
# CARBON FOOTPRINT REPORT

# 2025

QUANTIFICATION AND REPORTING OF GREENHOUSE GAS EMISSIONS FOR THE FAGGI ENRICO S.P.A. FACILITY IN VIA MAJORANA 101/103, SESTO FIORENTINO (FI), IN ACCORDANCE WITH THE UNI EN ISO 14064-1:2019 STANDARD.

Revision 2 of 29.01.2026

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# 1 GENERAL DESCRIPTION

Faggi Enrico S.p.A. specialises in the production of fine chemicals and catalysts, and in the recovery, refining and trading of precious metals.

It operates 3 plants located in the industrial districts of Sesto Fiorentino and Florence, and a sales office in the municipality of Arezzo.

**Headquarters and Plant**
Via Ettore Majorana 101/103
50019 Sesto Fiorentino (FI)

UNI EN ISO 14001
UNI EN ISO 9001
UNI ISO 45001
EMAS
RJC Certified member
RJC Chain of Custody
**UNI EN ISO 14064**

Sesto Fiorentino Plant
Via Majorana 38/40
50019 Sesto Fiorentino (FI)

UNI EN ISO 14001
UNI EN ISO 9001
UNI ISO 45001
RJC Certified member
RJC Chain of Custody

Florence Plant
Via de' Cattani, 222
50145 Florence (FI)

UNI EN ISO 14001
UNI EN ISO 9001
UNI ISO 45001
RJC Certified member
RJC Chain of Custody

Arezzo Office
Via F.lli Lumiere, 88/E
52100 Arezzo

UNI EN ISO 9001
UNI ISO 45001
RJC Certified member
RJC Chain of Custody

The person responsible for this technical report is the corporate management system (CMS) manager, who prepared it with the collaboration of external consultants, in compliance with the standard UNI EN ISO 14064-1:2019. The report describes the principles, concepts and methods concerning the quantification and reporting of direct and indirect greenhouse gas (GHG) emissions from the Plant at Via Majorana 101/103 in Sesto Fiorentino.

The intended users of the GHG Report are the Organization's clients, particularly companies in the jewellery, high fashion and pharmaceutical chemistry sectors.

The organizational boundaries include only the Plant at Via Majorana 101/103 in Sesto Fiorentino; all other sites are therefore excluded.

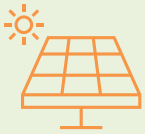
This document has been verified by the Certiquality Institute, accredited by ACCREDIA for the verification of GHG inventories compliant with the standard UNI EN ISO 14064-1:2019, with a limited level of assurance; this GHG Report will be published on the Company's website (www.faggi.it ).

## Key Facts 2025


Carbon Footprint

**3456 t $CO_2e$[1]**

**3109 t $CO_2e$[2]**



Avoided emissions[3]

**348 t $CO_2e$**

**10.06% of total emissions**

Waste treated 2025

**1155,9 t**

Number of employees

**50 Sesto**

**70 total**

Trees

**51**

Green area

**2480 mq**

[1] Value obtained by quantifying emissions related to electricity consumption based on a location-based approach.

[2] This refers to the case where all purchased electricity is supplied with a corresponding Guarantee of Origin.

[3] The avoided emissions are attributable to the use of energy from renewable sources (difference between location-based and market-based approaches)

## 1.1 GHG Policy

The Organization, within its corporate management system, has established its environmental policy, an extract of which is provided below.

Safeguarding the environment: environmental performance

- Calculate the environmental footprint of our activities according to the international standard UNI EN ISO 14064-1:2019 through the analysis and accounting of $CO_2$
- Define a carbon management system aimed at minimising atmospheric emissions.
- Develop a plan to offset greenhouse gas emissions with equivalent measures (carbon neutrality).
- Minimise atmospheric emissions.
- Remediate the negative impacts of our activities on the environment.
- Manage waste responsibly.
- Comply with applicable legal requirements regarding our environmental aspects.
- Maintain and improve our environmental management system.
- Adhere to the European Eco-Management and Audit Scheme (EMAS).

The Organization's policy is available for download in the "Certifications" section of the website www.faggi.it.

## 1.2 Regulatory references

UNI EN ISO 14064-1:2019. Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.

UNI ISO/TR 14069:2017. Greenhouse gases – Quantification and reporting of greenhouse gas emissions for organizations – Guidance for the application of ISO 14064-1.

## 1.3 Terms and definitions

The terms and definitions set out in the reference standards apply.

## 1.4 Principles

The application of principles is fundamental to ensuring that GHG information is accounted for in a fair and correct manner. The principles underpin the requirements of this report and guide the Organization's application of the reference standard.

Relevance | Completeness | Consistency | Accuracy | Trasparency

## 1.5 Inventory objectives

The corporate objectives of the GHG report are:

- To understand and track the GHG emissions produced by FAGGI ENRICO in an accurate, consistent and transparent manner to understand the environmental impacts of the Company.
- To identify opportunities for reducing GHG emissions.
- To report on progress against already established GHG targets, which are certified by the Certiquality Institute to achieve measurable reductions in the environmental impact of FAGGI ENRICO.
- To publicly disclose this information in a transparent and verified manner and to voluntarily participate in greenhouse gas reduction programmes and certifications.

Analyse the impacts
of GHGs

Establish
measurable objectives

Identify
reduction opportunities

Publication
and participation

# 2 GHG INVENTORY BOUNDARIES

The organizational boundaries for this report are represented by the perimeter of the Sesto Fiorentino Plant at Via Majorana 101/103, where the Organization carries out the following activities:

- recovery of precious metals from waste and slag from chemical and industrial processing;
- storage and disposal of hazardous waste;
- manufacture of precious metal-containing chemical products;
- trading of pure precious metals and precious metal-containing chemical products.
- sorting and selection of solid waste (small metal parts).

The Florence Plant has not yet been completed; the construction of the precious metals Refining department is currently nearing completion. This site cannot therefore be included in the organizational boundaries at this time.

The Arezzo office consists of a precious metals counter that deals exclusively with the trading of the Company's products.

The organization has chosen to consolidate its GHG emissions and removals at the installation level by applying the control-based approach.

FAGGI ENRICO S.p.A. has full ownership and management of its operations; therefore, its organizational boundaries are the same regardless of the consolidation method used.

# 3 REPORTING BOUNDARIES

This report accounts for and reports the following GHGs covered by the sixth IPCC Report (2021) and in accordance with UNI EN ISO 14064-1:2019:

- $CO_2$ (Direct and indirect emissions).
- $N_2O$ (Direct emissions).
- $CH_4$ (Fugitive emissions and those associated with fuel consumption, expressed as T $CO_2$eq).
- CFCs (Fugitive refrigerant gas emissions expressed as T $CO_2$eq).

GHG $SF_6$, $NF_3$ were not considered as they do not form part of the Faggi Enrico S.p.A. process.

| ISO Categories | Description | Applicability |
|---|---|---|
| 1 | Direct GHG emissions and removals | ✓ |
| 2 | Indirect GHG emissions from imported energy | ✓ |
| 3 | Indirect GHG emissions from transport | ✓ |
| 4 | Indirect GHG emissions from products used by the organization | ✓ |
| 5 | Indirect GHG emissions associated with the use of products from the organization | ✗ |
| 6 | Indirect GHG emissions from other sources | ✗ |

Tabella 1 GHG inventory categories

| Categories and subcategories of GHG emission or removal | | Quantified emissions | Sources | Sinks | Notes |
|---|---|---|---|---|---|
| **Category 1 – Direct GHG emissions and removals** | | | | | |
| 1 | Direct emissions from stationary combustion | YES | Combustion of natural gas in incineration and melting furnaces, steam generators and boilers for space heating and hot water production. | Not present | - |
| 2 | Direct emissions from mobile combustion | YES | 4 goods transport trucks of 35 quintals and one of 96.50 quintals. | Not present | The vehicles are used both for the transport of purchased products and for the delivery of products traded. |
| 3 | Direct process-related emissions | YES | Channelled emission points from extraction of production process fumes. | Not present | - |
| 4 | Fugitive direct emissions | YES | Refrigerant gas leaks from air conditioning systems. | - | No emissions. No GHG leaks were detected. |
| 5 | Direct emissions and removals from land use, land-use change and forestry | NO | - | 48 trees and 2,480 $m^2$ of grassland | Direct removals proved to be negligible. |
| **Category 2 – Indirect GHG emissions from imported energy** | | | | | |
| 6 | Indirect emissions from imported electricity | YES | Emissions resulting from the generation of purchased electricity | - | The imported electricity was purchased with Guarantee of Origin Cancellation Certificates as it is produced solely from renewable sources. |
| 7 | Indirect emissions from energy imported through a physical network | NO | - | - | The organization does not import energy through a physical network. |
| **Category 3 – Indirect GHG emissions from transport** | | | | | |
| 8 | Upstream freight transport and distribution | YES | - | - | See Category 1 subcategory 2 |
| 9 | Business travel | NO | Trips made by car or plane | - | Not significant |
| 10 | Client and visitor transport | NO | 1,939 visitors per year | - | Not significant |
| 11 | Downstream transport and distribution | YES | - | - | See Category 1 subcategory 2 |
| 12 | Employee commuting | YES | 50 employees who travel to work by car covering an average distance of approximately 12 km | Not present | - |
| **Category 4 – Indirect GHG emissions from products used by the organization** | | | | | |
| 13a | Purchased products | YES | Precious metals, chemicals, packaging, consumables, water | Not present | Precious metals purchased for processing are included; those resold unaltered are excluded. |
| 13b | Purchased energy production (upstream) | YES | Upstream emissions from fuel production (Diesel) | Not present | - |
| 13c | Purchased energy production (upstream) | YES | Upstream emissions from fuel production (Natural gas) | Not present | - |

| Categories and subcategories of GHG emission or removal | | Quantified emissions | Sources | Sinks | Notes |
|---|---|---|---|---|---|
| 13d | Purchased energy production (upstream) | YES | Upstream emissions from the production and transport/distribution of purchased electricity | Not present | - |
| 13e | Purchased energy production (network losses) | YES | Upstream emissions from network losses in the transport/distribution of purchased electricity | Not present | - |
| 13f | Electricity production (upstream) | YES | Upstream emissions from the upstream production of electricity via photovoltaic panels | Not present | - |
| 14 | Capital goods | YES | 2 buildings (each consisting of a production department and offices)<br>Plant and work equipment | Not present | Emissions from capital goods are depreciated based on the actual lifetime of each asset. |
| 15 | Disposal of waste produced | YES | Transport, recovery and disposal of waste generated in operations | - | - |
| 16 | Rented equipment | NO | Not present | - | The Organization does not use rented assets. |
| 17 | Other services | NO | - | - | The organization has not used other services. |
| **Category 5 – Indirect GHG emissions associated with the use of products from the organization** | | | | | |
| 18 | Product use phase | NO | Clients' production cycle using the organization's products | - | Category 5 is excluded because, as these are recovered precious metals, their use is highly variable (it depends on the product they will form part of) and it is therefore not possible to quantify the emissions associated with the use phase. |
| 19 | Rented assets | NO | - | - | The organization has not rented its own assets to other organizations. |
| 20 | End-of-life product phases | NO | - | - | The waste arising from the use of products is delivered to the organization, which carries out recovery treatment. The emissions linked to this process are therefore already accounted for in the preceding sections. |
| 21 | Investments | NO | - | - | The organization has not made investments. |
| **Category 6 – Indirect GHG emissions from other sources** | | | | | |
| - | - | - | - | - | - |

Tabella 2 Subdivision into GHG inventory subcategories

## 3.1 Significance criteria

To identify, assess and select significant indirect emissions, the organization has adopted the following qualitative-quantitative method, considering the principles indicated in Appendix H of the reference standard (UNI EN ISO 14064-1:2019). The factors considered in the significance and materiality assessment include:

- Magnitude (E)
- Level of influence (I)
- Difficulty in obtaining data (D)

A numerical value has been assigned to each factor according to the following criteria:

| E | Emission or removal magnitude |
|---|---|
| **0** | When a single source has an estimated emission or removal likely below 0.1% of total emissions |
| **1** | When a single source has an estimated emission or removal likely below 1% of total emissions |
| **2** | When a single source has an estimated emission or removal likely at least 1% of total emissions |

Tabella 3 Magnitude level

| I | Level of influence |
|---|---|
| **0** | When the organization cannot monitor and reduce GHG emissions and removals |
| **1** | When the organization can monitor but not reduce GHG emissions and removals |
| **2** | When the organization can monitor and reduce GHG emissions and removals |

Tabella 4 Level of influence

| D | Difficulty in obtaining data |
|---|---|
| **0** | The emission or removal factor and/or activity data are difficult to obtain |
| **1** | The emission or removal factor and/or activity data are easily obtainable |
| **2** | The emission or removal factor and/or activity data are available |

Tabella 5 Level of difficulty in obtaining data

The significance of each indirect emission and removal is calculated using the following formula:

$$S = E \times I \times D$$

Where S is the significance index and can take a value between 0 and 8.

| *S* | *Emission or removal significance* |
|---|---|
| **S < 2** | NOT SIGNIFICANT |
| **S ≥ 2** | SIGNIFICANT |

Tabella 6 Significance level

In addition to the above, the Organization ensures that the total of non-significant sources does not exceed 5% of the total calculated GHG emissions.

The significance analysis for each emission source is reported in the spreadsheet CFO_SESTO_101_2025_rev_1.xlsx.

## 3.2 Exclusions

Category 5 is excluded because, as these are recovered precious metals, their use is highly variable (it depends on the product they will form part of) and it is therefore not possible to quantify the emissions associated with the use phase.

# 4 QUANTIFIED GHG INVENTORY

## 4.1 Base year and reporting period

The base year is 2021; the reporting period considered is the calendar year from 01/01/2025 to 31/12/2025.

## 4.2 Monitoring and information management procedures

The Organization has implemented, within its corporate management system (EMS), the procedure "PRSGA02 Carbon Footprint" to define the methods by which it detects any overall and substantial changes in GHG emissions relative to the reference year, to ensure the representativeness of the GHG inventory. The said procedure also refers to existing EMS procedures such as the one relating to surveillance and measurement (PRSGA15) and the one relating to documented information (PRSGA07).

## 4.3 Quantification approaches

The quantification methodology is based on a combination of measurement and calculation using GHG activity data multiplied by the relevant emission or removal factors. There are two calculation phases. The first phase consists of converting activity data into GHG emissions:

**GHG emissions or removals = activity data x emission or removal factor**

the second phase considers the Global Warming Potential (GWP) of each GHG and enables the conversion of GHG emissions or removals into climate impact, identified in tonnes of $CO_2$ ($tCO_2e$):

$$\textbf{emissioni GHG} = \sum_{\textbf{gas}} (\textbf{emissioni}_{\textbf{gas}} \times \textbf{GWP}_{\textbf{gas}})$$

Where the $CO_2$ emissions are expressed in $CO_2$. When emission or removal factors are expressed directly in $CO_2$ equivalent units, GWP equals 1.

The specific activity data and emission or removal factors are indicated in section 4.8. The emission factors used are updated to the latest available references.

## 4.4 Direct GHG emissions and removals

Regarding stationary combustion, the emissions from the combustion of natural gas used in the thermal treatment of waste, in the melting of precious metals and in the production of steam and domestic hot water have been considered[3]. The mobile combustion sources are the organization's own vehicles used both for the transport of procured products and the collection of waste to be treated, and for the delivery of products traded. The direct process-related emissions arise from:

- chemical/physical treatment of waste
- Production of chemical substances
- Chemical laboratory

These emissions consist of fume extractions originating from production processes, which are channelled and released into the atmosphere following any required treatment in abatement systems where necessary to comply with atmospheric pollutant emission limits. The summary table of channelled emissions is presented in the following schedule:

| Emission[4] | Emission source | Height (m) | Flow rate ($Nm^3/h$) | Abatement systems | Building |
|---|---|---|---|---|---|
| E1 | Chemical laboratory | 12 | 6.000 | ✓ | 2 |
| E2 | Incineration | 22,5 | 11.500 | ✓ | 1 |
| E3 | Grinding of incineration bulk material | 9 | 10.000 | ✓ | 1 |
| E4 | Tetrakis production | 15 | 2.000 | ✓ | 2 |
| E5 | Refining and substance production (acid emission) | 15 | 6.000 | ✓ | 2 |
| E6 | Melting furnace | 10 | 9.000 | ✓ | 1 |
| E10 | Refining and substance production (alkaline emission) | 15 | 4.260 | ✓ | 2 |
| E11 | Gold salt preparation lab and CN cabinet extraction | 15 | 3.000 | ✓ | 2 |
| E12 | Acid treatment | 15 | 9.560 | ✓ | 2 |
| E13 | Alkaline treatment | 15 | 16.000 | ✓ | 2 |
| E14 | Melting furnaces in refining and substance production departments | 15 | 2.000 | -- | 2 |
| E15 | Steam generator | 15 | 225 | -- | 2 |
| - | Boiler G1 (150 kWh) | 15 | 195 | -- | 2 |
| - | Boiler G2 (150 kWh) | 15 | 195 | -- | 2 |
| - | Boiler G3 (150 kWh) | 15 | 195 | -- | 2 |
| - | Boiler G4 (65 kWh) | 15 | 78 | -- | 2 |
| E23 | Incineration | 30 | 16.000 | ✓ | 1 |
| E24 | Extraction from hazardous waste operating areas[5] | 12 | 15.000 | ✓ | 1 |

Tabella 7 Channelled emissions schedule

[3] Emission points are: E2, E15, boilers G1÷G5 ed E23.

[4] Emission points E7÷E9 ed E16÷E22 relate to the emergency stacks of the furnaces, therefore, under normal operating conditions, they are absent; emissions E2, E6, E15, and E23 are already considered under the 'stationary combustion' subcategory

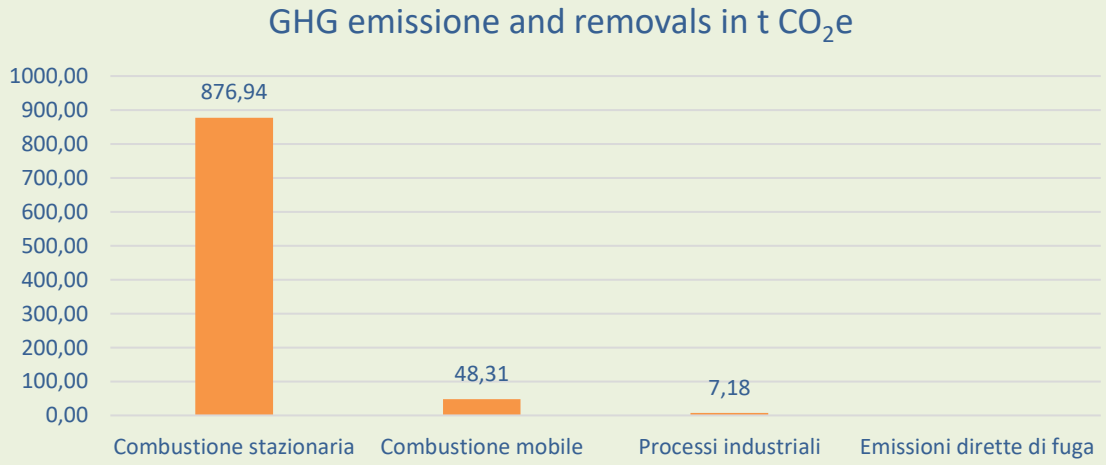
[5] This is a localized extraction system related to a process that does not produce GHGs.

The direct GHG emissions related to processes have been measured. The GHG concentration values detected were multiplied by the maximum flow rate of each relevant extraction point and by the authorised working hours and days, to obtain the mass flows of emissions.

Removals from land use were assessed on a preliminary basis taking into account the area of green spaces and the number and species of trees present within the Plant perimeter. However, the value of these removals proved to be negligible.

| N. | Direct emission sources | GHG emissions and removals in t $CO_2e$ | | | | | |
|---|---|---|---|---|---|---|---|
| | | $CO_2$ | $CH_4$ | $N_2O$ | CFC | Other gases | Total |
| 1 | Stationary combustion | 875,17 | 1,34 | 0,43 | 0,00 | 0,00 | 876,94 |
| 2 | Mobile combustion | 47,68 | 0,01 | 0,62 | 0,00 | 0,00 | 48,31 |
| 3 | Industrial processes | 0,01 | 7,17 | 0,00 | 0,00 | 0,00 | 7,18 |
| 4 | Fugitive direct emissions | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 | **0,00** |
| **Total Category 1** | | **922,87** | **8,52** | **1,05** | **0,00** | **0,00** | **932,43** |

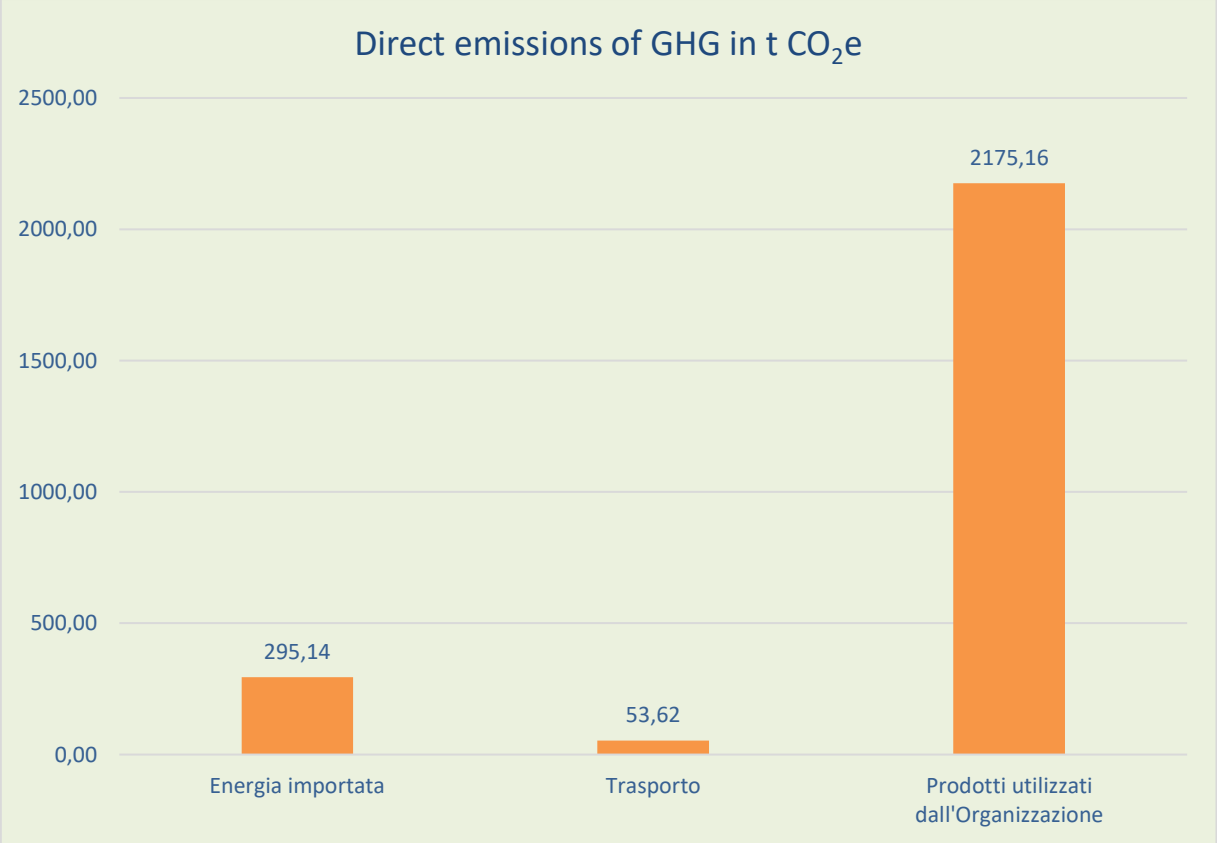
Tabella 8 Quantification of direct GHG emissions and removals using a location-based approach



## 4.5 Indirect GHG emissions

| Subcat. No. | Emission sources | Total (t $CO_2e$) |
|---|---|---|
| **6** | Indirect emissions from imported electricity consumption | 295,14 |
| **Total Category 2– Indirect GHG emissions from imported energy** | | **295,14** |
| **12** | Employee commuting | 53,62 |
| **Total Category 3 – Indirect GHG emissions from transport** | | **53,62** |
| **13a** | Purchased products | 1801,53 |
| **13b** | Fuel production (Diesel) | 11,48 |
| **13c** | Fuel production (Natural gas) | 144,80 |
| **13d** | Production/transport/distribution of purchased electricity | 73,45 |
| **13e** | Network losses of purchased electricity | 27,28 |
| **14** | Capital goods | 111,71 |
| **15** | Disposal of waste produced | 4,90 |
| **Total Category 4 – Indirect GHG emissions associated with products used by the organization** | | **2.175,16** |
| **TOTAL INDIRECT EMISSIONS** | | **2.523,92** |

Tabella 9 Quantification of indirect GHG emissions and removals using a location-based approach



## 4.6 Biogenic emissions

Biogenic emissions were estimated by considering the biofuel content in the diesel purchased for vehicle use, based on the mandatory renewable energy quotas in transport as provided for by Legislative Decree 199/2021 and the Ministerial Decree of 16 March 2023.

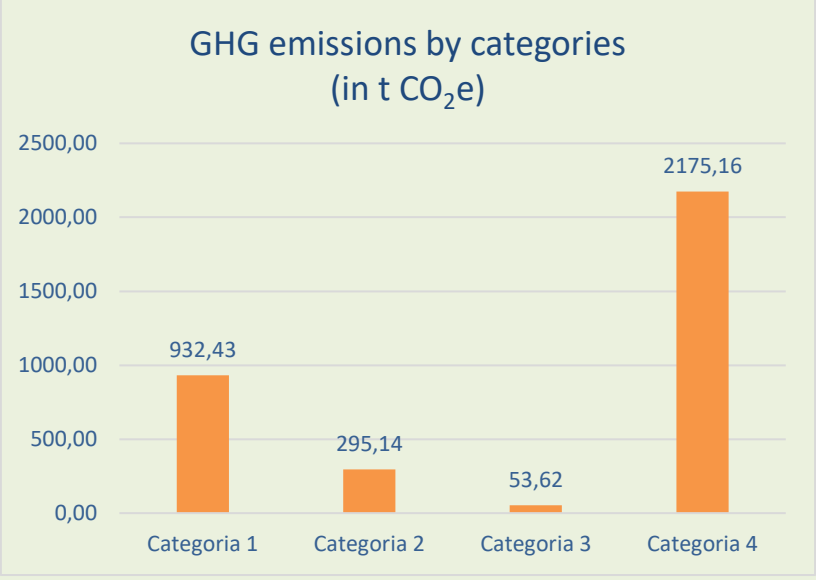
The percentage of this quota is set at 10% for the year 2025.

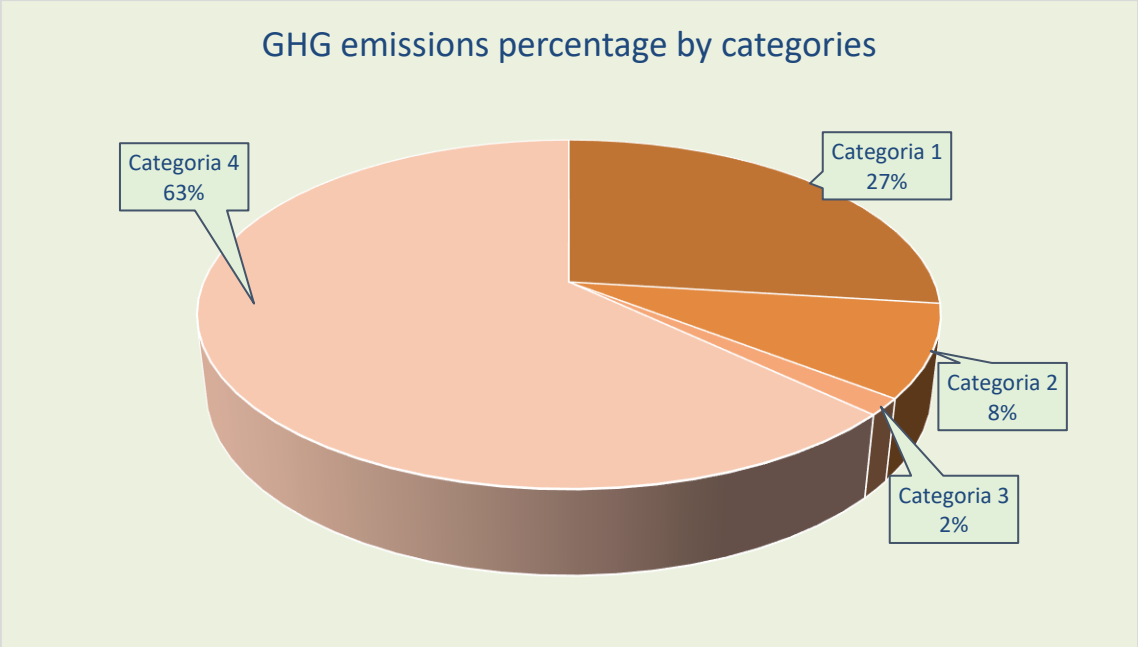
Therefore, biogenic emissions are estimated at 4.83 $tCO_2e$ since the process is metallurgical in nature, any other biogenic components are considered negligible.

## 4.7 Overview

| N. | GHG category | Emissions ($tCO_2e$) |
|---|---|---|
| 1 | Direct emissions and removals | 932,43 |
| 2 | Indirect GHG emissions from imported energy | 295,14 |
| 3 | Indirect GHG emissions from transport | 53,62 |
| 4 | Indirect emissions from products used by the organization | 2175,16 |
| | **TOTALE** | **3456,35** |

Tabella 10 Quantification of GHG emissions and removals using a location-based approach






## 4.8 Comparison with historical data

| N. | GHG category | Emissions in $tCO_2e$ | | | | |
|---|---|---|---|---|---|---|
| | | 2021 | 2022 | 2023 | 2024 | 2025 |
| 1 | Direct emissions and removals | 785,00 | 576,19 | 770,51 | 687,19 | 932,43 |
| 2 | Indirect GHG emissions from imported energy | 309,40 | 316,76 | 325,05 | 355,81 | 295,14 |
| 3 | Indirect GHG emissions from transport | 304,50 | 73,84 | 39,98 | 46,49 | 53,62 |
| 4 | Indirect emissions from products used by the organization | 261,90 | 1.699,69 | 1.982,35 | 1819,32 | 2175,16 |
| 5 | Indirect emissions from the use of the organization's products | 0,00 | 0,00 | 0,00 | 0,00 | 0,00 |
| 6 | Indirect GHG emissions from other sources | 0,00 | 22,73 | 20,14 | 0,00 | 0,00 |
| | **TOTALE** | **1.660,40** | **2.689,20** | **3.138,04** | **2908,81** | **3456,35** |

From the trend in GHG emissions over the years it is evident that the value for the base year is significantly lower. The difference is substantially attributable to category 4, for which, from 2022 onwards, a greater amount of data on the products used by the organization became available, enabling a more accurate estimate of the GHG emissions for this category.

From 2022 onwards, the variation in total GHG emissions depends essentially on the productivity of the organization, net of any adjustments to emission factors.

The GHG emission values relating to category 6 (consisting of network losses in purchased electricity) have been included in category 4 from 2024 onwards.

## 4.9 Global Warming Potential

GWP – 100 years from the 6th IPCC report:

| Gas | GWP-100 (kg $CO_2e$/kg) | Uncertainty (kg $CO_2e$/kg) | Uncertainty (%) |
|---|---|---|---|
| $CO_2$ | 1 | 0 | 0% |
| $N_2O$ | 273 | ±130 | 47.6% |
| $CH_4$ fossil | 29.8 | ±11 | 36.9% |

Tabella 11 Global Warming Potential

## 4.10 Emission or removal factors

The collection of activity data for GHG reporting is carried out systematically through the application of the organization's EMS measurement and monitoring procedure.

| Emission or removal sources | unit | Emission or removal factor | Source | Calculation method |
|---|---|---|---|---|
| **Electricity produced from hydroelectric plant** | kg $CO_2e$/kWh | 0.0142 (upstream) | Ecoinvent v. 3.9.1 | kWh of electricity multiplied by the emission factor. |
| **Photovoltaic system (construction and installation)** | kg $CO_2e$/kWh | 0.023 (upstream) | | |
| **ITALY electricity consumption** | kg $CO_2e$/kWh | 0.2005 | DB ISPRA[6] | |
| **Network losses** | kg $CO_2e$/kWh | 0.01853 | DEFRA 2025[7] | |
| **Upstream electricity** | kg $CO_2e$/kWh | 0.0499 | DEFRA 2024 | |
| **Diesel (average biofuel blend)** | kg $CO_2e$/l | 2.57082 (combust.)<br>0.61101 (upstream) | DEFRA 2025 | Litres of fuel multiplied by the emission factor |
| **Natural gas** | kg $CO_2e$/kWh | 0.20270 (comb.)<br>0.03347 (upstream) | DEFRA 2025 | Purchased Smc of $CH_4$ acquistati converted[8] in kWh and multiplied by the emission factor |
| **Water (water consumption)** | kg $CO_2e/m^3$ | 0.19130 | DEFRA 2025 | Cubic metres of consumed water multiplied by the emission factor |
| **Zinco** | kg $CO_2e$/t | 2790 | Ecoinvent v. 3.9.1 | Tonnes of purchased material multiplied by the emission factor |
| **Rutenio** | kg $CO_2e$/t | 20400000 | | |
| **Gold from recycled material** | kg $CO_2e$/t | 8600 | Gens aurea CFP report 2021 | |
| **Silver from recycled material** | kg $CO_2e$/t | 14500 | GHG in Jewelry Industry: A Case Study of Silver Flat Ring | |
| **Platinum (secondary production)** | kg $CO_2e$/t | 639000 | International Platinum Group Metals Association (IPA) The Life Cycle Assessment of Platinum Group Metals (PGMs) – Update with 2022 Production Data[9] | |
| **Palladium (secondary production)** | kg $CO_2e$/t | 732000 | | |
| **Rhodium (secondary production)** | kg $CO_2e$/t | 819000 | | |
| **Printer paper** | kg $CO_2e$/t | 3170 | Ecoinvent v. 3.9.1 | |
| **Cardboard** | kg $CO_2e$/t | 3090 | | |
| **Nitric acid** | kg $CO_2e$/t | 1770 | | |
| **Hydrochloric acid** | kg $CO_2e$/t | 770 | | |
| **Ammonia** | kg $CO_2e$/t | 2130 | | |
| **Sodium carbonate** | kg $CO_2e$/t | 420 | | |
| **Ethyl alcohol** | kg $CO_2e$/t | 1260 | | |
| **Hydrogen peroxide** | kg $CO_2e$/t | 1130 | | |
| **Boric acid** | kg $CO_2e$/t | 994 | | |

[6] Emission factors for electricity production and consumption in Italy (2023 update and 2024 preliminary estimates). Fuel emission factors developed by ISPRA. Sheet 19.

[7] UK Government GHG Conversion Factors for Company Reporting year 2025: (https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2025)

[8] 1 Smc = 1.0549 Nmc. 1Nmc = 0.0953 kWh

[9] https://ipa-news.com/index/sustainability/environment.html

| Emission or removal sources | unit | Emission or removal factor | Source | Calculation method |
|---|---|---|---|---|
| **Hydrofluoric acid** | kg $CO_2e/t$ | 1260 | | |
| **Borates** | kg $CO_2e/t$ | 1940 | | |
| **Silicone** | kg $CO_2e/t$ | 3040 | | |
| **Formaldehyde** | kg $CO_2e/t$ | 995 | | |
| **Sodium hypochlorite in 15% aqueous solution** | kg $CO_2e/t$ | 1950 | | |
| **Sulphuric acid** | kg $CO_2e/t$ | 211 | | |
| **Formic acid** | kg $CO_2e/t$ | 2940 | | |
| **Caustic soda** | kg $CO_2e/t$ | 435 | | |
| **Activated carbon** | kg $CO_2e/t$ | 1050 | www.greenproduct.go.kr[10] | |
| **Methyl tert-Butyl Ether (MTBE) RER production** | kg $CO_2e/t$ | 2244 | Ecoinvent v. 3.10 | |
| **Caustic potash** | kg $CO_2e/t$ | 2000 | Ecoinvent v. 3.9.1 | |
| **Sodium chloride** | kg $CO_2e/t$ | 214 | | |
| **Oxygen** | kg $CO_2e/t$ | 514 | | |
| **Nitrogen** | kg $CO_2e/t$ | 283 | | |
| **Hydrogen** | kg $CO_2e/t$ | 1704 | | |
| **Argon** | kg $CO_2e/t$ | 2301.62 | | |
| **Sodium cyanide** | kg $CO_2e/t$ | 4750 | | |
| **Sodium metabisulphite** | kg $CO_2e/t$ | 3554.76 | | |
| **Sodium bicarbonate** | kg $CO_2e/t$ | 609.07 | | |
| **DMSO** | kg $CO_2e/t$ | 1288.37 | | |
| **Hydrazine** | kg $CO_2e/t$ | 12066.80 | | |
| **Sodium bisulphate** | kg $CO_2e/t$ | 738 | | |
| **Nitrobenzene** | kg $CO_2e/t$ | 2080 | | |
| **Slaked lime** | kg $CO_2e/t$ | 916 | | |
| **Lubricating oil** | kg $CO_2e/t$ | 1520 | | |
| **Sodium nitrate** | kg $CO_2e/t$ | 4121 | | |
| **Sodium sulphide** | kg $CO_2e/t$ | 2939.60 | | |
| **Iron (packaging)** | kg $CO_2e/t$ | 1620 | | |
| **Plastic (packaging)** | kg $CO_2e/t$ | 2180 | | |
| **Commuting** | kg $CO_2e$ / autoveicolo.km | 0.17304 | DEFRA 2025 | Home-to-work distance multiplied by two (round trip) for the number of working days in a year |
| **Visitors** | kg $CO_2e$ / autoveicolo.km | 0.17304 | | Number of visitors per year multiplied by the number of daily trips (2) and the average km (10) |
| **Business travel by car** | kg $CO_2e$ / autoveicolo.km | 0.17304 | | Total km travelled (round trip) multiplied by the emission factor |
| **Business travel by plane** | kg $CO_2e$ / passeggero.km | 0.10916 | | Total km travelled (round trip) multiplied by the number of passengers and the emission factor |
| **Waste produced for recovery** | kg $CO_2e/t$ | 4.68568 | | Tonnes of waste multiplied by the emission factor |
| **Waste disposal Industrial wastewater treatment (IT)** | kg $CO_2e/t$ | 3 | Clim'foot DB | |

[10] The full link to the database is: https://www.greenproduct.go.kr/epd/eng/lci/lciCo200.do

| Emission or removal sources | unit | Emission or removal factor | Source | Calculation method |
|---|---|---|---|---|
| **Offices (concrete)** | kg $CO_2$e/mq | 357 | Ecoinvent v. 3.9.1 | Building surface areas in m² multiplied by the emission factor divided by the number of depreciation years |
| **Industrial buildings (concrete)** | kg $CO_2$e/mq | 409 | | |
| **Vehicles** | kg $CO_2$e/t | 5560 | | Vehicle weight multiplied by the emission factor divided by the number of depreciation years |
| **Machinery and instrumentation** | t $CO_2$e/k€ | 110 | Clim'foot DB | Monetary value multiplied by the emission factor divided by the number of depreciation years |
| **Flat screens** | kg $CO_2$e/unit | 347 | Ecoinvent v. 3.9.1 | IT equipment units multiplied by the emission factor divided by the number of depreciation years |
| **PC** | kg $CO_2$e/unit | 222 | | |
| **Server** | kg $CO_2$e/unit | 513 | Clim'foot DB | |
| **Printers** | kg $CO_2$e/unit | 61,1 | Ecoinvent v. 3.9.1 | |
| **Photocopiers** | kg $CO_2$e/unit | 2940 | Clim'foot DB | |
| **Fax** | kg $CO_2$e/unit | 1470 | Clim'foot DB | |
| **LIM** | kg $CO_2$e/unit | 347 | Clim'foot DB | |

Tabella 12 Emission or removal coefficients

## 4.11 Uncertainty

The aggregate uncertainty is calculated according to the methodology indicated in the "IPCC Guidelines for National Greenhouse Gas Inventories 2006".

Where uncertain quantities must be combined by multiplication, the standard deviation of the sum will be the square root of the sum of the squares of the standard deviations of the quantities being added, with the standard deviations all expressed as coefficients of variation, which are the ratios of the standard deviations to the appropriate mean values.

For each emission/removal source, account must be taken of the uncertainty in the activity data (ADu) and the uncertainty in the emission factor (EFu). In this case, being a product of two factors, the aggregate uncertainty ($U_{TOT}$) is calculated using the formula:

$$U_{TOT} = \sqrt{EFu^2 + ADu^2}$$

When uncertain quantities must be combined by addition or subtraction, the standard deviation of the sum will be the square root of the sum of the squares of the standard deviations of the quantities added, with the standard deviations all expressed in absolute terms. The uncertainty due to the sum of the contributions of the various categories and subcategories is therefore calculated using the formula:

$$U_{TOT} = \frac{\sqrt{\sum_{i=1}^{n}(U_i \cdot x_i)^2}}{\left|\sum_{i=1}^{n} x_i\right|}$$

Where:

$U_{TOT}$ = The percentage uncertainty in the sum of the quantities (half of the 95% confidence interval) divided by the total (i.e. mean) and expressed as a percentage. This term "uncertainty" is therefore based on the 95% confidence interval;

$X_i$ and $U_i$ = the uncertain quantities and the percentage uncertainties associated with them, respectively.

GHG emissions related to the purchase of precious metals account for over 60%. The quantities of precious metals purchased, given their value, are subject to very precise measurement using periodically calibrated scales. The accuracy of these values is further ensured by the need to comply with obligations arising from the maintenance of tax loading and unloading registers.

Given that, both for emission factors and activity data, we are dealing with qualitative-quantitative uncertainty values, the calculations, which are fully reported in annex 1, have yielded a weighted average uncertainty across the values of each emission category of 2.9%.

# 5 GHG REDUCTION INITIATIVES AND INTERNAL PERFORMANCE TRACKING

Since 2022, the organization uses only electricity produced from renewable sources, both through the purchase of "green" electricity with certificates of guarantee of origin issued by the GSE, and through its own photovoltaic system.

**As soon as the 2025 electricity guarantee certificates are available, it will be possible to confirm or update the inventory using a market-based approach as well.**

By virtue of these reduction initiatives, indirect emissions from imported electricity can be quantified using a market-based approach, in accordance with point E.2.2 of Appendix E of the standard UNI EN ISO 14064-1:2019.

| N. | GHG category (market-based) | Emissions ($tCO_2e$) |
|---|---|---|
| 1 | Direct emissions and removals | 932,43 |
| 3 | Indirect GHG emissions from transport | 53,62 |
| 4 | Indirect emissions from products used by the organization | 2.122,60 |
| | **TOTALE** | **3.108,66** |

Tabella 13 Quantification of GHG emissions and removals using a market-based approach

The slight difference between the total $CO_2e$ emissions relating to cat. 4 calculated using the location-based approach (see table 10) and the total cat. 4 calculated using the market-based approach is due to the difference in the emission factor for upstream purchased electricity.

The adoption of reduction initiatives by the Organization will make it possible to avoid the emission of 348 tonnes of $CO_2e$ equal to 10.06%of the Organization's total emissions.

# 6 OFFSETS

The Organization has fully offset the GHG emissions of 2,501 t $CO_2eq$ (calculated with a market-based approach) of the Via Majorana 101 Plant in Sesto Fiorentino for the year 2024, through the purchase from SCB Environmental Markets SA of certified carbon credits Verra , (VCU Serial number 12841-453397923-453400423-VCS-VCU-576-VER-UY-1-1289-08012015-31122015-0) di 2.501 ton $CO_2eq$ issued through the standard Verified Carbon Standard **(VCS)**, which certifies greenhouse gas reduction or removal projects (forests, renewables, energy efficiency), ensuring quality and transparency for voluntary emission offsets.

The purpose of the project we have joined is to generate clean, renewable electricity through the construction and management of a 50 MW wind farm, located in the department of Flores in the south-eastern region of Uruguay.

The energy generated by the project is fed into Uruguay's national electricity grid through a substation annexed to the park, interconnected to the Ute Cerro Colorado (CCO) substation, which in turn is connected via a 150 kV high-voltage cable to the Trinidad Ute station. The plant will have an expected operational life of 20 years and will remove from the national electricity grid an overall total of 191,854 MWh/year, generating on average an emission reduction of 119,427 $tCO_2$ per year.


The company's intention is to repeat the offsetting of its GHG emissions also for the year 2025.

# 7 REFERENCE DOCUMENTS

- Calculation file: "CFO_SESTO_101_2025_rev_1.xlsx"
- Certificate of Verified Carbon Unit (VCU) Retirement s.n.: 12841-453397923-453400423-VCS-VCU-576-VER-UY-1-1289-08012015-31122015-0