Recycling at start of cycle (Cut-off).

Table: Emission factors used for the calculation of Scope 3 emissions related to waste generated in operations. Source: Ecoinvent v3.12

Emissions from purchase of paper and cardboard:

Product category	Source of emission factor
Paper and Cardboard	Ecoinvent database v3.12 - paper production,woodfree,coated, at integrated mill
	Ecoinvent database v3.12 - folding boxboard carton production
	Ecoinvent database v3.12 - graphic paper production, 100% recycled
	Ecoinvent database v3.12 - paper production, wood-containing, supercalendered
	Ecoinvent database v3.12 - paper production, woodfree, uncoated, at non-integrated mill
	Ecoinvent database v3.12 - tissue paper production, virgin

Table: Emission factors used for the calculation of Scope 3 emissions related to purchased paper and cardboard. Source: Ecoinvent v3.12

Emissions from upstream transportation of paper and cardboard:

Transport Mode	Source of emission factor
Lorry 3.5 -7.6 t	Ecoinvent 3.11 IPCC 2021 GWP 100a Method
Cargo ship	Ecoinvent 3.11 IPCC 2021 GWP 100a Method

Table: Emission factors used for the calculation of Scope 3 emissions related to upstream transportation of paper and cardboard. Source: Ecoinvent v3.11

Emissions from downstream transportation:

Transport mode	Source of emission factor
Truck	Ecoinvent 3.11 IPCC 2021 GWP 100a Method

Table: Emission factors used for the calculation of Scope 3 emissions related to downstream transportation. Source: Ecoinvent v3.11

End-of-life treatment:

Prevalent material	End-of-life scenario	Source of emission factor
Paper and cardboard	Recycling	Ecoinvent 3.12 IPCC 2021 GWP 100a Method

Table: Emission factors used for the calculation of Scope 3 emissions related to end-of-life treatment. Source: Ecoinvent v3.12

- For the estimation of **Scope 2 emissions (Location-based)**, associated with electricity purchased and consumed at offices and operational facilities, the emission factor provided by **ISPRA** (Istituto Superiore per la Protezione e la Ricerca Ambientale) was used. In particular:
    - the emission factor for CO_2 equivalent deriving from grid electricity consumption is taken from the report "Efficiency and Decarbonization Indicators in Italy and in the Biggest European Countries – 2024 Edition";

Electricity Location-Based	Emission factors (kg/kWh)				Source of emission factor
	kg CO_{2eq}	kg CO_2	kg CH_4	kg N_2O	
Electricity consumption in Italy	0,2363	0,2347	0,0006	0,001	ISPRA, Emission factors for electricity production and consumption in Italy, May 2025, sheet 19, tab. Estimation of greenhouse gas emission factors from the electricity sector for electricity consumption.

Table: Emission factor used for the calculation of Scope 2 emissions – location-based. Source: ISPRA, 2025

- **AIB** (Association of issuing bodies) for the estimation of **Scope 2 market-based emissions**, associated with electricity purchased and consumed at offices and operational facilities.

Electricity Market-Based	Emission factors (kg/kWh)	Source of emission factor
	kg CO_{2eq}	
Electricity consumption in Italy – Residual mix	0,4412	AIB 2025, Residual mix

Table: Emission factor used for the calculation of Scope 2 emissions – market-based. Source: AIB, 2025

5.2.2 Global Warming Potential (GWP)

For gases other than CO2, the measured quantities have been converted into metric tons of carbon dioxide equivalent (tCO2eq) using the GWP (Global Warming Potential) values reported in the IPCC Sixth Assessment Report (AR6, 2021–2023), in line with the most recent standards in climate reporting.

Industrial Designation or Common Name	Chemical Formula	Second Assessment Report (SAR)	Fourth Assessment Report (AR4)	Fifth Assessment Report (AR5)	Sixth Assessment Report (AR6)
Carbon dioxide	CO2	1	1	1	1
Methane	CH4	21	25	28	29,8
Nitrous oxide	N2O	310	298	265	273

Table: GWP values of greenhouse gases. Source: IPCC, 2025

5.2.3 Data Accuracy and Quality

I.G.B srl adopts high quality standards in the selection of sources and data processing, in consistency with the accuracy hierarchy proposed by the IPCC:

- **preference for official and updated sources, such as DEFRA, ISPRA, and IPCC;**
- **use of precise and verifiable consumption data, collected from internal documentation, replacing generic estimates;**
- **representativeness and methodological consistency**, to ensure that the applied emission factors are appropriate to the specific operational characteristics of the organization.

The adopted approach allows for a **robust, transparent, and repeatable estimation** of climate-altering emissions linked to company activities, offering a solid foundation for carbon footprint monitoring and the identification of effective reduction strategies.

6. EMISSION REPORTING

6.1 Scope 1 Emissions

6.1.1 Activity data

With reference to the reporting year, **direct greenhouse gas emissions (Scope 1)** were quantified by considering the emission sources within the organizational boundary of **I.G.B srl: mobile combustion**. The following sections report the activity data collected for each category, which form the basis for the subsequent calculation of emissions in CO2 equivalent.

6.1.1.1 Mobile combustion

Emissions generated by the use of company vehicles for operational activities were estimated considering only the vehicles under the organization's control.

The kilometers (km) traveled by the company fleet are the following:

Type	Km traveled	Fuel type
Small car	1.000	Petrol
Medium car	5.500	Petrol
Large car	15.000	Electric
Vans	1.500	Diesel
Medium car	4.000	Diesel
Large car	3.000	Petrol Hybrid

Table: Km traveled

6.1.2 Scope 1 Direct Emissions

6.1.2.1 Emissions from mobile combustion

Emissions from mobile combustion calculated based on kilometers traveled amount to:

Vehicle type	Fuel type	GHG Emissions (tCO_2eq)	tCO_2	tCH_4	tN_2O
Medium car	Diesel	0,68696	0,68024	0,00002	0,00668
Large car	Petrol Hybrid	0,4695	0,46521	0,0003	0,00399
Medium car	Petrol	0,96107	0,95733	0,00198	0,00176
Small car	Petrol	0,14308	0,1424	0,00036	0,00032
Large car	Electric	0	0	0	0
Vans	Diesel	0,23607	0,23358	0,0000075	0,002475

Table: Emissions from mobile combustion - km traveled

6.1.2.2 Total Scope 1 emissions

Emission source	GHG Emissions (tCO_2eq)	tCO_2	tCH_4	tN_2O
Mobile combustion	2,497	2,47876	0,0026675	0,015225
Tot. Scope 1	**2,497**	**2,47876**	**0,0026675**	**0,015225**

Table: Scope 1 Emissions

6.2 Scope 2 Emissions

6.2.1 Activity data

Indirect greenhouse gas emissions from **Scope 2**, deriving from the consumption of electricity purchased from third parties.

6.2.1.1 Purchased electricity

The quantification is based on the total electricity consumption recorded during the reference period, expressed in kilowatt-hours (kWh), as gathered from energy bills, supply contracts, and internal accounting documentation.

The following table reports the overall volume of **purchased electricity** by I.G.B srl.

Energy	Quantity	Unit of measurement
Electricity	988.433	kWh

Table: Purchased electricity

6.2.1.2 Electricity generation from Renewable Sources

I.G.B srl produces **electricity from renewable sources**. During the reporting period, the production was as follows:

Site	Plant type	Produced energy (kWh)	of which self-consumed (kWh)
Operational site - VIGGIU' (VA)	Photovoltaic	255.388	255.388
Operational Site - INDUNO OLONA (VA)	Photovoltaic	116.531	116.531

Table: Self-produced electricity from renewable sources

6.2.2 Scope 2 Indirect Emissions

6.2.2.1 Emissions from purchased electricity

Scope 2 indirect greenhouse gas emissions deriving from the production of electricity purchased and consumed by I.G.B srl were calculated adopting both recognized methodological approaches:

- **Location-based**, which reflects the average emission intensity of the national electricity grid and uses average emission factors provided by ISPRA for CO_2, CH_4 e N_2O;
- **Market-based**, which takes into account the specific characteristics of the electricity supply contract (for example, the energy mix declared by the supplier, renewable energy certifications such as Guarantees of Origin – GO, RECS certificates, or Power Purchase Agreements – PPA), where available.

For the **market-based** approach, the portion of electricity **not covered by renewable energy certifications, GO or PPA** is attributed to the national residual mix and multiplied by the relative emission factor, so as to correctly represent the emission impact of the non-renewable energy component.

The following table reports the results obtained according to both approaches. For the location-based approach, emissions are disaggregated for each greenhouse gas, while for the market-based approach, the total in metric tons of CO_2 equivalent (tCO_2eq) is reported, as detailed data for CH_4 and N_2O are not available in the factors used.

Emission source	Totals (tCO2eq)	tCO_2	tCH_4	tN_2O
Electricity purchased from the grid – location-based	**233,57**	231,99	0,59	0,99
Electricity purchased from the grid – market-based	**436,1**	-	-	-

Table: Scope 2 emissions related to electricity purchase calculated using location-based and market-based approaches

6.3 Scope 3 Emissions

6.3.1 Activity data

Scope 3 emissions include indirect emissions generated along the corporate value chain, upstream and downstream of operational activities. This category includes emissions associated, for example, with the purchase of goods and services, capital goods, upstream and downstream transportation, waste generated, business travel, employee commuting, and the end-of-life treatment of sold products.

The following tables report, for each relevant category, the activity data collected, the calculation methodology applied, and the resulting emissions expressed in tCO_2e.

6.3.1.1 Purchased goods and services

The following table reports the categories of **purchased goods and services** considered in the calculation of Scope 3 indirect emissions, based on the available economic and quantitative data.

Category of good or service	Quantity	U.M.
Purchased paper and cardboard	3.959.429,24	Kg
Purchased goods other than paper and cardboard	976.697,97	€
Purchased services	2.598.214,61	€

Table: purchased paper and cardboard, expenditures incurred for the purchase of goods and services

6.3.1.2 Capital goods

The following table presents the **capital goods** purchased during the reference year, used to estimate the embodied emissions within corporate assets and investments.

Category of capital good	Quantity	U.M.
Technical plants (e.g., electrical systems)	9.100,00	€
Machinery and production plants	56.144,26	€
Industrial equipment	5.830,40	€
IT equipment and servers	24.655,21	€
Furniture and furnishings	19.374,22	€
Other capital goods	4.641,00	€

Table: expenditures incurred for the purchase of capital goods

6.3.1.3 Fuel- and energy-related activities

Below are the indirect emissions associated with the upstream activities of fuels and energy purchased and consumed by I.G.B. S.r.l. in the reference year. These emissions, commonly referred to as well-to-tank (WTT), derive from the extraction, production, processing, and distribution phases of energy carriers prior to their final use by the company.

Fuels/Energy	Quantity	U.M.
Diesel	290	Liters
Petrol	535	Liters
Electricity WTT - electricity (generation)	988.433	kWh
Electricity WTT - electricity (T&D)	988.433	kWh

Table: fuel and energy consumption WTT

The following table also reports the activity data used for the calculation of indirect emissions related to transmission and distribution (T&D) losses of electricity and fuels. The mileage related to the use of the electric car has also been included.

Fuels/Energy	Quantity	U.M.
Diesel	290	Liters
Petrol	535	Liters
Electric car	15.000	Km
Electricity	988.433	kWh

Table: fuel and energy consumption T&D

6.3.1.4 Upstream transportation

This section summarizes the activity data related to upstream transportation and distribution services (Cat. 4). In accordance with the GHG Protocol guidelines, the reporting boundary includes both inbound logistics flows for raw materials and the transportation of finished products sold to customers, the costs of which were borne directly by I.G.B. S.r.l.

The activity data collected are expressed based on the available information (distance/weight-based approach, total transported goods-based approach, or spend-based approach).

The following table summarizes the data related to **upstream transportation** connected to the movement of paper and cardboard, considering the quantities transported, the routes traveled, and the transport mode used.

Producer site	Transport mode	Quantity	U.M.	Average distances
Northern Italy	Lorry 3.5 -7.6 t	430.473,95	Kg	300
Continental Eu country	Lorry 3.5 -7.6 t	3.492.177,05	Kg	1300
Non-mediterranean non-EU country	Cargo ship	8.681,28	Kg	9000

Table: Annual kg transported related to inbound logistics of paper and cardboard

For logistics flows related to the sale of finished products economically borne by the company, the activity data are expressed directly in tonne-kilometers.

Logistics flow	Transport mode	Quantity	U.M.
Finished products distribution	Truck	594.483,17	tonn-km
	Airplane	66.053,69	tonn-km

Table: Total tonn-km for inbound logistics and distribution borne by IGB

For upstream transportation for which it was not possible to trace the quantities transported or distances, and which are not included in the previous flows, the spend-based economic activity data was collected.

Destination	Transport mode	Quantity	U.M.
Viggiù	Road transport – goods (generic)	60.915,57	€

Table: Annual spend (€) related to inbound logistics

6.3.1.5 Waste generated in operations

The following table presents the data related to **waste generated** from corporate activities, including both the emissions associated with waste treatment and disposal, and those deriving from transportation to the destination site.

CER Code	Type of recovery or disposal	Waste category	Quantity	U.M.	Disposal site	Distance km
15 01 01	Recovery R13	Paper and cardboard packaging	820.620,00	kg	LA DELNEGRO SRL	346
15 01 03	Recovery R13	Wooden packaging	70.480,00	kg	LA DELNEGRO SRL	346
08 01 20	Disposal D15	Aqueous suspensions (paints/varnishes)	17.947,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	87
15 01 02	Recovery R13	Plastic packaging	13.600,00	kg	LA DELNEGRO SRL	346
17 04 02	Recovery R13	Aluminium	10.610,00	kg	LA DELNEGRO SRL	346
09 01 02	Recovery R13	Developer solutions (offset plates)	3.598,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	87
15 01 10	Recovery R13	Packaging containing residues of or contaminated by hazardous substances	3.289,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	87
08 04 16	Recovery R13	Aqueous liquid waste containing adhesives	2.486,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	87
15 02 02	Recovery R13	Absorbents, filter materials, wiping cloths and protective clothing contaminated by hazardous substances	2.154,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	87
08 03 12	Recovery R13	Waste ink containing hazardous substances	1.863,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	87
08 03 08	Recovery R13	Aqueous liquid waste containing ink	1.277,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	87
15 01 06	Recovery R13	Mixed packaging	601,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	87
13 02 05	Recovery R13	Mineral-based non-chlorinated engine, gear and lubricating oils	243,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	87
20 03 07	Recovery R13	Bulky waste	100,00	kg	LA DELNEGRO SRL	346
08 03 18	Recovery R13	Waste printing toner containing hazardous substances	55,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	87
08 01 11	Disposal D15	Waste paint and varnish containing organic solvents or other hazardous substances	28,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	87
15 01 01	Recovery R13	Paper and cardboard packaging	189.900,00	kg	LA DELNEGRO SRL	343
15 01 03	Recovery R13	Wooden packaging	11.460,00	kg	LA DELNEGRO SRL	343
08 01 20	Disposal D15	Aqueous suspensions containing paint or varnish	7.004,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	84

15 01 02	Recovery R13	Plastic packaging	3.500,00	kg	LA DELNEGRO SRL	343
15 01 10	Recovery R13	Packaging containing residues of or contaminated by hazardous substances	1.073,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	84
17 04 02	Recovery R13	Aluminium	700,00	kg	LA DELNEGRO SRL	343
08 01 11	Disposal D15	Waste paint and varnish containing organic solvents or other hazardous substances	372,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	84
15 01 06	Recovery R13	Mixed packaging	241,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	84
15 02 02	Recovery R13	Absorbents, filter materials, wiping cloths and protective clothing contaminated by hazardous substances	149,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	84
08 03 12	Disposal D15	Waste ink containing hazardous substances	121,00	kg	D.C. DRUCK CHEMIE ITALIA SRL	84

Table: waste generated from operations

6.3.1.6 Business travel

The following table summarizes the data related to **business travel** carried out in the reference year, considering the means of transport used, routes traveled, distances, and overnight stays.

Type	Quantity	Unit of measurement
Travel by petrol car	6.978,12	km
Travel by diesel car	1.346,50	km
Travel by airplane	19.320,00	km
Overnight stay	12.563,56	€
Food and beverage serving services	190,34	€
Accommodation services	3.719,04	€

Table: Annual spend (€) related to business travel and km traveled

6.3.1.7 Downstream transportation

The following table presents the activity data related to **downstream transportation**, referring to the movement of finished products towards customers or final recipients, where transport costs were not borne directly by I.G.B. S.r.l.

Transport mode	Transported tonn-km
Truck	1.863,42

Table: Total tonn-km transported related to downstream logistics

6.3.1.8 Employee commuting and smart working

The following table reports the data collected on **employee commuting (home-to-work travel)** and on **annual remote working days**, used to estimate both the emissions generated by commuting and those associated with domestic energy consumption linked to smart working.

Means of transportation	Fuel type	Round-trip route length	U.M.
Bus	-	56	Km
Car	CNG	23,72	Km
	Diesel	429,2	Km
	Petrol	460,48	Km
	LPG	81,96	Km
	Hybrid	75,49	Km
	Electric	7,55	Km
Motorbike	Petrol	84,4	Km
Activity	**Total annual days worked remotely/smart working**		
Remote working	360		

Table: Km traveled by employees to commute to and from the workplace and annual smart working days

6.3.1.9 End-of-life treatment of sold products

The following table reports the data used to estimate the emissions associated with the treatment of **sold products** at the end of their life cycle, considering quantity, material composition, and the applied end-of-life scenario.

Prevalent material	Total sold weight (kg)	End-of-life scenario
Paper and cardboard	5.176.904,00	Recycling

Table: kg of sold product

6.3.2 Scope 3 Indirect Emissions

6.3.2.1 Purchased goods and services

The following table reports the indirect emissions associated with **purchased goods and services in the reference year**, calculated on the basis of the expense categories considered and the relative emission factors.

Category of good or service	tCO2eq
Paper and cardboard	**4.236,54**
Purchased goods other than paper and cardboard	**1.008,97**
Purchased services	**652,26**

Table: indirect emissions from purchased goods and services

6.3.2.1.1 Purchased goods and services - FLAG Emissions

Considering the quantitative relevance of paper and cardboard purchases in the activity of I.G.B. S.r.l., operating in the production of pharmaceutical packaging, an assessment of FLAG emissions was also carried out. The acronym **FLAG, "Forest, Land and Agriculture"**, identifies greenhouse gas emissions and removals associated with forestry management, land use, land-use changes, and biogenic carbon. The following table therefore reports the FLAG components connected to the purchase of paper and cardboard, distinguishing between biogenic emissions, emissions from land-use change, and removals from soil management.

Category of good or service	Biogenic emissions tCO2eq	Emissions from land-use change tCO2eq	Removals from soil management tCO2eq
Paper and cardboard	40,57	34,17	0,17

Table: FLAG emissions from the purchase of paper and cardboard

6.3.2.2 Capital goods

The following table presents the embodied emissions within **capital goods** purchased by the company, broken down by asset category and calculated from available economic data.

Category of capital good	tCO2eq
Technical plants (e.g., electrical systems)	11,63
Machinery and production plants	44,22
Industrial equipment	5,51
IT equipment and servers	16,98
Furniture and furnishings	13,58
Other capital goods	4,43
Total	**96,34**

Table: indirect emissions from capital goods

6.3.2.3 Fuel- and energy-related activities

The following table reports the **well-to-tank indirect emissions** associated with the production, processing, and distribution of fuels and energy consumed by the company.

Fuels/Energy	tCO2eq
Diesel	0,18
Petrol	0,31
Electricity WTT - electricity (generation)	45,367
Electricity WTT - electricity (T&D)	3,92
Total	**49,78**

Table: WTT indirect emissions from fuels and energy

The following table presents the **indirect emissions associated with transmission and distribution losses** of electricity purchased and consumed by the company.

Fuels/Energy	tCO2eq
Diesel	0,178
Petrol	0,31
Electric car	0,05
Electricity	18,32
Total	**18,86**

Table: indirect emissions from transmission and distribution of electricity

6.3.2.4 Upstream transportation

The following table reports the **indirect emissions generated by upstream transportation** related to the movement of paper and cardboard, calculated on the basis of the quantities transported, the distances traveled, and the transport mode used.

Means of transportation	Combustion emissions (tCO2eq)	WTT emissions (tCO2eq)	Total (tCO2eq)
Truck	2.849,93	110,14	2.960,07
Cargo ship	0,80	0,23	1,03
Total	2.850,73	110,37	**2.961,1**

Table: indirect emissions from upstream transportation of paper and cardboard and WTT shares

The following table includes emissions related to the transportation of finished products to final customers, where the logistics service was commissioned and paid for directly by IGB.

Means of transportation	Combustion emissions (tCO2eq)	WTT emissions (tCO2eq)	Total (tCO2eq)
Truck	66,13	14,02	80,16
Airplane	53,03	8,93	61,96
Total	119,16	22,95	**142,11**

Table: actual emissions and WTT shares for the distribution of finished products borne by IGB

The following table presents the **indirect emissions associated with the transportation** of other products than paper and cardboard, calculated on the basis of expenditures incurred for upstream transportation and distribution.

Destination	Means of transportation	Combustion emissions (tCO2eq)	WTT emissions (tCO2eq)	Total (tCO2eq)
Viggiù	Road transport – goods (generic)	52,57	125,28	**177,85**

Table: indirect emissions from other upstream transportation and WTT shares

6.3.2.5 Waste generated in operations

The following table reports the **indirect emissions connected to waste generated** from corporate activities, including both treatment and disposal, and waste transportation to the destination site.

Waste category	tCO2eq
Chemical waste	8,13
Spent solvents	0,08
Waste oils	0,04
Paper and cardboard	0,01
Plastic waste	1,95
Wood waste	0,22
Mixed and undifferentiated materials	0,01
Mixed and undifferentiated materials	0,26
Waste transportation	79,00
Total	**89,69**

Table: indirect emissions from waste generated in operations

6.3.2.6 Business travel

The following table presents the **indirect emissions generated by business travel** carried out in the reference year, considering means of transport, routes traveled, and overnight stays.

Means of transportation	tCO2eq	tCO2	tCH4	tN2O
Petrol car	1,14	1,13	0,00	0,00
Diesel car	0,23	0,23	0,00	0,00
Airplane	2,75	2,74	0,00	0,02
Overnight stay	**2,989**	-	-	-
Food and beverage serving services	**0,042**	-	-	-
Accommodation services	**1,474**	-	-	-
Total	**8,63**	**4,10**	**0,00**	**0,02**

Table: indirect emissions from business travel

6.3.2.7 Downstream transportation

The following table presents the **indirect emissions generated by downstream transportation**, referring to the distribution of products or materials to customers, final recipients, or subsequent destination sites.

Means of transportation	Combustion emissions (tCO2eq)	WTT emissions (tCO2eq)	Total (tCO2eq)
Truck	0,21	0,04	0,25

Table: indirect emissions from downstream transportation

6.3.2.8 Employee commuting and smart working

The following table reports the **indirect emissions associated with employee commuting** and estimated **domestic energy consumption** for remote working days.

Emissions from commuting include both the direct combustion portion of vehicles and the upstream portion linked to the fuel supply chain (**Well-to-Tank - WTT**).

Means of transportation	Fuel type	tCO_{2eq}	tCO_2	tCH_4	tN_2O	WTT (tCO_{2eq})
Bus	-	1,32	1,31	0,00	0,00	0,01
Car	CNG	0,94	0,93	0,01	0,00	0,00
	Diesel	16,90	16,73	0,00	0,16	0,09
	Petrol	17,05	16,98	0,04	0,03	0,11
	LPG	3,65	3,65	0,00	0,01	0,01
	Hybrid	2,20	2,18	0,00	0,02	0,01
	Electric	0,00	0,00	0,00	0,00	0,00
Motorbike	Petrol	2,18	2,14	0,03	0,01	0,01
Total		**44,24**	43,92	0,09	0,23	**0,24**
Total emissions from employee commuting						**44,48**

Activity	tCO_{2eq}
Remote working	**8,01**

Table: indirect emissions from employee commuting and smart working (including WTT share)

6.3.2.9 End-of-life treatment of sold products

The following table reports the **indirect emissions associated with the treatment of sold products** at the end of their life cycle, based on the quantities considered, material composition, and the applied end-of-life scenarios.

Prevalent material	End-of-life scenario	tCO2eq
Paper and cardboard	Recycling	0

Table: indirect emissions from end-of-life treatment of sold products

6.3.3 Scope 3 Indirect emissions

GHG Protocol Category	tCO_{2eq}
1. Purchased goods and services	5.897,78
2. Capital goods	96,34
3. Fuel- and energy-related activities	68,64
4. Upstream Transportation and Distribution	3.281,07

5. Waste generated in operations	89,69
6. Business travel	8,63
7. Employee commuting and smart working	52,50
9. Downstream Transportation and Distribution	0,25
12. End-of-Life Treatment of Sold Products	0,00
Total	**9.494,88**

Table: Scope 3 Emissions – Breakdown by category

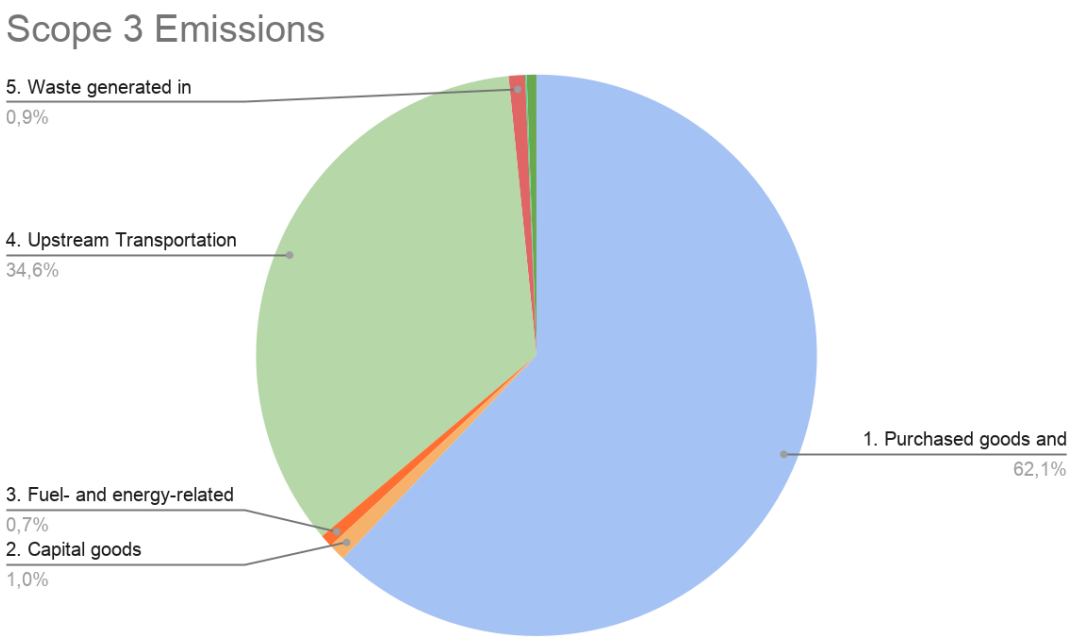


Chart: Scope 3 Emissions – Breakdown by category

6.3.4 Scope 3 Indirect Emissions – FLAG Emissions

GHG Protocol Category	Biogenic emissions tCO2eq	Emissions from land-use change (LUC) tCO2eq	Removals from direct land use change tCO2eq	Total gross FLAG emissions tCO2eq	Total net FLAG emissions tCO2eq
1. Purchased goods and services	40,57	34,17	-0,17	74,73	74,56

Table: Total Greenhouse Gas emissions connected to activities related to Forest, Land and Agriculture

6.4 Total Scope 1, Scope 2 and Scope 3 emissions

This inventory aggregates the direct and indirect emissions recorded by I.G.B. S.r.l. for the reference year, offering a comprehensive view of the carbon footprint generated by operational activities and along the corporate value chain.

The **Scope 1** emissions include the direct emission sources of the organization. In the specific case of I.G.B. S.r.l., these emissions are attributable to fuel consumption for mobile combustion within the corporate fleet. The **Scope 2** emissions reflect the indirect impact related to electricity purchased and consumed at offices and operational facilities. The **Scope 3** emissions instead include other indirect emissions generated upstream and downstream of the corporate activities. For I.G.B. S.r.l., the relevant categories emerged from the analysis have been considered, including: purchased goods and services, capital goods, fuel- and energy-related activities, upstream transportation, waste generated in operations, business travel, employee commuting, downstream transportation, and end-of-life treatment of sold products.

In line with the provisions of the GHG Protocol, for Scope 2 emissions the totals calculated using both approaches are reported:

- **Location-based**: uses average factors of the national energy mix to estimate emissions associated with electricity consumption;

- **Market-based**: considers the potential presence of certification agreements for energy from renewable sources, such as Guarantees of Origin (GO), Renewable Energy Certificates (RECs), or Power Purchase Agreements (PPA).

In the specific case of I.G.B. S.r.l., there are no commercial agreements that guarantee a share of energy coming from renewable sources. Consequently, for the determination of emissions according to the market-based approach, the total electricity consumption was multiplied by the emission factor of the national residual mix, in accordance with the indications of the GHG Protocol.

Scope 3 emissions were calculated starting from the available activity data, such as spend amounts, quantities moved, consumption, kilometers traveled, logistical data, waste produced, business travel, and information related to employee commuting, applying the emission factors most consistent with the nature of the collected data.

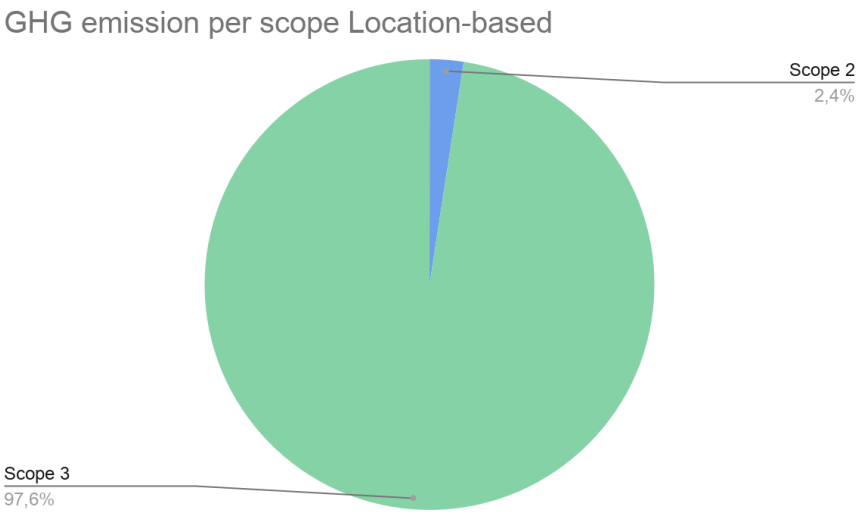
The data are disaggregated by gas type (CO_2, CH_4, N_2O) where available, and presented in terms of CO_2 equivalent (tCO_2eq), for a uniform representation of the contribution to climate change.

Total GHG Emissions - Year 2025				
Type	**Total (tCO_2eq)**	**tCO_2**	**tCH_4**	**tN_2O**
Scope 1	2,50	2,48	0,003	0,015
Scope 2 *Location-Based*	233,57	231,99	0,593	0,988
Scope 2 *Market-Based*	436,10	-	-	-
Scope 3	9.494,88	-	-	-
Total *Location-Based*	**9.730,95**	-	-	-
Total *Market-Based*	**9.933,48**	-	-	-

Table: Total Greenhouse Gas emissions calculated with location-based and market-based approaches

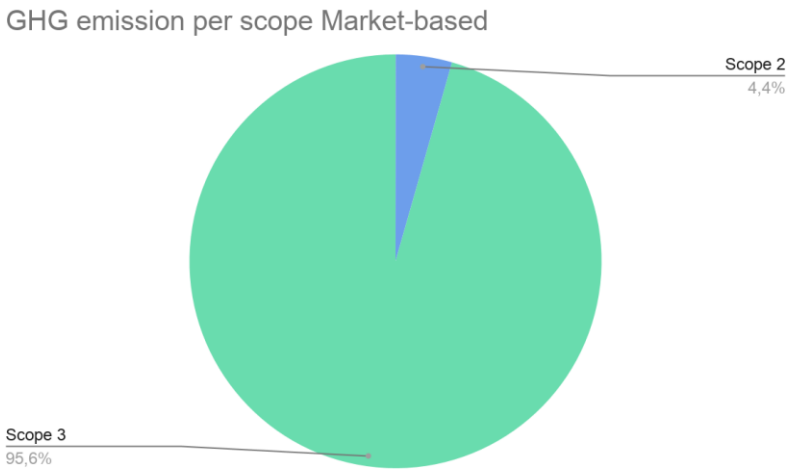
Scope	Emissions (tCO_2eq)	% on total Location-based
Scope 1	2,50	0,03%
Scope 2	233,57	2,40%
Scope 3	9.494,88	97,57%
Total	**9.730,95**	**100,0%**

Table: % of GHG emissions in tCO_2eq by scope - location-based



Scope	Emissions (tCO_2eq)	% on total Market-based
Scope 1	2,50	0,03%
Scope 2	436,1	4,39%
Scope 3	9.494,88	95,58%
Total	**9.933,48**	**100,0%**

Table: % of GHG emissions in tCO_2eq by scope - market-based



6.5 Performance indicators

6.5.1 Emission intensity by revenue

To evaluate the carbon efficiency of corporate activities, an **emission intensity** indicator was calculated, obtained by dividing the greenhouse gas emissions of **Scope 1 and Scope 2** by the revenue generated by **I.G.B. S.r.l.** in the reference year.

The revenue considered for the calculation is equal to **€ 14.300.000**. The indicator therefore expresses the quantity of emissions generated per € 100,000 of revenue generated by the organization.

The indicator was calculated according to both methodologies provided by the GHG Protocol for Scope 2:

- **Location-based**, based on the national average energy mix;
- **Market-based**, which considers specific supply contracts or the certified origin of the energy.

This dual measurement allows for a more complete and transparent view of the organization's emission performance.

GHG emission intensity (Scope 1-2)	**Value (tCO_2e/100.000 €)**
Location-based	1,65
Market-based	3,07

Table: Emission intensity per € 100,000 of revenue

In the reporting period, total Scope 1 and Scope 2 emissions according to the location-based approach amount to 236,06 tCO_2e. Dividing this value by corporate revenue, equal to **€ 14.300.000**, results in an emission intensity of **1,65 tCO_2e per € 100.000 of revenue**.

According to the market-based approach, total Scope 1 and Scope 2 emissions amount to 438,59 tCO_2e. The corresponding emission intensity is **3,07 tCO_2e per € 100.000 of revenue.**

The comparison between the two approaches shows a higher market-based value compared to the location-based one. This difference is attributable to the emission factor applied to purchased electricity according to the national residual mix, which is used in the absence of specific contractual instruments for procurement from renewable sources, such as Guarantees of Origin, RECs, or Power Purchase Agreements.

6.6 Analysis and summary of the GHG emission inventory

The greenhouse gas emissions inventory of I.G.B. S.r.l. for the year 2025 highlights a total emission volume of **9.730,95 tCO_2eq** according to the **location-based approach** and **9.933,48 tCO_2eq** according to the **market-based approach.**

Direct Scope 1 emissions amount to 2,50 tCO_2eq and represent a marginal share of the total inventory, corresponding to approximately **0,03%** of the total. These emissions are attributable to the mobile combustion of the corporate fleet.

Scope 2 emissions, relating to electricity purchased and consumed by the organization, amount to **233,57 tCO_2eq** according to the **location-based** approach and **436,10 tCO_2eq** according to the **market-based approach.** The difference between the two values derives from the application of the national residual mix emission factor for the market-based calculation, in the absence of specific contractual instruments certifying the procurement of electricity from renewable sources, such as Guarantees of Origin, Renewable Energy Certificates, or Power Purchase Agreements.

Indirect **Scope 3** emissions represent the prevailing component of the inventory, with a total value equal to **9.494,88 tCO_2eq.** In percentage terms, Scope 3 accounts for approximately **97,57%** of the total **location-based** emissions and approximately **95,58%** of the total **market-based** emissions. This data highlights the significant weight of the corporate value chain, particularly the emissions associated with purchased goods and services, capital goods, upstream transportation, waste generated in operations, business travel, employee commuting, downstream transportation, and the end-of-life treatment of sold products.

Among the Scope 3 categories, the most significant contribution comes from **purchased goods and services,** equal to **5.897,78 tCO_2eq**, followed by **upstream transportation of paper and cardboard**, equal to **2.961,11 tCO_2eq**. These two items constitute the main part of indirect emissions and therefore represent priority areas for analysis and potential intervention.

Overall, the inventory shows that the corporate carbon footprint is mainly determined by indirect emissions along the supply and distribution chain. Mitigation actions should therefore focus on more efficient procurement management, the selection of suppliers with better environmental performances, the optimization of upstream and downstream logistics, and the progressive reduction of impacts associated with handled materials.

Regarding Scope 2, the adoption of energy procurement instruments from renewable sources, such as Guarantees of Origin, PPAs, or certified supply contracts, would allow for a reduction in the market-based value. Further interventions could involve improving the efficiency of electricity consumption and the potential installation of systems from renewable sources at operational sites.

7. INVENTORY QUALITY MANAGEMENT

7.1 Application of the GHG Protocol accounting principles

The quality of the emissions inventory represents a central aspect of greenhouse gas (GHG) reporting, as it directly influences the reliability, transparency, and credibility of the reported information. For the preparation of this inventory, **I.G.B S.r.l.** was guided by the guidelines contained in the **GHG Protocol Corporate Standard**, adopting an approach oriented towards continuous improvement and consistency with international carbon accounting principles. The company has focused on ensuring methodological consistency, data traceability, and alignment with its operational and management structure. The approach adopted is therefore built on the basis of available resources and integrated with existing management practices.

The process of data collection, processing, and verification is inspired by the five accounting principles of the GHG Protocol:

Relevance: significant emission sources for the activities of I.G.B. S.r.l. have been considered, including direct Scope 1 emissions, indirect Scope 2 emissions from purchased energy, and the main indirect Scope 3 emissions along the value chain. For Scope 3, relevant and quantifiable categories based on available data have been included, including purchased goods and services, capital goods, fuel- and energy-related activities, upstream and downstream transportation, waste generated in operations, business travel, employee commuting, remote working, and end-of-life treatment of sold products.

Completeness: the inventory includes direct Scope 1 emissions, indirect Scope 2 emissions from purchased energy, and indirect Scope 3 emissions deemed relevant to the organization's operational profile. Reporting has been developed in consistency with the defined organizational and operational boundaries, using available activity data and applying emission factors consistent with the type of emission source analyzed.

Consistency: uniform methodological criteria have been applied across all categories, to ensure comparability and repeatability over time.

Transparency: all sources, methods, and data have been reported clearly and with justification, including the limitations and approximations adopted.
Accuracy: an effort has been made to reduce the margin of error in quantification, prioritizing direct data, official sources, and updated emission factors.

7.2 Quality control processes applied

The quality of the information contained in the greenhouse gas (GHG) emissions inventory is an essential element to guarantee its reliability, transparency, and consistency with the principles of the GHG Protocol. I.G.B S.r.l. adopts a set of defined operational practices to ensure methodological rigor and traceability in the collection, processing, and management of data linked to emissions reporting.

The main activities applied to support inventory quality are described below:

Assignment of responsibilities

Supervision of the GHG inventory is entrusted to Aurora Giuntoli, who coordinates data collection, verification, and update activities in collaboration with the involved corporate departments.

Training and specialist support

The personnel involved in the process are supported by training and professional development activities, in collaboration with expert carbon accounting consultants. This makes it possible to maintain high quality standards in data management and in the application of methodologies.

Definition of boundaries and source inclusiveness

The inventory considers relevant direct and indirect emissions within the organizational boundaries of I.G.B S.r.l. as defined in section 3.1 of this document.

Methodological choice and reference sources

The applied calculation methodologies are based on internationally recognized standards. Emission factors are selected from official sources such as ISPRA, AIB, DEFRA, Ecoinvent v.3.11, and IPCC, in order to guarantee consistency, precision, and up-to-date scientific accuracy.

Data collection and validation

Data collection takes place through reliable corporate sources (technical documentation, invoices, operational reports) and is accompanied by cross-checking activities to verify its accuracy and consistency with actual corporate activities.

Verifications and reviews

The inventory is subject to technical verifications, which include internal control sessions and reviews by external consultants with specific experience in Carbon Footprint assessment. These activities strengthen the reliability of the results and offer insights for continuous improvement.

Documentation and traceability

The data, sources, methods, and assumptions used for the preparation of the inventory are thoroughly documented and archived in digital format, in order to guarantee their traceability and availability in subsequent phases of updating and reporting.

7.3 Uncertainty assessment and management

In accordance with the accuracy principle of the GHG Protocol, I.G.B S.r.l. has carried out a qualitative assessment of the uncertainty associated with the emission sources included in the GHG inventory. The objective is to provide a clear and documented indication of the level of reliability of the data used, even in the absence of a complete quantitative assessment.

The analysis was based on two fundamental parameters:

Quality level of the activity data, which assesses the robustness, availability, and collection method of corporate data (e.g., liters of fuel, kWh of electricity);

Reliability level of the emission factor, which considers the origin and representativeness of the coefficient used for the emission estimation (e.g., DEFRA, ISPRA).
A score from 1 to 3 was assigned to each parameter, according to the following scales.

7.3.1 Activity data quality level scale

This scale measures the reliability and origin of the data that quantitatively describe the activities responsible for emissions:

Level	Description
1 - Low	Data is missing or estimated in a highly approximate manner, with high uncertainty. Based on unverified assumptions or estimates.
2 - Medium	Data is estimated based on partial or indirect sources. It has an acceptable representativeness, but presents a significant margin of uncertainty.
3 - High	Data is directly measured or reliably calculated, derived from traceable and official sources (e.g., invoices, technical documentation, measuring instruments).

Table: Scale of the quality level of activity data

7.3.2 Emission factor reliability level scale

This scale evaluates the adequacy and robustness of the emission factor applied to each emission category:

Level	Description
1 - Low	A specific factor is missing. Generic or approximate values are used, which are not referable to the specific operational context.
2 - Medium	The factor derives from technical and scientific sources (e.g., literature, database) or from official bodies (e.g., DEFRA), but is not perfectly representative of the corporate process, for example regarding the geography of the emission factor.
3 - High	The factor is provided by official bodies (e.g., ISPRA, DEFRA, IPCC) or based on certified measurements, with high consistency with respect to the operational context.

Table: Scale of the reliability level of the emission factor

7.3.3 Interpretation of the uncertainty index

The cross-referencing of the two scores allows for obtaining a synthetic uncertainty index for each category, classified as follows:

x < 2: Approximate

2 <= x <= 2,5: Reliable

x = 3: Very reliable

7.3.4 Summary table: uncertainty level by emission source

Emission source	Activity Data Quality Level	Emission Factor Reliability Level	Uncertainty Index
Mobile combustion	3	2	2.5 (Reliable)
Electricity consumption	3	3	3.0 (Very reliable)
Purchased goods and services	3	2	2.5 (Reliable)
Capital goods	3	2	2.5 (Reliable)
Fuel- and energy-related activities	3	2	2.5 (Reliable)
Fuel- and energy-related activities – T&D	3	2	2.5 (Reliable)
Upstream transportation – paper and cardboard	2	2	2.0 (Reliable)
Upstream transportation – spend-based	2	2	2.0 (Reliable)
Waste generated in operations	3	3	3.0 (Very reliable)
Business travel	2	2	2.0 (Reliable)
Employee commuting and smart working	2	2	2.0 (Reliable)
Downstream transportation	2	2	2.0 (Reliable)
End-of-life treatment of sold products	2	2	2.0 (Reliable)

Table: Uncertainty index

7.3.5 Description of the uncertainty index by emission source

The table provides a synthetic but significant assessment of the uncertainty level associated with the main emission categories of **I.G.B S.r.l.**'s GHG inventory.

Specifically:

7.3.5.1 Mobile combustion: 2.5 (Reliable)

The quality of the activity data was classified as **high (grade 3)**. Consumption was tracked in a precise and traceable manner, based on the actual quantity of kilometers traveled. The applied emission factor comes from the DEFRA (United Kingdom) database, an internationally recognized source but not fully representative of Italian specificities (e.g., vehicle fleet characteristics, types of available fuels, national environmental regulations). For this reason, the reliability of the emission factor was assessed as **grade 2**. The overall index is **2.5**, a level considered reliable and in line with best practices.

7.3.5.2 Electricity consumption: 3.0 (Very reliable)

The activity data has a **quality grade of 3** on a scale of 1 to 3, as it derives from **traceable** sources. Specifically, electricity consumption is retrieved directly from utility bills and supply contracts, ensuring a high level of accuracy. The **emission factor** applied for the calculation, referring to the **national electricity mix** developed by **ISPRA**, was classified with the **maximum reliability grade (3)**, as it is an official and institutionally recognized source. The emission factor used in the market-based approach also has a high reliability grade as it refers to the national residual mix published by the **AIB**, as required by the **GHG Protocol**.

7.3.5.3 Purchased goods and services: 2.5 (Reliable)

The activity data relating to purchased goods and services has a **quality grade of 3**, as it is based on traceable economic and accounting information, such as invoices, purchase registers, and classifications of expense categories. The emission factors used derive from recognized databases, including **Ecoinvent** for certain categories of goods and **DEFRA** for specific service items. However, for some components, the factors are based on average values or geographic contexts that do not fully overlap with the Italian one. For this reason, the reliability grade of the emission factor was assessed as **2**. The overall index is **2.5**, corresponding to a **Reliable** level.

7.3.5.4 Capital goods: 2.5 (Reliable)

The activity data relating to capital goods has a **quality grade of 3**, as it derives from traceable corporate sources, such as the asset register, purchase invoices, orders, and economic values of the purchased capital goods. The applied emission factor comes from **DEFRA – SIC multipliers**, a recognized technical source, but based on economic multipliers referring to the UK context. The spend-based methodology allows for a consistent estimate, but presents a margin of approximation compared to the specific production process of the purchased goods. For this reason, the reliability grade of the emission factor was assessed as **2**. The overall index is **2.5**, corresponding to a **Reliable** level.

7.3.5.5 Fuel- and energy-related activities - WTT: 2.5 (Reliable)

The activity data relating to **well-to-tank** emissions has a **quality grade of 3**, as it is calculated starting from energy data, fuel consumption, and transport data expressed in tonne-kilometers (tkm) or kilometers (km) already validated within the inventory. The applied emission factors come from **DEFRA**, a recognized source for estimating indirect emissions associated with the production, processing, and distribution of energy carriers. However, these factors refer predominantly to the UK context and may not fully represent the specific conditions of the Italian energy supply chain. For this reason, the reliability grade of the emission factor was assessed as **2**. The overall index is **2.5**, corresponding to a **Reliable** level.

7.3.5.6 Fuel- and energy-related activities - T&D: 2.5 (Reliable)

The activity data relating to transmission and distribution emissions has a **quality grade of 3**, since it derives from precise consumption of electricity, fuels, and kilometers traveled by electric vehicles, already reported within the inventory. The emission factors used derive

from recognized technical sources, including **DEFRA** and **ISPRA**. The presence of factors referring to different contexts and applied to different subcategories suggests a conservative assessment of the overall reliability. For this reason, the reliability grade of the emission factor was assessed as **2**. The overall index is **2.5**, corresponding to a **Reliable** level.

7.3.5.7 Upstream transportation - paper and cardboard: 2.0 (Reliable)

The activity data relating to upstream transportation of paper and cardboard has a **quality grade of 2**, as it is based on quantities moved, transport modes, and routes considered, but with possible estimated elements regarding distances and the representativeness of actual logistics routes. The applied emission factors derive from **Ecoinvent**, a recognized database for LCA analysis and emission calculations. However, in the absence of full Italian geographic specificity or perfect alignment with the individual corporate logistical process, the reliability grade of the emission factor was assessed as **2**. The overall index is **2.0**, corresponding to a **Reliable** level.

7.3.5.8 Upstream transportation - spend-based: 2.0 (Reliable)

The activity data relating to upstream transportation calculated with a spend-based approach has a **quality grade of 2**, as it is based on logistical expenditures and economic data, which are representative of the purchased service but less precise compared to physical data such as tonnes, kilometers traveled, or tonne-kilometers. The emission factors come from **DEFRA – SIC multipliers**, a recognized source, but referring to average economic categories and the UK context. The combination of economic data and average factors entails a higher margin of uncertainty compared to a distance-based or fuel-based calculation. For this reason, the reliability grade of the emission factor was assessed as **2**. The overall index is **2.0**, corresponding to a **Reliable** level.

7.3.5.9 Waste generated in operations: 3.0 (Very reliable)

The activity data relating to waste generated in operations has a **quality grade of 3**, as it is based on traceable documentation, such as waste identification forms, registers, MUD (Model of Environmental Declaration), EWC codes, quantities delivered, destinations, and treatment methods. The emission factors used derive from **Ecoinvent**, with reference to treatment scenarios consistent with the types of waste and recovery or disposal operations considered. The consistency between operational data, type of waste, and the applied factor allows for assigning a reliability grade of **3** to the emission factor. The overall index is **3.0**, corresponding to a **Very reliable** level.

7.3.5.10 Business travel: 2.0 (Reliable)

The activity data relating to business travel has a **quality grade of 2**, as it includes heterogeneous information, such as kilometers traveled, routes, expense reports, overnight stays, and ancillary services. Some components are precise, while others derive from economic expenditures or average service categories. The applied emission factors come from **DEFRA**, a recognized source, but referring to transport averages, hotel stays, catering services, and accommodation within the UK context. For this reason, the reliability grade of the emission factor was assessed as **2**. The overall index is **2.0**, corresponding to a **Reliable** level.

7.3.5.11 Employee commuting and smart working: 2.0 (Reliable)

The activity data relating to employee commuting and smart working has a **quality grade of 2**, as it is based on information collected through surveys, days of attendance, home-to-work distances, means of transport used, fuel types, and remote working days. These data are representative of mobility and working habits, but may include approximations related to employee responses and the estimation of domestic consumption. The applied emission factors derive from **DEFRA**, a recognized source, but referring to average vehicles and standard homeworking profiles. For this reason, the reliability grade of the emission factor was assessed as **2**. The overall index is **2.0**, corresponding to a **Reliable** level.

7.3.5.12 Downstream transportation: 2.0 (Reliable)

The activity data relating to downstream transportation has a **quality grade of 2**, as it is based on logistical data expressed in tonne-km transported, transport modes, and downstream distribution. Although this is useful quantitative information for calculation purposes, it may include estimates or aggregations regarding actual routes, average loads, and operational methods of the carriers. The applied

emission factors derive from **Ecoinvent**, a recognized technical database, but the geographical and operational representativeness may be general compared to specific routes and corporate logistical conditions. For this reason, the reliability grade of the emission factor was assessed as **2**. The overall index is **2.0**, corresponding to a **Reliable** level.

7.3.5.13 End-of-life treatment of sold products: 2.0 (Reliable)

The activity data relating to the end-of-life treatment of sold products has a **quality grade of 2**, as it is based on the total weight of the sold products, the prevalent material composition, and an assumed end-of-life scenario. The quantitative data is useful and traceable, but actual downstream behavior may vary depending on the actual collection, recovery, recycling, or disposal methods adopted by customers and local waste management systems. The applied emission factors derive from **Ecoinvent**, a recognized source for LCA modeling, but the scenario considered may not fully represent all actual end-of-life conditions. For this reason, the reliability grade of the emission factor was assessed as **2**. The overall index is **2.0**, corresponding to a **Reliable** level.

GLOSSARY

Greenhouse gas terms

Greenhouse gas; GHG: Gaseous constituent of the atmosphere, both natural and anthropogenic, that absorbs and emits radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds.

Greenhouse gas source; GHG source: Process that releases a GHG into the atmosphere.

Greenhouse gas sink; GHG sink: Process that removes a GHG from the atmosphere.

Greenhouse gas reservoir; GHG reservoir: Component, other than the atmosphere, physical unit, or component of the biosphere, that has the capacity to accumulate, store, and release GHG.

Oceans, soils, and forests are examples of components that can act as reservoirs. GHG capture and storage is one of the processes leading to a GHG reservoir. Greenhouse gas emission; GHG emission: Release of a GHG into the atmosphere.

Greenhouse gas removal; GHG removal: Withdrawal of a GHG from the atmosphere through the use of GHG sinks.

Greenhouse gas emission factor; GHG emission factor: Coefficient relating GHG activity data with the GHG emission. A GHG emission factor can include an oxidation component.

Greenhouse gas removal factor; GHG removal factor: Coefficient relating GHG activity data with the GHG removal.

A GHG removal factor can include an oxidation component.

Direct greenhouse gas emission; direct GHG emission: GHG emission from GHG sources owned or controlled by the organization.

This document uses the concepts of equity share or control (financial or operational) to establish an organization's operational boundaries.

Direct greenhouse gas removal; direct GHG removal: GHG removal from GHG sinks owned or controlled by the organization.

Indirect greenhouse gas emission; indirect GHG emission: GHG emission that is a consequence of an organization's operations and activities, but arises from GHG sources that are not owned or controlled by the organization.

These emissions generally occur in the upstream and/or downstream chain.

Global warming potential; GWP: Index, based on radiative properties of GHGs, measuring the radiative forcing after a pulse emission of a unit mass of a given GHG in today's atmosphere integrated over a chosen time horizon, relative to that of carbon dioxide (CO2).

Carbon dioxide equivalent; CO2eq: Unit of comparison for the radiative forcing of a GHG to that of carbon dioxide. Carbon dioxide equivalent is calculated by multiplying the mass of a given GHG by its global warming potential.

Terms relating to the GHG inventory process

Greenhouse gas activity data; GHG activity data: Quantitative measure of activity that results in a GHG emission or a GHG removal

Primary data: Quantified value of a process or an activity obtained from a direct measurement or a calculation based on direct measurements.

Site-specific data: Primary data obtained within the organizational boundary

Secondary data: Data obtained from sources other than primary data

Greenhouse gas inventory; GHG inventory: List of GHG sources and GHG sinks and their quantified GHG emissions and GHG removals.

Greenhouse gas project; GHG project: Activity or activities that alter the conditions of a GHG baseline and cause GHG emission reductions or GHG removal enhancements.

Greenhouse gas programme; GHG programme: Voluntary or mandatory international, national or subnational system or scheme that registers, accounts or manages GHG emissions, GHG removals, GHG emission reductions or GHG removal enhancements outside of the organization or GHG project

Greenhouse gas report; GHG report: Stand-alone document intended to communicate an organization's or GHG project's GHG-related information to its intended users.

Greenhouse gas emission reduction initiative; GHG emission reduction initiative: Specific activity or initiative, not organized as a GHG project, implemented by an organization on a one-time or continuous basis to reduce or prevent direct or indirect GHG emissions or enhance direct or indirect GHG removals.

Monitoring: Continuous or periodic assessment of GHG emissions, GHG removals or other GHG-related data

Uncertainty: Parameter associated with the result of a quantification which characterizes the dispersion of the values that could be reasonably attributed to the quantified value

Significant indirect greenhouse gas emission; significant indirect GHG emission: Organization's GHG emissions, quantified and reported, that comply with the materiality criteria defined by the organization.

Terms relating to organizations, interested parties and verification

Facility: Single installation or series of installations or production processes (stationary or mobile) that can be defined within a single geographical boundary, organizational unit or production process.

Organization: Person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives

Client: Organization or person requesting verification or validation.

Organizational boundary: Grouping of activities or facilities in which an organization exercises operational or financial control, or holds an equity share.

Reporting boundary: Grouping of GHG emissions or GHG removals reported from within the organizational boundaries, and significant indirect emissions that are a consequence of the organization's operations and activities.

Verification: Process for evaluating a statement of historical data and information to determine if the statement is materially correct and conforms to criteria.

Validation: Process for evaluating the reasonableness of the assumptions, limitations and methods that support a statement on the outcome of future activities.

Verifier: Competent and independent person with the responsibility for performing and reporting on a verification.