

GHG INVENTORY REPORT

ISO 14064-1

Aluberg S.p.A

Reference period

2025



Circularity

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GHG REPORT INVENTORY – ISO 14064-1/2025, v1.0

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1. General information

This report outlines and presents the methodologies, approaches, assumptions, and considerations underlying the calculation of the Organizational Carbon Footprint (OCF) of Aluberg S.p.A.

The goal of the organization is to update the previous emission inventories developed for the years 2020 and 2022 and 2024.

1.1. Intended users and disclosure recommendations

With the aim of responding to its stakeholders regarding its environmental performance, Aluberg commissioned Circularity Srl to carry out a corporate carbon footprint assessment in accordance with ISO 14064-1 for the year 2025, updating the previous analyses conducted by third parties for the years 2020 and 2022 and by Circularity in 2024.

Aluberg is committed to annually updating its greenhouse gas (GHG) inventory in order to monitor its evolution over time. The inventory has been prepared to be potentially verified by an independent third-party certification body.

Due to the sensitive nature of the information contained herein, this report is intended exclusively for internal use. Any sharing of this document or portions thereof must be directed only to trusted third parties authorized by the Client. Any public disclosure derived from this document must comply with the requirements of ISO 14064, ISO 14026, and ISO 14021.

1.1. Description of the reporting organization

Aluberg S.p.A. is specialized in the transformation and high-tech processing of thin aluminium, plastic films and flexible laminated materials.

The main application sectors for the finished products are as follows:

- **Pharmaceutical and Cosmetic** (lacquered aluminium for blister packs; aluminium “Cold Forming” laminate for blister packs; aluminium laminated with PE for “strip” packs; aluminium laminates for suppositories; lacquered aluminium for sealing on plastic containers in PP, PS, PET, PVC; aluminium laminates for sealing on glass containers; aluminium for “child-proof, senior-friendly” blisters);
- **Dairy** (lacquered or white polyester aluminium for lids; lacquered aluminium-polyester laminate for single portions; paper–metallized and lacquered polyester laminate for lids; aluminium laminate for sealing caps; aluminium for glass containers; aluminium for puncture-resistant lids; aluminium for hot-fill and pre-cooked applications);
- **Food** (lacquered and coloured aluminium for processed cheese; easy-peel bands for cheese packaging; coloured, printed, or embossed aluminium in rolls; lacquered

coloured aluminium for lids for single portions; lacquered aluminium for chewing gum blister packs);

- **Wine Industry** (Alu-PE-Alu poly-laminates for wine and sparkling wine capsules; coloured or printed lacquered aluminium; coloured aluminium for sparkling wine capsules; coloured PVC capsules; PVC and/or PET tear strips for capsules; narrow strip aluminium for tear strips; coloured aluminium for demijohn caps);
- **Industrial** (neutral and coloured Alu-PET laminates for construction and technical applications; siliconized or lacquered aluminium; siliconized polyester film; aluminium with thermo-lacquers; plastic laminates; Alu/PET laminates for cables; printable aluminium, polyester films and laminates).

As seen above, the materials used for the production process mainly include rolled laminated aluminium and low- and medium-density polyethylene film.

The production cycle includes the following main steps:

- Procurement of raw and auxiliary materials.
- Temporary storage of coils and their allocation to subsequent processing through unwrapping procedures.
- Direct unloading of solvents from tank trucks into underground storage tanks. Lacquers are mostly unloaded from tankers into silos via automated systems. A small part is also delivered in drums and IBCs, stored along with adhesives, catalysts, and additives. The company also self-produces some types of lacquer.
- Unwinding and loading of raw material coils onto machine shafts.
- Application of lacquers via coating machines, fed directly from silos using dedicated systems. Lacquering involves applying a variable-thickness film of paint onto the moving strip; this process is performed using rotogravure and/or semi-flexo coating systems. In the case of laminates, after lacquering, the sheet is laminated with polyethylene film.
- Once the coating phase is completed, the laminate passes through ovens (located in the upper section of the coating machines) to ensure perfect drying of the lacquer.
- The aluminium strip is then automatically rewound into appropriately sized coils.

At this point, the semi-finished products are stored in the warehouse or undergo **post-curing** (a thermal treatment for materials intended for medical or food use to eliminate any residual harmful substances) in a department adjacent to the intermediate warehouse.

Depending on client requirements, mother coils are moved to the **slitting department**, where the product is customized by cutting the coils into smaller ones with different inner diameters, outer diameters, and widths.

The **final stage** of the production cycle is the packaging of the finished product, carried out by specialized personnel in the packaging department. Plant maintenance is carried out either by

internal staff (routine maintenance) or by specialized external personnel (both routine and extraordinary maintenance).

1.2. Responsibilities and GHG information management

This report was prepared through the joint efforts of Circularity S.r.l. and Aluberg S.p.A. In addition to the Circularity contacts listed on the second page of this report, the following Aluberg representatives were involved in the data collection process:

- **Paolo Ronzoni – Quality Manager**
- **Rosario Campagna – Plant Manager**

Circularity, in its role as consultant, was responsible for defining the requirements and providing the necessary knowledge and support for the collection of primary data, the development of the greenhouse gas emissions estimation model, the execution of consistency checks, and the production of the final output.

Aluberg S.p.A., as the owner of the activities, was responsible for providing the primary data and all relevant information required by the consultant for the development and verification of the greenhouse gas inventory.

1.3. Reporting period

The reference year for this report is **2025**. The substantial modelling assumptions adopted in this inventory, are consistent with the previous assumptions made in 2024.

1.4. Reporting standard and verification

The inventory was developed in full accordance with the **UNI EN ISO 14064-1:2019** standard, “Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.”

As of now, the 2025 inventory has not been subject to independent third-party verification.

2. Boundaries and methods

As previously mentioned, Aluberg processes and markets aluminum coils, which are treated according to the requirements of the target sector at its sole facility located at Via Rebecchi 1/2/3 24060 Bagnatica (BG), Italy.

For the purpose of GHG emissions quantification, the operational control approach has been adopted. This approach entails the full accounting of emissions and removals from installations over which Aluberg has operational control.

2.1. Organization boundaries

The organizational boundaries considered for the inventory assessment were defined to include in the accounting the GHG emissions associated with the activities carried out at the production site in Bagnatica. Within the reporting boundaries, the GHG emissions associated with Aluberg's operations were identified and categorized according to the six categories defined by the UNI EN ISO 14064-1:2019 standard.

2.2. Reporting boundaries

During the initial phase of the project, an assessment of the relevance and materiality of all categories required by the standard was carried out. All categories were evaluated based on four different parameters:

- Expected emission magnitude
- Company's influence over the emission source
- Availability of primary data
- Robustness of the estimation approach

Each of the categories defined by ISO 14064-1 was assigned a score ranging from 0 to 3. All categories scoring 0 for "estimated emission magnitude" were considered "Not applicable"; all categories with a total score equal to or less than 6 were classified as "Applicable but not significant" and excluded from the calculation.

As long as all the above relevance and materiality assessments were respected, the mandatory disclosure criteria for emissions set out in the standard were met:

- If a single source has estimated emissions equal to at least 1% of the company's total emissions, that emission source must be included.
- If the total emissions from "non-significant" sources are estimated to exceed 5% of the company's total emissions, the "non-significant" emissions must be included until the estimate of excluded emissions falls below 5%.

2.2.1. Not applicable categories

Tab. 1 illustrates the rationale for the non-applicable categories.

Tab. 1 – Non-Applicable Categories and Reason for Exclusion.

| Categories | Reason of exclusion |
|--|---|
| 1.3 – Process emissions | No emissions fall under this category. |
| 1.5 – Direct emissions and removals from land use, land use change and forestry | Aluberg does not have direct operational control over any forestry activity that would generate such emissions. |
| 2.2 – Purchased energy (heat, steam, cold) | The Aluberg facility does not purchase heat, steam, or cooling in any form. |
| 4.4 – Upstream leased assets (as lessee) | The organization does not control any leased properties; therefore, this category was considered not applicable. |
| 5.1 – Use of sold product | These emissions are considered not significant and are therefore excluded from the operational boundaries of the study, as they are non-impactful, non-reportable, and the organization has no influence over them ¹ . |
| 5.2 – Downstream leased assets (as lessor) | The organization does not lease any assets to third parties that would generate emissions. |
| 5.4 – Investments | The company does not operate as a financial institution or bank; therefore, this category was deemed not applicable. |

2.2.2. Significance and materiality of applicable categories

The results of the applicability analysis are presented below in **Tab. 2**.

Tab. 2 – Applicability analysis results.

| Categories | Expected magnitude | Influence on the source | Data availability | Methodology robustness | Tot | Output |
|---------------------------|--------------------|-------------------------|-------------------|------------------------|-----------|----------|
| 1 Direct emissions | | | | | | |
| 1.1 Stationary combustion | 3 | 3 | 3 | 3 | 12 | S |
| 1.2 Mobile sources | 1 | 3 | 3 | 3 | 10 | S |
| 1.3 Process emissions | 0 | 0 | 0 | 0 | 0 | NA |

¹ This exclusion was also approved as part of the SBTi submission carried out in 2025, with reference to the 2024 base year. The SBTi protocol required at least a preliminary quantification of the emissions associated with the relevant category. However, this estimation is particularly challenging to quantify in a non-arbitrary way, due to both the wide variability of potential downstream processing steps that the commercialized products may undergo and the lack of detailed information—such as equipment-specific energy consumption data from customers—needed to produce an accurate estimate. The conservative estimate performed nevertheless demonstrated the marginal relevance of this category compared to Aluberg’s total emissions footprint. This is further supported by the company’s limited ability to influence such downstream processing activities. These elements therefore justify the exclusion of this category from the emissions inventory.

| Categories | Expected magnitude | Influence on the source | Data availability | Methodology robustness | Tot | Output |
|---|--------------------|-------------------------|-------------------|------------------------|-----------|----------|
| 1.4 Fugitive emissions ² | 2 | 2 | 3 | 3 | 10 | S |
| 1.5 Land use changes | 0 | 0 | 0 | 0 | 0 | NA |
| 2 Indirect emissions from purchased energy | | | | | | |
| 2.1 Indirect emissions from purchased electricity | 2 | 3 | 3 | 3 | 11 | S |
| 2.2 Indirect emissions from purchased steam | 0 | 0 | 0 | 0 | 0 | NA |
| 2.3 Indirect emissions from purchased heat | 0 | 0 | 0 | 0 | 0 | NA |
| 2.4 Indirect emissions from purchased cool | 0 | 0 | 0 | 0 | 0 | NA |
| 3 Indirect emissions from transportation | | | | | | |
| 3.1 Upstream transportation and distribution | 3 | 1 | 2 | 2 | 8 | S |
| 3.2 Downstream transportation and distribution | 2 | 2 | 2 | 2 | 8 | S |
| 3.3 Employee commuting | 1 | 2 | 2 | 2 | 7 | S |
| 3.5 Business travel | 1 | 2 | 2 | 2 | 7 | S |
| 4 Indirect emissions associated with products used by the organisation | | | | | | |
| 4.1 Purchased product and services | 3 | 2 | 3 | 3 | 11 | S |
| 4.2 Capital goods | 1 | 1 | 3 | 2 | 7 | S |
| 4.3 Waste generated | 1 | 2 | 3 | 2 | 8 | S |
| 4.4 Upstream leased assets (as lessee) | 0 | 0 | 0 | 0 | 0 | NA |
| 5 Indirect emissions associated with the use of products of the organisation | | | | | | |
| 5.1 Emissions correlated with the use of the products | 0 | 0 | 0 | 0 | 0 | NA |
| 5.2 Downstream leased as-sets (as lessor) | 0 | 0 | 0 | 0 | 0 | NA |
| 5.3 Emissions from the end of use of the products | 3 | 1 | 2 | 2 | 8 | S |
| 5.4 Emissions correlated with the investment | 0 | 0 | 0 | 0 | 0 | NA |

2.3. Biogenic CO₂ and Greenhouse gases considered.

Unless otherwise specified, the calculation method for determining emission factors is based on the IPCC 2021 Global Warming Potential with a 100-year time horizon (GWP100y).

² Following the collection of new activity data related to fugitive emissions, the category was deemed significant for the purposes of compiling the emissions inventory. Accordingly, emission sources were also identified retrospectively for 2024 and therefore accounted for for that reporting year as well.

The emissions inventory includes the following greenhouse gases: **CO₂, CH₄, N₂O, HFCs, and biogenic CO₂**. There are no direct emissions of **SF₆, NF₃, PFCs**, or other climate-altering gases not otherwise reported.

Biogenic CO₂ released into the atmosphere from the combustion or degradation of biomass is estimated and reported separately, as it does not contribute to the Global Warming Potential (GWP100y) in accordance with regulatory requirements. In addition to biogenic CO₂, other emissions associated with the combustion or degradation of biomass, such as N₂O and CH₄, are included in the overall calculation, as they do not have a net-zero impact in terms of GWP100y despite their biogenic origin.

2.4. Methodologies for the collection of primary data

Under the coordination of Paolo Ronzoni, during the initial phases of the project, the applicability of the emission categories previously monitored in past emission inventories was reviewed. Once the modelling assumptions used in the past were verified, the collection of primary data for each category included in the inventory was carried out. This task was assigned to Dr. Paolo Ronzoni in his role as project coordinator. All data provided refer exclusively to Aluberg's single operational site and to the identified reporting year.

2.5. Methodologies for the GHG inventory calculation

As previously mentioned, the objectives of the study require an estimation approach that is as accurate as possible and closely aligned with primary activity data.

With the exception of the emission category "Capital Goods," physical factors expressed in **kg, m³, and t*km** were used. The emission associated with a specific flow is calculated as the product of the activity data and the corresponding emission factor.

Where possible, emission factors were obtained directly from suppliers (e.g., aluminium), collected through a dedicated survey. **Tab. 3** summarizes all methodological assumptions and details of the emission calculation process.

Tab. 3 – Methodological assumptions for emission calculation.

| Emission categories | Methodological assumptions |
|---|---|
| CAT 1 – Direct GHG emissions and removals | |
| 1.1 – Direct emissions from stationary combustion | <p>All stationary emission sources within the analysed boundary are included. Specifically, the following emissions are considered:</p> <ul style="list-style-type: none"> • Natural gas used for heating and process operations; • Solvents combusted in the post-combustion unit. <p>The primary data related to natural gas consumption is obtained from three meters, each dedicated respectively to: production (via air vein burner), heating of the production area (hot air</p> |

| Emission categories | Methodological assumptions |
|--|---|
| | <p>generator), and heating of the office area (boiler). The activity data is derived from the consumption reported in the natural gas purchase invoices for each meter.</p> <p>For solvents combusted in the post-combustion unit, the activity data is extracted from the Solvent Management Plan, which is prepared annually by the company. The breakdown by solvent type is based on the percentage distribution of purchased solvents (ethyl acetate, methyl ethyl ketone, acetone, butyl acetate, blend of 90% cyclohexane and 10% ethyl acetate; blend 21% isopropanol+79% ethanol) used in the production process, including those contained in paints. The modeling considered the carbon content of the identified solvents and their stoichiometric combustion with oxygen.</p> <p>All information regarding the calculation model and related assumptions is also documented in the Carbon+Alt+Delete application.</p> |
| 1.2 – Direct emissions from mobile combustion | <p>For the fuels used by the company fleet, the data in liters for each type (gasoline and diesel) were provided directly by the company.</p> <p>All information regarding the calculation model and related assumptions is also documented in the Carbon+Alt+Delete application.</p> |
| CAT 2 – Indirect GHG emissions from imported energy | |
| 2.1 – Indirect emissions from purchased electricity | <p>The activity data required for the calculation of emissions in this category is derived from the report provided by the company and based on the information contained in utility bills. The purchase of Guarantees of Origin (GO) was verified through the certificates issued by the supplier.</p> <p>All information regarding the calculation model and related assumptions is also documented in the Carbon+Alt+Delete application.</p> |
| CAT 3 – Indirect GHG emissions from transportation | |
| 3.1 - Upstream transportation and distribution | <p>Based on the available quantities of raw materials and packaging purchased, and using information provided by the identified suppliers, distances and corresponding transport modes were calculated using the EcoTransIT application and an API integrated with Openrouteservice. This allowed for the quantification of tonne-kilometres transported, which were then multiplied by the respective emission factor according to the identified transport mode.</p> <p>Most suppliers are located in Italy or, at most, within the EU; therefore, the vast majority of transport is assumed to be by road. Marginal contributions come from maritime carriers for non-EU suppliers.</p> <p>In accordance with the applicable regulatory requirements, this category also includes emissions from the transport of finished products, where the seller is responsible for the shipment. These cases were identified based on the INCOTERMS codes associated with the shipped products. For each shipment, routes and distances were reconstructed using EcoTransIT. The calculated distances, by land and sea, were then multiplied by the corresponding emission factor.</p> <p>All information regarding the calculation model and related assumptions is also documented in the Carbon+Alt+Delete application.</p> |
| 3.2 - Downstream transportation and distribution | <p>The shipment destinations were identified through data extraction from the company's management system. Based on the INCOTERMS codes, the quantities of goods for which the buyer is responsible for shipping were identified.</p> <p>Conversely, shipments for which Aluberg bears the shipping costs are excluded from this category and accounted for under the upstream transport category, as required by the applicable standard. Distances and transport modes were calculated using EcoTransIT. The main transport modes used are road and maritime transport.</p> <p>All information regarding the calculation model and related assumptions is also documented in the Carbon+Alt+Delete application.</p> |
| 3.3 - Commuting | <p>Based on the residential addresses of each employee and the number of working days, the total kilometers traveled during the reporting year for commuting were calculated. The mode of transport used was determined from an internal company survey conducted on a representative sample of employees. The total kilometers traveled by the entire company workforce were then distributed among the main modes of transport identified.</p> <p>All information regarding the calculation model and related assumptions is also documented in the Carbon+Alt+Delete application.</p> |

| Emission categories | Methodological assumptions |
|--|--|
| 3.4. Business travel | <p>The impacts for this category are calculated using a spend-based approach, based on the costs incurred for business travel and trips.</p> <p>All information regarding the calculation model and related assumptions is also documented in the Carbon+Alt+Delete application.</p> |
| CAT 4 - Indirect GHG Emissions form products used by organization | |
| 4.1 Purchased good and Services | <p>This category includes emissions from sources outside the organizational boundaries associated with the procurement of purchased goods and services. For purchased goods, the data originates from the procurement management system. Raw materials and packaging were classified according to the company's internal coding system as follows.</p> <p>Raw materials</p> <ul style="list-style-type: none"> • Deionized water • Adhesives • Aluminum • Paper • Catalysts • Powder colorants • BOPA film • PE film • PET film • PVC film • Inks • Opacifying agents • Plasticizers • Base resins • Silicones • Solvents • Coatings / Varnishes <p>Packaging</p> <ul style="list-style-type: none"> • Paper • Paperboard • Glue • Iron • Wood • Plastic <p>For each of the clusters identified above, data on the mass purchased during the reporting year were provided. For items measured in units or pieces, the company supplied its own conversion factors in kg/unit. In the presence of recycled material (a condition applicable only to certain PET film items), the percentage of recycled content was deducted from the total quantity when calculating the impact of raw material production.</p> <p>For purchased items with a significant expected magnitude, the availability of primary emission factors provided directly by suppliers was investigated. Through a dedicated survey, primary emission factors were obtained for 73% (by weight) of the aluminium alloys and 41% (by weight) of the PVC film purchased as raw materials.</p> <p>This category also accounts for the impact of services purchased during 2025. The estimation approach is again based on the spend-based method, using the economic value (in €) of the purchased services—extracted from the company's management system—as the activity data. All information regarding the calculation model and related assumptions is also documented in the Carbon+Alt+Delete application.</p> |

| Emission categories | Methodological assumptions |
|--|---|
| 4.2. Capital goods | <p>This category accounts for the impacts associated with capital assets purchased during the reporting year. The primary data (economic value in €) was extracted from the company's fixed asset register, which identifies the following types of assets:</p> <ul style="list-style-type: none"> • specific machinery and equipment; • light constructions; • electronic office machines; • internal transport vehicles; • various and small tools; • software; • industrial and commercial equipment <p>The approach used for calculating the associated emission impacts is the spend-based method. All information regarding the calculation model and related assumptions is also documented in the Carbon+Alt+Delete application.</p> |
| 4.3 Waste | <p>For waste disposal, the activity data is extrapolated from the MUD (Environmental Declaration Forms) compiled and provided by the company. The quantity sent for disposal has been adjusted, where possible, by the recycling rate of the identified material, as reported by Eurostat data. (https://ec.europa.eu/eurostat/databrowser/view/CEI_WM020_custom_354860/bookmark/table?lang=en&bookmarkId=bc39f400-65cd-40a8-bf14-c995c729e2a5). This category also includes emissions related to the transport of waste generated during 2025. This contribution was calculated based on the information attached to the MUD (Environmental Declaration Form). The quantities expressed in tonne-kilometres were therefore multiplied by the corresponding emission factor of the assumed carrier (road transport).</p> <p>All information regarding the calculation model and related assumptions is also documented in the Carbon+Alt+Delete application.</p> |
| 5- Indirect GHG Emissions associated with the use of products from organization | |
| 5.3 End-of-life of products | <p>As a preliminary step, to estimate end-of-life emissions, the destination market of the products shipped during 2025 was identified using data extracted from the company's management system. Based on input from company representatives, the quantities shipped were classified into three main product families:</p> <ul style="list-style-type: none"> • multi-layer composite materials • mono-material aluminum • mono-material plastic film <p>Only for mono-material plastic film was the possibility of recycling assumed; therefore, the quantities of these products were adjusted based on the share sent for recycling in each country where data was available. This analysis was only possible for EU countries, thanks to Eurostat data (https://ec.europa.eu/eurostat/databrowser/view/CEI_WM020_custom_354860/bookmark/table?lang=en&bookmarkId=bc39f400-65cd-40a8-bf14-c995c729e2a5). For Italy, given the availability of more recent data, the source used was the publication "l'Italia del riciclo 2025". For each country, the most geographically appropriate disposal factor was therefore assigned.</p> <p>All information regarding the calculation model and related assumptions is also documented in the Carbon+Alt+Delete application.</p> |

2.6. Tools

The inventory was developed using various support tools for data collection and the selection of emission factors.

- **Carbon Alt Delete**, for the digital collection of data sets and the online visualization of results (with direct access granted to the Client).

For the definition of emission factors:

- **Ecoinvent 3.12 - IPCC 2021 method;**
- **Association of Issuing Bodies year 2025**
- **Greenhouse Gas Reporting: Conversion Factors 2025 – DEFRA;**
- **Exiobase 3.8.2;**
- **Primary emission factors provided directly by the supplier.**

3. GHG Inventory results

Since the results of the greenhouse gas inventory are available with the highest level of detail on the online web application shared with the Client, only the aggregated tables are listed below for completeness.

Tab. 4 Aluberg GHG Inventory with the breakdown of Category 1 emissions contributions, in ton CO₂eq.

| Emission category | All GHG | CO ₂ | CH ₄ | N ₂ O | SF ₆ | NF ₃ | HFCs | PFCs | CO ₂ e ³ |
|---------------------------------|------------------|------------------|-----------------|------------------|-----------------|-----------------|---------------|-------------|--------------------------------|
| 1 - Direct GHG emissions | 12.731,12 | 11.873,36 | 7,52 | 2,65 | 0,00 | 0,00 | 100,38 | 0,00 | 747,20 |
| 1.1 Stationary combustion | 12.595,55 | 11.838,57 | 7,48 | 2,31 | | | | | 747,20 |
| 1.2 Mobile combustion | 35,18 | 34,80 | 0,05 | 0,34 | - | - | - | - | - |
| 1.4 Fugitive emissions | 100,38 | | | | | | 100,38 | | |

Tab. 5 Aluberg Category 2 and 3 emissions.

| Emission category | t CO ₂ eq |
|--|----------------------|
| 2 - Indirect GHG emissions from imported energy | |
| 2.1 Purchased electricity location based | 2.417,55 |
| 2.1 Purchased electricity market based | 0 |
| 3 - Indirect GHG emissions from transportation | 3.910,79 |
| 3.1 Upstream transport and distribution of goods | 3.387,33 |
| 3.2 Downstream transport and distribution of goods | 202,65 |
| 3.3 Commuting | 220,92 |
| 3.4 Business travel | 99,89 |
| 4 - Indirect GHG emissions from products used by organization | 151.717,69 |

³ This column contains all entries for which no further breakdown of greenhouse gases is known.

| Emission category | t CO ₂ eq |
|---|----------------------|
| 4.1 Purchased goods and services ⁴ | 149.492,12 |
| 4.2 Capital goods | 960,64 |
| 4.3 Disposal of solid and liquid waste ⁵ | 1.264,93 |
| 5 - Indirect GHG emissions associated with the use of products from organization | 10.127,74 |
| 5.3 End-of-life of products | 10.127,74 |

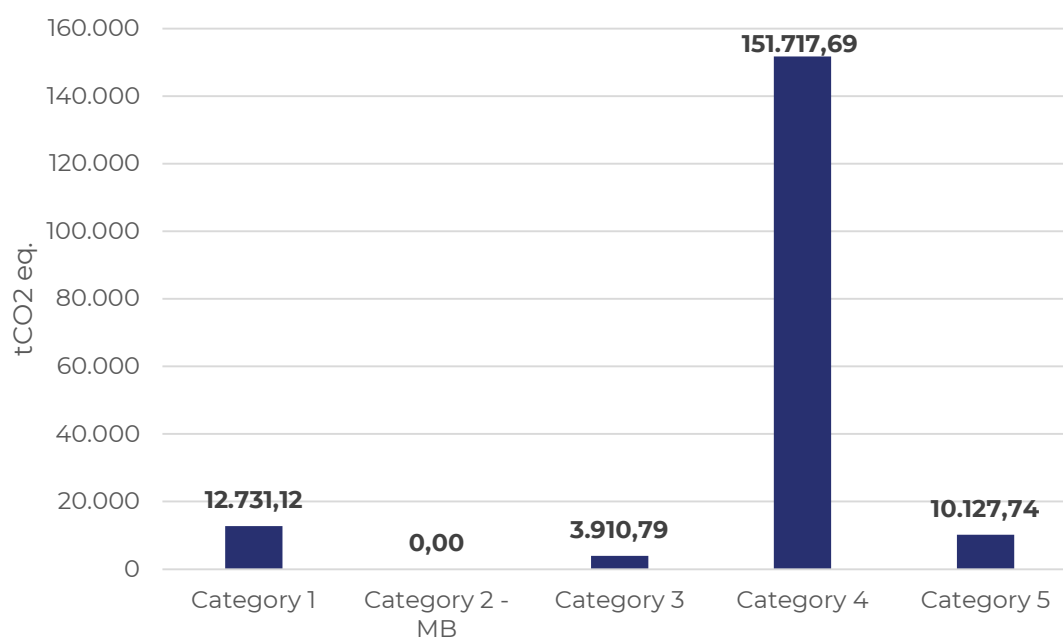


Fig. 1 Total emission for each ISO 14064 category.

Tab. 6 Biogenic emission

| Emission category | t CO ₂ eq |
|---------------------------------|----------------------|
| 1 - Direct GHG emissions | 2,01 |
| Stationary combustion | - |
| Mobile combustion | 2,01 |

⁴ The category also reports the emissions contribution from the transportation and generation of energy sources used by the organization. This figure differs from that reported in the sustainability report, where the data is reported according to the GHG protocol categories. The data reported is market-based and the amount of energy supply is equal to 828,52 tCO₂. According to the location-based approach, the contributions for these items related to purchased renewable energy are not accounted for as impact-free, thus amounting to 1,795.54 tCO₂.

⁵ The category also includes emissions related to the transportation of waste to the disposal sites identified in the 2025 waste documentation. Conversely, these contributions are excluded from the Sustainability Report, in accordance with the GHG Protocol guidance and SBTi requirements, under which such emissions (11.47 t CO₂eq) are considered out of boundary.

| Emission category | t CO ₂ eq |
|---|----------------------|
| <i>Fugitive emission</i> | 0 |
| 2 - Indirect GHG emissions from imported energy | - |
| <i>2.1 Purchased electricity location based</i> | - |
| <i>2.1 Purchased electricity market based</i> | - |
| 3 - Indirect GHG emissions from transportation | 0,000266 |
| <i>3.1 Upstream transport and distribution of goods</i> | - |
| <i>3.2 Downstream transport and distribution of goods</i> | - |
| <i>3.3 Commuting</i> | - |
| <i>3.4. Business travel</i> | 0,000266 |
| 4 - Indirect GHG emissions from products used by organization | 153,56 |
| <i>4.1 Purchased goods and services</i> | 153,08 |
| <i>4.2 Capital goods</i> | 0,49 |
| <i>4.3 Disposal of solid and liquid waste</i> | - |
| 5 - Indirect GHG emissions associated with the use of products from organization | - |
| <i>5.3 End-of-life of products</i> | - |

Fig. 2 shows the detailed emission contribution of the categories analyzed in Aluberg's inventory.

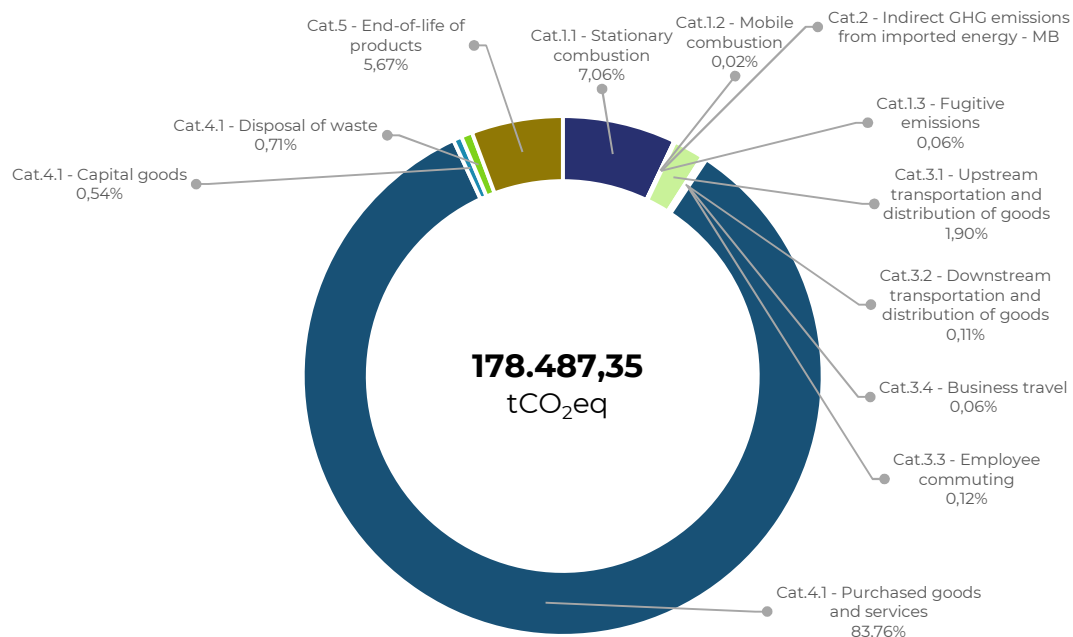


Fig. 2 Breakdown of the overall emissions of Aluberg S.p.A.

An analysis of the results shows that the largest share of emissions is concentrated in the materials and services purchased by the organization (Category 4), followed by direct emissions (Category 1, mainly from stationary combustion sources) and the end-of-life treatment of products

placed on the market. Overall, Scope 3 (Categories 3, 4, and 5) accounts for 93% of Aluberg's carbon footprint. For further details on the assumptions used in modelling each category, please refer to Chapter 2.5.

FOCUS POINT – Aluminium suppliers

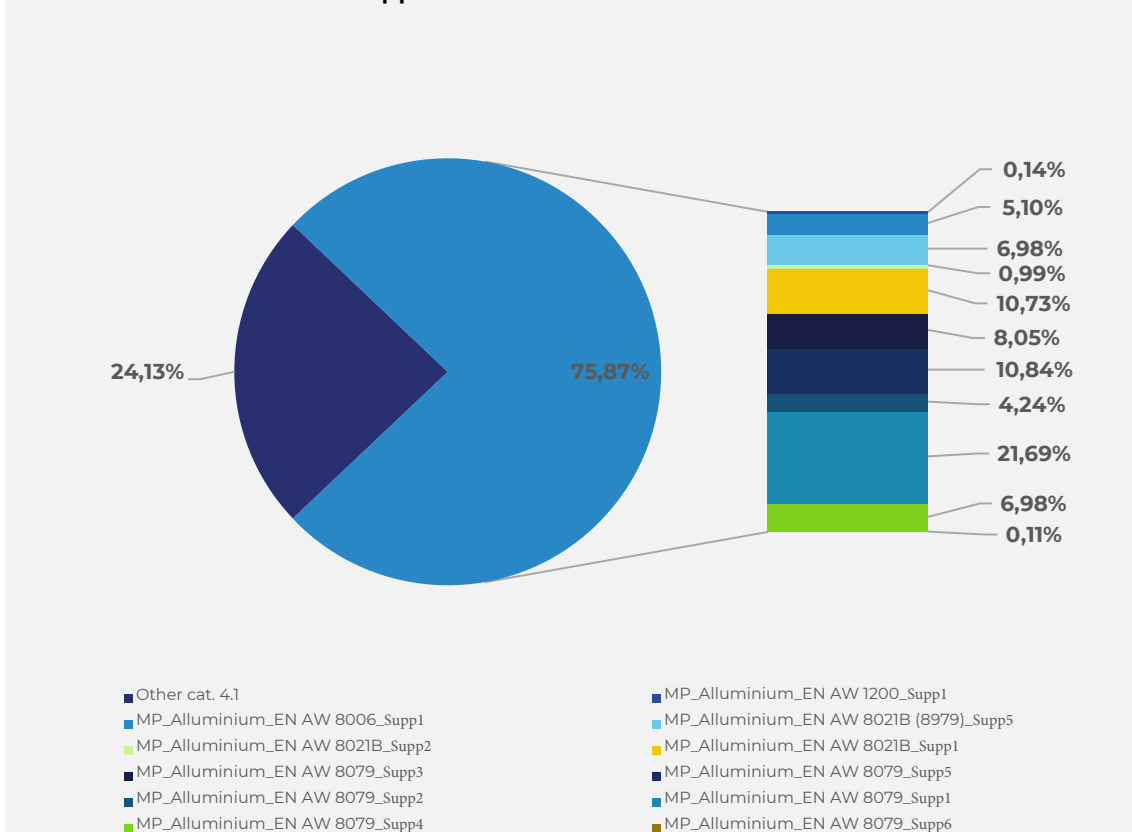


Fig. 3 Percentage contributions of category 4.1 and breakdown of emission contributions for each aluminium supplier.

For a manufacturing company, a substantial share of greenhouse gas emissions is typically associated with the procurement of raw materials. Based on the inventory results, this consideration is particularly relevant for a company such as Aluberg. Considering the production processes described in the previous sections, it is not surprising that Category 4.1 is largely driven by aluminium, which accounts for approximately 75% of the total emissions within the category.

The emission contributions for suppliers are reported below:

Tab. 7 Emission contribution for Aluminium suppliers.

| Aluminium alloy-supplier | tCO ₂ eq |
|---------------------------------------|---------------------|
| MP_Aluminium_EN AW 8079_Supp1 | 32.428,10 |
| MP_Aluminium_EN AW 8079_Supp5 | 16.210,60 |
| MP_Aluminium_EN AW 8021B_Supp1 | 16.041,05 |
| MP_Aluminium_EN AW 8079_Supp3 | 12.033,54 |
| MP_Aluminium_EN AW 8021B (8979)_Supp5 | 10.440,43 |
| MP_Aluminium_EN AW 8079_Supp4 | 10.435,10 |

| | |
|--------------------------------|----------|
| MP_Aluminium_EN AW 8006_Supp1 | 7.629,12 |
| MP_Aluminium_EN AW 8079_Supp2 | 6.340,59 |
| MP_Aluminium_EN AW 8021B_Supp2 | 1.484,14 |
| MP_Aluminium_EN AW 1200_Supp1 | 209,04 |
| MP_Aluminium_EN AW 8079_Supp6 | 167,44 |

For this material, it was possible to disaggregate emissions by individual supplier using the information collected. This level of detail enables the identification of key actors within the supply chain, towards whom engagement efforts may be prioritised. Such insights provide a sound basis for potential collaborative initiatives aimed at reducing the carbon footprint or, more broadly, for targeted supplier engagement on climate-related performance. This commitment is all the more crucial given the reduction target as validated by SBTi during 2025. The commitment also involves obtaining primary emission data for the following aluminium alloys purchased by Aluberg:

- Alloy 8079 (Supp5);
- EN AW 8021B - Alloy 8979 (Supp5);
- EN AW 1200 (Supp1);
- EN AW 8006 (Supp1);
- EN AW 8021B (Supp1);
- EN AW 8079 (Supp5).

Within Scope 1, the contribution of stationary sources is particularly significant due to the combustion of solvents in post-combustors—an essential process to comply with environmental regulations set by the legislator. These sources alone account for more than half (59%) of the emissions attributable to category 1.1.

Tab. 8 Emissions contribution for category 1

| | tCO ₂ eq |
|---|---------------------|
| 1.1 Stationary combustion-Natural gas | 5.032,86 |
| 1.1 Stationary combustion-Acetone | 3.582,94 |
| 1.1 Stationary combustion-Acetato di etile | 2.196,70 |
| 1.1 Stationary combustion-Metilchetone | 1.029,11 |
| 1.1 Stationary combustion-other solvents | 710,05 |
| 1.4 Fugitive emissions-R-407c | 67,88 |
| 1.1 Stationary combustion-Butil Acetato | 37,15 |
| 1.4 Fugitive emissions-R-134a | 32,50 |
| 1.2 Mobile combustion-diesel | 24,22 |
| 1.2 Mobile combustion-petrol | 10,97 |
| 1.1 Stationary combustion-21 % Isopropanolo + 79% etanolo blend | 4,52 |
| 1.1 Stationary combustion-90% cicloesano 10% estere (acetato etile) blend | 2,22 |

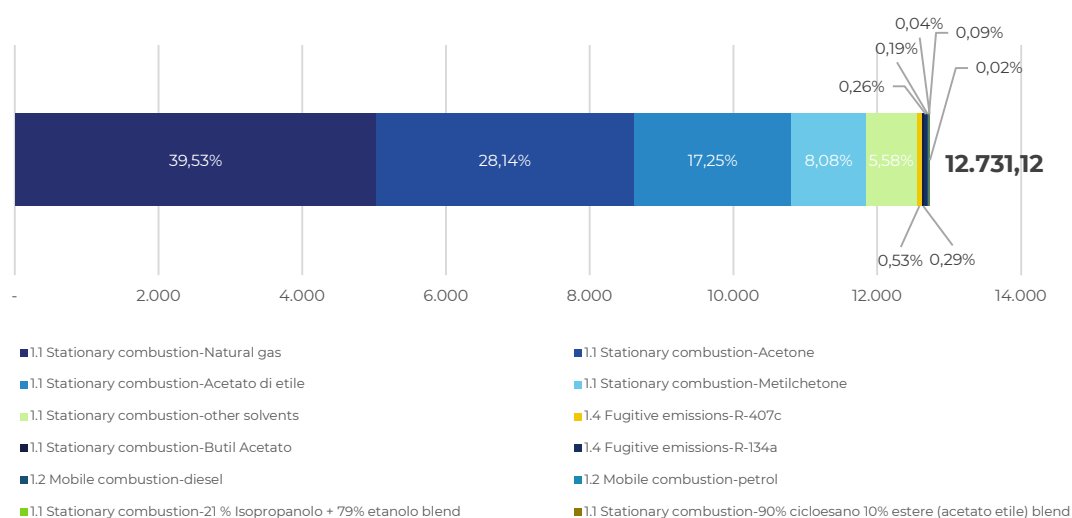


Fig. 4 Breakdown of category 1.1 – stationary combustion.

A final consideration concerns Category 5.3, related to end-of-life treatment of products. The significant contribution observed—amounting to 10,127.74 tCO₂eq—is primarily driven by the conservative modelling assumptions adopted. These assumptions were deemed necessary given the nature of the products placed on the market and the current end-of-life treatment options available to them (for further details on the modelling approach, refer to Section 2.5).

In particular, the effective recyclability of mono-material aluminium products (e.g. those intended for the food and wine sectors) is still under assessment. Likewise, for multi-layer materials, such as pharmaceutical blister packs, the heterogeneity of layer compositions and the frequent presence of PVC components currently prevent feasible recovery operations. The only product category for which recycling was considered achievable, based on the current state of available technologies, is mono-material plastic films.

Additionally, the impact of this category is significantly influenced by the waste management route applied at end of life, which may differ substantially depending on the geographical area in which disposal takes place. These aspects are clearly illustrated in Table 7, which presents a comparison of selected emission factors used for end-of-life modelling. The selection of the most geographically representative emission factor was based on the actual destination markets of the products manufactured by Aluberg.

Tab. 9 Differences between some of the emission factors used for end-of-life (EOL) modelling

| Provider Ecoinvent 3.12 | Emission factor – IPCC 2021 GWP total (no LT) |
|---|---|
| market for municipal solid waste – Italy | 0,6437 kg CO ₂ eq/kg |
| market for municipal solid waste – Poland | 0,3528 kg CO ₂ eq/kg |
| market for municipal solid waste – Spain | 0,5464 kg CO ₂ eq/kg |
| market for municipal solid waste – ROW ⁶ | 0,907 kg CO ₂ eq/kg |

⁶ Rest of the World

3.1 Uncertainty Analysis

All input data were assessed according to the data quality system of the Carbon+ Alt+Delete software, which is based on the principles established by the GHG Protocol. The methodology involves assigning an uncertainty value to each data point included in the emissions inventory, both at the emission factor level and at the primary data level.

The uncertainty level of the emission factor is automatically defined by the software based on the available information from the source databases, considering:

- **Data completeness**
- **Precision**
- **Geographical representativeness**
- **Technological representativeness**

The uncertainty of primary data is determined by the user, who, during data entry, assigns an uncertainty value based on the same parameters used for emission factors. The aggregated uncertainty value, expressed for each category identified in the inventory, is reported as a percentage geometric standard deviation (σ GSD). For further details, refer to the methodological notes provided by the software developer⁷.

Tab. 10 Uncertainty analysis.

| Emission categories | | Uncertainty (confidence 95%) |
|----------------------------|---|---------------------------------|
| 1 | Direct GHG emissions | -7% to +8% |
| 1.1 | Stationary combustion | -8% to +8% |
| 1.2 | Mobile combustion | -4% to +4% |
| 1.3 | Fugitive emissions | -45% to +83% |
| 2 | Indirect GHG emissions from imported energy | 0% to +0% |
| 2.1 | Purchased electricity-location based | 0% to +0% |
| | Purchased electricity-market based | -20% to +24% |
| 3 | Indirect GHG emissions from transportation | -5% to +6% |
| 3.1 | Upstream transport and distribution of goods | -6% to +6% |
| 3.2 | Downstream transport and distribution of goods* | -7% to +7% |
| 3.3 | Employee commuting | -30% to +42% |
| 3.4 | Business travel | -38% to +60% |
| 4 | Indirect GHG emissions from products used by organization | -6% to +6% |
| 4.1 | Purchased goods and services | -6% to +6% |
| 4.2 | Capital goods | -22% to +28% |
| 4.3 | Disposal of solid and liquid waste | -14% to +16% |
| 5 | Indirect GHG emissions associated with the use of products from organization | -10% to +11% |
| 5.3 | End-of-life of products | -10% to +11% |
| Total GHG emissions | | -5% to +5% |

⁷ [Carbon Alt Delete support - Uncertainty](#)

References

- [1] DEFRA - Department for Environmental Food Rural and Agricultural affairs, “UK Government GHG Conversion Factors for Company Reporting,” 2025.
- [2] Eurostat, “Recycling rates for packaging waste.” <https://ec.europa.eu/eurostat/data-browser/view/ten00063/default/table>.
- [3] AIB, European Residual Mixes 2025.

