APLIMET Time for emotions

GHG Emissions Inventory for APLIMET. Fiscal year 2024

EUROPEAN SUSTAINABILITY CONSULTING

ACCIÓ Catalonia Trade & Investment
Generalitat de Catalunya
P persona assessora acreditada
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Generalitat de Catalunya

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1. Introduction

Aplimet, located in *Montcada i Reixach*, is an industrial company dedicated to the manufacture of beer and water dispensers. Founded 20 years ago, in just over two decades, it has grown and evolved to become a reference in the design and manufacture of beer and water pumps of the highest quality for the national and international brewing industry.

Its beer and water dispensers connect with their consumers thanks to their innovative designs, the technology used and a premium level of customization and raw materials. Open to innovation and growth at an international level, they are synonymous with experience, quality and design.

Its history dates back to the year 2,000 when it evolved from forging and blacksmithing to the production of customised dispensers for the brewing industry.

The company has worked with large manufacturers, developing exclusive pumps that have set trends in the market. In addition, it maintains an international expansion strategy, collaborating with distributors in European countries such as Sweden, Norway, Denmark and France.

The key factors of Aplimet's production process are characterized by the integration of advanced technologies to improve flexibility and productivity, adapting to the specific requirements of each customer.

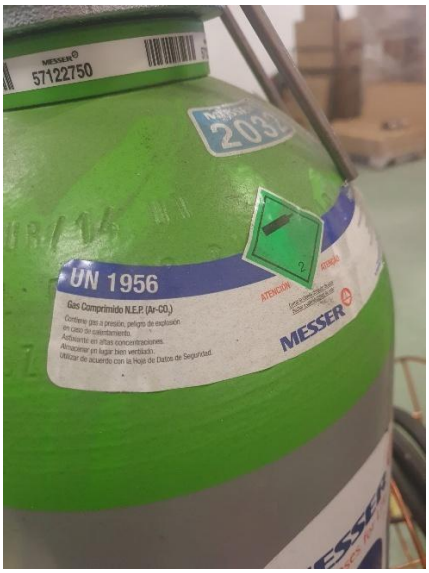
Optimal management of the supply chain and the inventory of raw materials are key to maintaining healthy economic activity (Cash flow).

Main aspects of Aplimet's production process

- Design and customization: Aplimet works closely with beer brands to create unique dispensers that reinforce their visual identity.
- Digitalisation and industry 4.0: The company has implemented digital tools to optimise production management, including management software and the use of professional tablets.
- Advanced manufacturing: It uses techniques such as 3D printing to streamline prototype development and ensure product quality.
- Integrated value chain: Digitalization allows for better production planning and management, reducing costs and improving efficiency.

The production process of its products comes from the acquisition of raw materials in any format (raw, semi-transformed or already transformed in the form of the different pieces), which is then done the assembly of the final column integrating the different parts (metal, lamps, plastics, wooden elements, etc.) according to the design and ending as the final sales product.

In this assembly process, the acquired goods are transformed, giving them their final shape and design. It must be considered that in the assembly process, welding processes are carried out on the different metal elements that will make up the final column, with which we will have, although not relevant, process emissions within scope 1.



Subsequently, the assembly of the rest of the elements that will make up the column through which the fluids will circulate is carried out, approaching at each production stage the appearance of the final product that we see in the HORECA sector (hotels, restaurants / bars and cafeterias) mainly.

Once assembled, the columns are distributed from the Montcada i Reixac plant to the end customer both nationally and internationally.

1.1 Sector Context

The beer sector has a significant economic impact within the food industry and on the national GDP. According to the latest report by *Cerveceros de España*, beer represents an important part of the agri-food sector and contributes directly and indirectly to the country's economy.

- Beer is one of the most consumed beverages in Spain, with a consumption of 56 liters per capita per year.
- The brewing sector has a strong link with agriculture, as 90% of the oats used for its production are of national origin.
- Beer generates an economic impact of more than 7,000 million euros in Spain.
- The sector employs more than 400,000 people, especially in the hotel and catering industry.

Consumption patterns in Spain:

Weekly distribution of alcoholic beverage consumption according to the type of beverage by sex. Population aged 15 and over who consume alcoholic beverages one or more days a week.

	Beer with alcohol			
	Total	Only on weekends	Only on weekdays	Both weekends and weekdays
Both sexes	100	57,46	1,86	40,68
Men	100	51,57	2,32	46
Women	100	69,25	0,93	29,81

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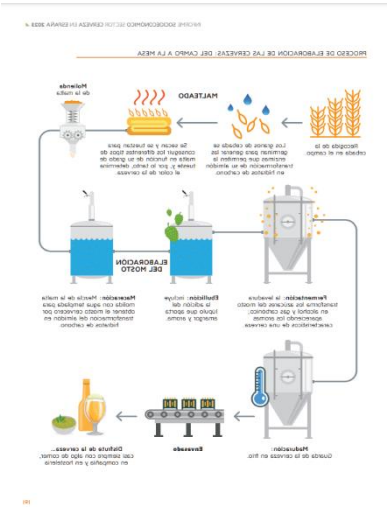
Evolution of the beer sector in Spain and Europe

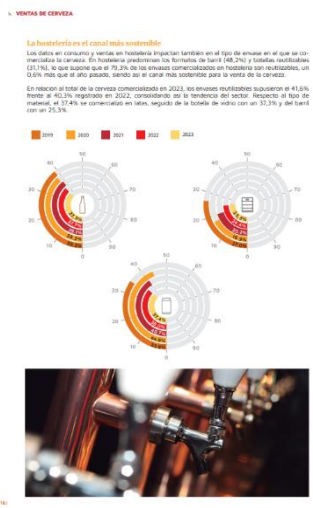
- Sustained growth until 2020: Beer production in Spain reached 41.3 million hectoliters in 2023, maintaining the country as the second largest producer in Europe, only behind Germany.
- Impact of COVID-19: The pandemic caused a 3.5% drop in beer consumption in Spain in 2023, particularly affecting the hospitality channel.
- Post-pandemic recovery: Despite the recovery of the sector, beer sales in the EU fell by 3% in 2023 compared to 2022, affected by inflation and rising production costs.

- Exports: Spanish beer exports declined by 2.8% in 2023, although they have grown by more than 200% in the last decade.

Impact on beer spout manufacturers

- Reduction in demand: The drop in beer consumption in the hospitality industry has affected the demand for pumps and dispensers, as many establishments have reduced investments in equipment.
- Rising costs: Raw material prices and logistics have impacted dispenser production, causing manufacturers to adjust prices and strategies.
- Trend towards innovation: Despite the difficulties, the sector has opted for digitalization and sustainability in the manufacture of pumps, with more efficient technologies and recyclable materials.





Information extracted from [the Socioeconomic Report of the Beer Sector in Spain in 2023](), published by the Ministry of Agriculture, Fisheries and Food.

2. Purpose of the report

The objective of the study is to calculate APLIMET's Greenhouse Gas (GHG) inventory for the 2024 financial year in order to quantify its corporate carbon footprint and establish a decarbonization strategy that allows it to achieve the emission neutrality objectives that the company itself sets internally or to achieve the objectives at a global level, as is the case of the SBTi (Science-Based Targets initiative). which ensures that companies contribute to limiting global warming to 1.5ºC.

This plan would include specific measures such as the optimization of processes, the use of renewable energies, the improvement of energy efficiency and the implementation of clean technologies as the main levers to achieve climate neutrality that will be defined ad-hoc based on the results obtained in the GHG inventory.

So, with this exercise we will achieve a four-fold objective:

- The systematization of the calculation and management of emissions of APLIMET's corporate footprint and the automation of this task.
- The disclosure of information relating to the most relevant emission categories and their weighting with respect to the total emissions of APLIMET's activity.
- The definition of a strategic decarbonization/mitigation plan that ensures compliance with climate neutrality objectives.
- The availability of information to be able to transmit it to the different stakeholders to advance more quickly in the sustainable development of activities along the value chain.

3. Management of the emissions inventory in APLIMET's activity

3.1 Scope of emissions calculation

This report contains the greenhouse gas (GHG) inventory of the APLIMET organization for the period corresponding to the year 2024.

The objective of this report is to disseminate the inventory of greenhouse gas (GHG) emissions, paying great attention to the international principles regarding its accounting and management, called "TARCC" for its acronym in English, which refer to transparency, accuracy, relevance, completeness and consistency.

This report is aimed at all APLIMET stakeholders and strategically those related to the management of the GHG emissions inventory, its structure and associated definitions.

This report:

- Covers the corporate carbon footprint of: APLIMET.

- It has been prepared in accordance with the requirements of the international standard GHG Protocol.

- It strives to use primary and local data whenever possible, but especially around all major emission sources. When primary data is not available, a consistent and conservative approach to the calculation of secondary data is applied.

- Excludes reports on GHG absorptions and offsets

- It includes the strategic part of the mitigation plan towards climate neutrality aligned with the international standard SBTi.

The reporting period for the emissions inventory covered in this document corresponds to 2024. The period of the next iteration of this footprint is expected to be the same length of one year, starting on the first day following this reporting period.

Any deviation from this will be mentioned in the communication at the time of publication.

You can find more details about the information framework applied in the sections Methodology (Section 3.2) and Details of the calculation methodology (Section 3.6).

About APLIMET

Contact information

Company details	
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3.2 Methodology

This assessment and calculation of the GHG emissions inventory complies with the Greenhouse Gas Protocol, a globally recognized standard jointly developed by the

World Resources Institute and the World Business Council for Sustainable Development.

Five fundamental principles guide the methodology that the GHG Protocol proposes:

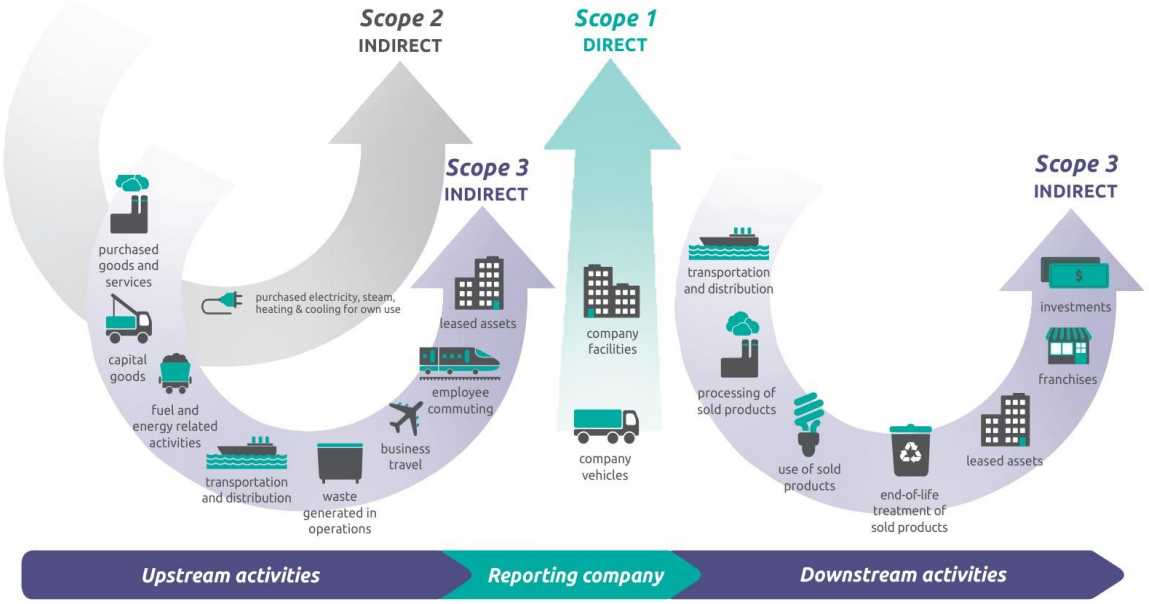
- Transparency: All data collected is reported in a clear and consistent manner, preferably through a precise audit scheme. All hypotheses about methods, approximations and emission factors are well documented.
- Accuracy: The quantification of GHG emissions is without systematic overestimation or underestimation, trying to reduce uncertainties as much as possible whenever possible.
- Relevance: GHG data collection accurately records and presents all relevant emissions from the organization.
- Comprehensiveness: Include all relevant GHG emissions and removals. Any exclusion must be justified and clearly disclosed.
- Consistency: Any changes in data sources, calculation limits, or emission factors should always be reported.

Following the requirements of the GHG Protocol standard, the greenhouse gas inventory includes seven key GHGs covered by the UNFCCC/Kyoto Protocol: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), nitrogen trifluoride (NF_3), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs).

The GHG Protocol classifies emissions into 3 scopes and 21 categories

- Scope 1: Direct GHG emissions and removals from sources owned or controlled by the organization
- Scope 2: Indirect GHG emissions from purchased energy
- Scope 3: Other indirect GHG emissions beyond those covered by scope 2 that occur in other parts of the value chain, both upstream and downstream.

These areas are subdivided into different categories of activities. Scope 1 encompasses 4 categories, Scope 2 encompasses 2 categories, and Scope 3 emissions are divided into 15 categories, upstream and downstream. See the figure below for a visual summary of this classification along the value chain.



Overview of the areas and categories of activity of the Greenhouse Gas Protocol along the value chain. Adapted from the Greenhouse Gas Protocol Corporate Value Chain Accounting and Reporting Standard.

To assess the climate impact of emissions, GHGs are assessed using the IPCC's global warming potential (GWP) values over a 100-year time horizon. For more detailed information on the methodologies and calculations used in this report, see the details of the calculation methodology in section 3.6.

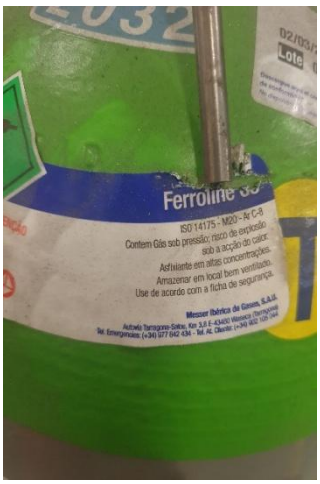
In the following sections, activity categories can be customized in terms of nomenclature, order, and additional deduction to improve transparency and comparability within the organization; in accordance with the accounting principles of the GHG Protocol. However, to ensure standardization and analysis across industries, each activity category remains directly linked to the GHG Protocol standard's GHG inventory categories.

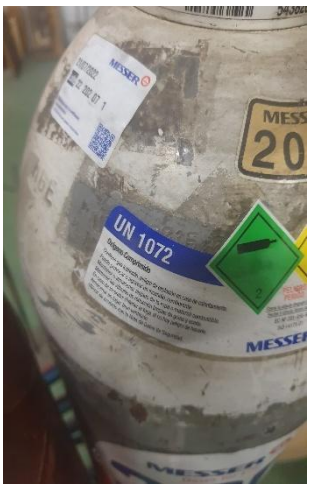
Detailed descriptions of each category of activity and their corresponding references to the GHG Protocol can be found in section 3.4.

Section 3.6 contains a consolidated inventory within the standardized reporting framework.

3.2.1 Calculation of emissions in the welding process

Within scope 1 categories, specifically regarding process emissions, we will have to calculate the CO2 released in the welding process. In this section we want to explain specifically how the kgs of carbon dioxide that have been generated have been calculated based on the volume of gas consumed by welding processes in the assembly of the columns.





The gases used by APLIMET in this welding process are the following: Acetylene UN1001, *Ferroline C6X1*, Oxygen UN1072 and Argon UN1006, *Inoxline C2.*

Of all these, Argon UN1006 and Oxygen UN1072 do not have CO_2 in their composition, nor do they emit it during the process. For the rest, we indicate below how we came to calculate emissions.

a. Acetylene

The complete combustion reaction of acetylene occurs when there is enough oxygen outside releasing carbon dioxide and water vapor, in addition to large amounts of heat made so it is used in the oxyacetylene welding process.

The consumption of acetylene during 2024 in the welding processes by Aplimet was 3 B50 cylinders of 8 kilograms each. From here we can extract the kilograms of CO2 related to the welding process.

$$C_2H_4 + \frac{5}{2}\,O_2 \;\gg\gg\gg\; 2\,CO_2 + 2\,H_2O$$

$$8\ kg\ Acetilene \times \frac{1000g\ Acetilene}{1\ kg\ Acetilene} \times \frac{1\ mole\ Acetilene}{26\ g\ Acetilene} \times \frac{2\ mole\ CO_2}{1\ mole\ Acetilene} \times \frac{0{,}044\ kg\ CO_2}{1\ mol\ CO_2} = 27\ kg\ CO_2$$

If there is not enough oxygen, this reaction could be toxic due to the generation of carbon monoxide (incomplete combustion).

From the amount of acetylene and the stoichiometry of the reaction we find the mass of carbon dioxide consumed in the welding process that we multiply by the CO_2 emission factor which in this case is direct (1 Kg CO_2e / Kg of CO_2).

b. *Ferroline c6X1*

From the technical data sheet of the *Ferroline C6X1* we extract the composition of the gas, which in this case is 93% Argon and carbon dioxide at 6% by volume.


Ferroline C6 X1 Ar / O_2 / CO_2

EN ISO 14175: M24-ArCO-6/1

Marcado
Clasificación ADR — UN 1956 GAS COMPRIMIDO, N.E.P.(ARGON, DIOXIDO DE CARBONO), 2.2,(E)
Color de la botella — Color de la ojiva: verde claro
Propiedades principales — gas comprimido, más pesado que el aire, incoloro, inodoro
Símbolos de riesgo
Propiedades físicas
Densidad del gas a 0ºC y 1,013 bar — 1,78 kg/m³
Densidad relativa al aire — 1,338
Para más información sobre seguridad consulte la Ficha de Datos de Seguridad ESP-CO2-02-AR-06

Válvulas / Reguladores
Conexión de válvula — 200 bar: Tipo C; 300 bar: ISO 5145 Nr. 1; W 30 x 2
Reguladores recomendados — Spectrotec Constant 2000

Especificaciones

		Ferroline C6 X1	
Composición			
Ar	=	93	Vol.-%
CO_2	=	6	Vol.-%
O_2	=	1	Vol.-%
Impurezas			
H_2O	≤	80	ppm
Contenido de la botella			
B 20 200 bar		4,4	m³
B 20 300 bar		6,6	m³
B 50 200 bar		11,0	m³
B 50 300 bar		15,7	m³
B 50^S 300 bar		126,0	m³
B 50^18 300 bar		283,4	m³
MegaPack4 300 bar Duplex		188,9	m³
MegaPack C6 300 bar Duplex		283,4	m³

Especificaciones

		Ferroline C6 X1	
Composición			
Ar	=	93	Vol.-%
CO_2	=	6	Vol.-%
O_2	=	1	Vol.-%

The consumption that Aplimet has had in terms of the welding process under *Ferroline C6X1* is 2 cylinders of B50 at 300 bars during the 2024 financial year. From here we can extract the kilograms of CO2 emitted during the process:

$$2\ gas\ cylinder\ \times \frac{15{,}7\ m^3 gas}{1\ gas\ cylinder} \times \frac{6\ m^3\ CO_2}{100\ m^3} = 1{,}884\ m^3\ CO_2$$

$$kg\ CO_2 = \rho \times V = 1{,}976\ \frac{kg}{m^3} \times 1{,}884\ m^3\ CO_2 = 3{,}72\ kg\ CO_2$$

c. *Inoxline C2*

Analogous to the previous example, we will now calculate the kg of carbon dioxide used in welding with *Inoxline C2*. In this case we saw that for this product the carbon dioxide composition is 2.5% by volume.


Inoxline C2 Ar/CO_2

DIN EN ISO 14175: M12-ArC-2

Marcado

Clasificación ADR — UN 1956 GAS COMPRIMIDO, N.E.P.(ARGÓN, DIOXIDO DE CARBONO), 2.2 (5)

Color de la botella — Color de la ojiva: verde claro

Propiedades principales — gas comprimido, más pesado que el aire, incoloro, inodoro

Símbolos de riesgo

Propiedades físicas

Densidad del gas a 0°C y 1,013 bar — 1,79 kg/m³

Densidad relativa al aire — 1,38

Para más información sobre seguridad consulte la Ficha de Datos de Seguridad ESP-CO2-AR-05

Válvulas / Reguladores

Conexión de válvula — 200 bar: Tipo C; 300 bar: ISO 5145 No. 1; W 30 x 2

Reguladores recomendados — Spectrotec Constant 2000

Especificaciones		Inoxline C2	
Composición			
Ar	=	97,5	Vol.-%
CO_2	=	2,5	Vol.-%
Impurezas			
O_2	≤	10	ppm
H_2O	≤	10	ppm
Contenido de la botella			
B 20 300 bar		6,2	m³
B 50 200 bar		10,8	m³
B 50 300 bar		15,4	m³
B 50*8 200 bar		86,9	m³
B 50*8 300 bar		123,4	m³
B 50*12 200 bar		129,8	m³
B 50*12 300 bar		185,4	m³
B 50*16 200 bar		194,5	m³
B 50*16 300 bar		277,6	m³

Inoxline C2			
Composición			
Ar	=	97,5	Vol.-%
CO_2	=	2,5	Vol.-%

The annual consumption that Aplimet has made of the *Inoxline C2 product* is 2 cylinders of type B50 at 300 bars during the year 2024. As indicated in the technical sheet, each cylinder contains 15.4 m3 of gas, and from there we can find the kilograms of CO2 emitted:

$$2\ \text{bonbonas}\ \times \frac{15{,}4\ \text{m}^3\ \text{gas}}{1\ \text{bombona}} \times \frac{2{,}5\ \text{m}^3\ \text{CO}_2}{100\ \text{m}^3\ \text{gas}} = 0{,}77\ \text{m}^3\ \text{CO}_2$$

$$kg\ \text{CO}_2 = \rho \times \text{V} = 1{,}976\ \frac{\text{kg}}{\text{m}^3} \times 0{,}77\ \text{m}^3\ \text{CO}_2 = 1{,}52\ \text{kg}\ \text{CO}_2$$

3.3 Reporting limits

The reporting limits for this report were established using the operational control approach to consolidation.

Under this approach, the organization accounts for 100% of the GHG emissions of operations and the value chain over which it has operational control. Operational control is applied when the organization or one of its subsidiaries has full authority to introduce and implement its operational policies in the economic activity carried out.

This consolidation approach applies to all units and subunits.

The organizational structure of the reporting organization is listed below. This report contains the footprint of the entire organization: APLIMET

3.4 Operational limits

In the following tables you can find details about the description of the activity categories, as well as their justification for including them according to the GHG Protocol.

Scope 1		
Mobile Sources	Description	Emissions derived from the combustion of fuels in mobile combustion sources owned or controlled by the company
	Reason for Including	Directly related to the organization's operations. It is intended to record that there are no mobile sources in the organization in the year of study.
	Reference to the GHG Protocol	1.2 Mobile sources
Fugitive Emissions	Description	Emissions derived from the leakage of refrigerants or the direct release of greenhouse gases
	Reason for Including	An important indicator of possible leaks or losses in the system. They have not been detected in the year studied
	Reference to the GHG Protocol	1.4 Emissions fugitives
Stationary Combustion	Description	Emissions derived from the combustion of fuels in stationary sources
	Reason for Including	Directly related to the organization's operations. We want to record that there are no fixed sources in the organization of the study period
	Reference to the GHG Protocol	1.1 Fixed sources
Process emissions	Description	Emissions derived from the release of greenhouse gases in production processes
	Reason for Including	Directly related to the organization’s production process
	Reference to the GHG Protocol	1.3 Process emissions

Scope 2		
Electricity	Description	Emissions derived from electricity generation, acquired by the company
	Reason for Including	Main source of indirect emissions
	Reference to the GHG Protocol	2.1 Purchased electricity

Scope 3 – Upstream		
Goods and services purchased	Description	Emissions embedded in goods and services purchased
	Reason for Including	Important overview of the main sources of indirect emissions in the Supply Chain
	Reference to the GHG Protocol	3.1 Goods and services purchased
Waste generated during operations	Description	Emissions related to the disposal and treatment of waste generated in operations
	Reason for Including	Important indicator of the impact of waste streams
	Reference to the GHG Protocol	3.5 Waste generated in operations
Upstream Transportation	Description	Emissions related to the transport of goods upstream of the production process or any transport acquired by the company
	Reason for Including	It reflects the indirect carbon footprint of logistics in the value chain
	Reference to the GHG Protocol	3.4 Upstream transport
Capital goods	Description	Emissions embedded in capital goods such as buildings, cars, ICT and machinery
	Reason for Including	Important overview of the main sources of indirect emissions of long-term assets. The aim is to record that there have been no investments in 2024
	Reference to the GHG Protocol	3.2 Capital goods
Business travel	Description	Emissions related to the transport of workers for business-related activities
	Reason for Including	Important for understanding and managing travel-related emissions. It is included given the relevance in the organization's operations
	Reference to the GHG Protocol	3.6 Business travel
Employee Commuting	Description	Emissions related to employee travel in vehicles not controlled by the company. Important for understanding and managing employee emissions
	Reason for Including	The influence of the emission source is limited but the data are available
	Reference category	3.7 Workers' travel

Scope 3 – Downstream		
Downstream Transportation	Description	Emissions related to the transport of goods downstream of the production process not paid for by the company
	Reason for Including	It reflects the indirect carbon footprint of logistics that occurs downstream in the value chain
	Reference to the GHG Protocol	3.9 Downstream transport and distribution

In the following tables details about the categories of activity that were excluded from this report can be found; its description and the justification for the exclusion according to the GHG Protocol standard

Excluded activities		
Steam, heat, cooling	Description	Emissions derived from the generation of steam, heating or cooling, acquired by the company
	Justification for excluding	Emission category not applicable
	Reference category	2.2 Steam, heating, cooling, compressed air purchased
Assets leased as a lessee	Description	Emissions related to the exploitation of leased assets by the reporting company
	Justification for excluding	It reflects the indirect emissions of the position as a lessee in the consolidation approach applied. Excluded for non-existent
	Reference to the GHG Protocol	3.8 Upstream leased assets (as a lessee)
Product Usage	Description	Emissions related to the energy use of the product during its expected useful life
	Justification for excluding	The influence of the organization on the source of emission is too limited
	Reference category	3.11 Use of products
Investments	Description	Emissions related to the operation of investments
	Justification for excluding	Emissions are estimated to be negligible, and the available data are of poor quality
	Reference category	3.15 Investments
Product Processing	Description	Emissions related to the subsequent processing of the product sold
	Justification for excluding	The influence of the organization on the source of emission is too limited
	Reference category	3.10 Use of products
End of product life	Description	Emissions related to the disposal of the product sold at the end of its expected useful life
	Justification for excluding	Emissions not relevant to the calculation of the GHG emissions inventory of beer column production
	Reference category	3.12 End of Life of Products
Assets leased as a lessor	Description	Emissions related to the exploitation of assets owned by the reporting company
	Justification for excluding	Emissions category is not applicable due to non-existent
	Reference category	3.13 Downstream leased assets (as lessor)
Franchises	Description	Emissions related to the operation of franchises
	Justification for excluding	Emissions category is not applicable due to non-existent
	Reference category	3.14 Franchises

Additional details about the reporting framework applied can be found in Details of the methodology (Section 3.6).

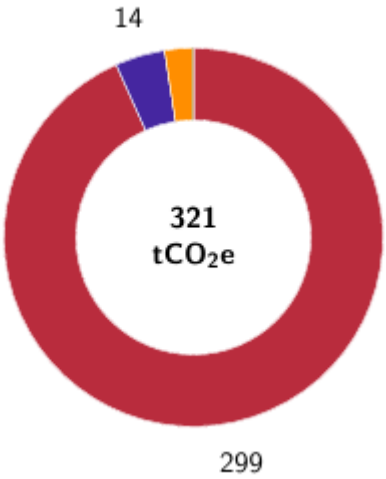
The reporting period includes the year 2024, where the total emissions of the reporting organization are detailed.

Year 2024

Total emissions amount to 321 tCO_2e with a breakdown by activity as follows:

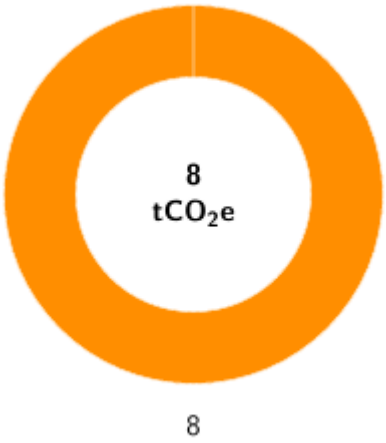
Total

- Scope 3 upstream 93%
- Reach 3 downstream 4%
- Scope 2 2%
- Scope 1 <1%



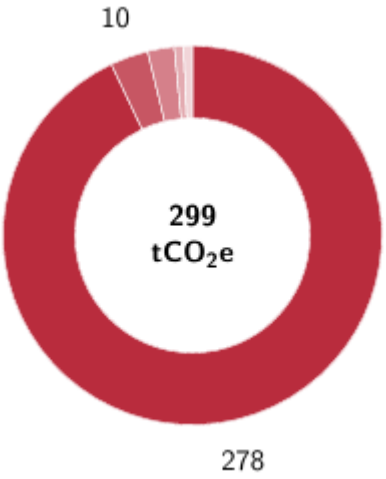
Scope 2

- Buy Electricity 100%



Reach 3 upstream

- Goods and services purchased 93%
- Displacement of workers 3%
- Business travel 2%
- Waste generated in operations 1%
- Upstream transport 1%



Reach 3 downstream

- Downstream transport 100%

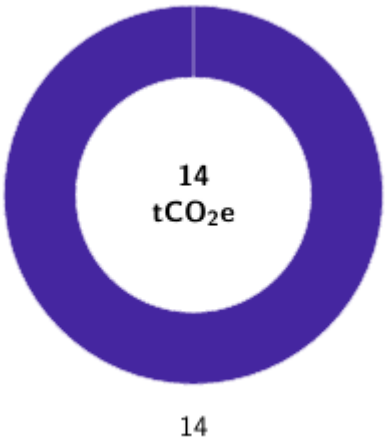


Table of Absolute Values of Emissions by Year and Emission Category.

Scope 1	<1	−50% to +99%	<1%
Mobile Sources	0	0% to +0%	-
Fugitive Emissions	0	0% to +0%	-
Stationary combustion	0	0% to +0%	-
Process emissions	<1	−50% vs. +99%	<1%
Scope 2	8	-7% vs. +7%	2%
Electricity	8	-7% vs. +7%	2%
Scope 3 Upstream	299	-38% vs. +67%	93%
Goods and Services purchased	278	-40% vs. +70%	87%
Waste generated during operations	2	−20% vs. +28%	1%
Upstream Transportation	2	-28% vs. +39%	1%
Capital goods	0	-0% and +0%	0%
Business Travel	7	-8% a +9%	2%
Employee commuting	10	-19% a +24%	3%
Reach 3 downstream	14	−40% to +68%	<1%
Downstream Transportation	14	-40% to +68%	4%
Total emissions of GHG	321	−38% to +65%	100%

The total emissions in this table include electricity emissions using the market-based method.

Comparison of GHG emissions of scope 2 according to the Market vs Location methodology

The calculation of indirect greenhouse gas (GHG) emissions of scope 2 focuses on emissions associated with an organization's consumption of electricity, heat, or steam. There are different methodologies to calculate these emissions, the most common being the Market methodology and the Location methodology. In order to delve deeper into the differences between the two in terms of the emissions calculated for APLIMET, the following information is provided.

Market Methodology:

- It is based on the mix of electricity purchased in the energy market, considering the source of generation of electricity that the organization acquires, regardless of where it is physically produced.
- It is useful for understanding the impact of energy purchasing decisions and the influence of the electricity market on emissions.
- It allows companies to choose to buy certified renewable energy or certificates of origin, thus reducing their carbon footprint in this category.
- Value: 0.275 $kgCO_2e/kWh$ (weighted miter).

Location Methodology:

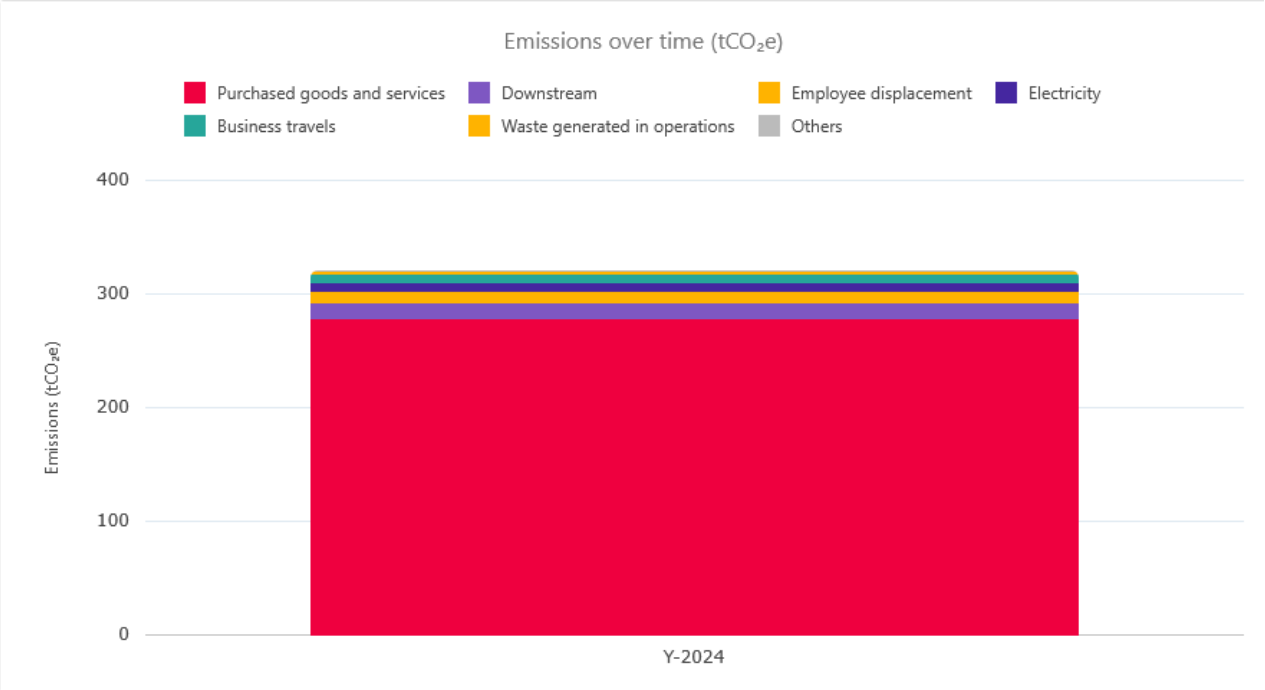
- It focuses on the physical location where the electricity consumed by the organization is generated.
- It considers the specific energy matrix of that region or country, reflecting the real emissions of electricity generation in that place.
- It is more representative of real emissions in a specific geographical context, but less flexible in terms of energy purchasing decisions.
- MITERD 2024 value: 0.283 $kgCO_2e$ / kWh.

Comparative:

- The Market methodology can show a lower carbon footprint if the organization buys renewable energy or certificates of origin, although the electricity is generated in a matrix with different emissions.
- The Location methodology provides a more accurate view of the real emissions in the region where the energy is consumed, but it can be more difficult to reduce if the local energy matrix is highly polluting.
- The choice between both methodologies depends on the reporting objectives and the sustainability strategy of the organization.

- From what we see that APLIMET acquires lower energy with an absolute value of 0.008 kgCO_2e / kWh than the country average by 2.8%.

Emissions in the period analyzed 2024



Section 3.6.7 provides more information on how to interpret the uncertainty interval and other methodological options adopted in this report, and specifically section 3.6.8 provides a complete breakdown by greenhouse gas (GHG) emissions. Comment that the breakdown of biogenic emissions has not been considered for not being applied in this project.

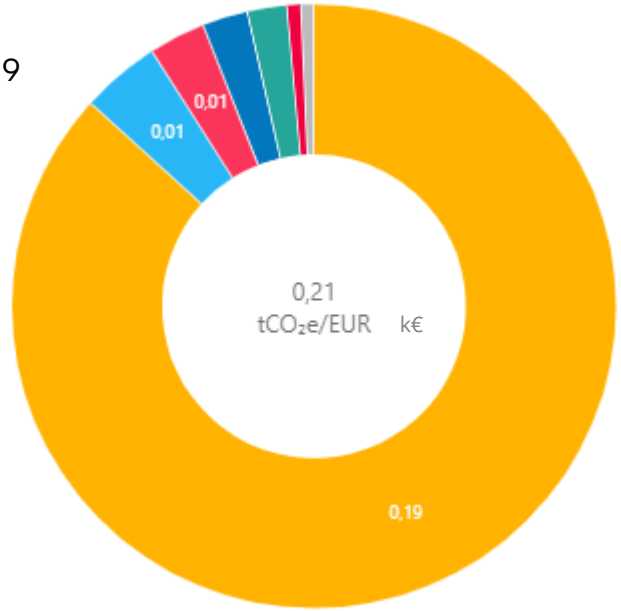
Next, we obtain the activity index for subsequent trend analysis based on the main metrics such as turnover, the company's employees in 2024 or the units or volume transported.

In this case, we will define two indicators: tCO_2e per thousand euros of turnover and tCO_2e per equivalent worker (FTE), so that in subsequent years this comparison can be made in a similar way to both of the activity index or KPI

Total emissions per k€ of turnover ($tCO_2e/k€$)

In this case, APLIMET has invoiced €1.5M in 2024, for which it has emitted 0.21 tCO2e for every €1,000 of turnover.

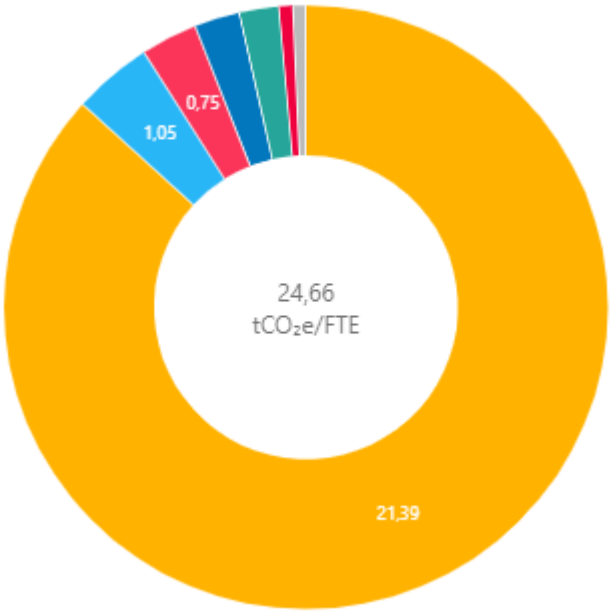
- Goods and services purchased..... 0,19
- Downstream Transport..... 0,009
- Displacement of workers. 0,006
- Electricity..... 0,005
- Business travel..... 0,005
- Waste in operations..... 0,002
- Others..... 0,002



Total emissions per worker (tCO2e/FTE)

In this case, APLIMET has a total of 13 employees in the total of the company and based in *Montcada i Reixach* for which it emits a total of 24.66 tCO_2e for each worker, distributed as follows:

- Goods and services purchased..... 21,39
- Transport Downstream..... 1,05
- Displacement of workers..... 0,75
- Electricity..... 0,6
- Business travel..... 0,525
- Waste in operations..... 0,178
- Others..... 0,175



These metrics can be used to compare APLIMET's carbon footprint in different years and to check whether the strategic actions proposed for decarbonization are having the expected effects and the achievement of the established objectives.

3.5 APLIMET Mitigation Strategy aligned with the SBTi

Mitigation Plan towards Climate Neutrality

The company will disclose its mitigation plan towards climate neutrality given the climate emergency. If the company does not have this plan, it will indicate whether it will adopt a transition plan and, if so, when.

The purpose of this disclosure requirement is to enable an understanding of the company's past, present and future mitigation efforts to ensure that its strategy and business model are compatible with the transition to a sustainable economy and limiting global warming to 1.5ºC in line with the Paris Agreements and with the aim of achieving climate neutrality by 2050 and, where appropriate, the exposure (disclosure and transparency) of the company in activities related to coal, oil and gas.

Given that the APLIMET company has a mitigation plan aligned with the international SBTi standard, GHG emission reduction targets are included.

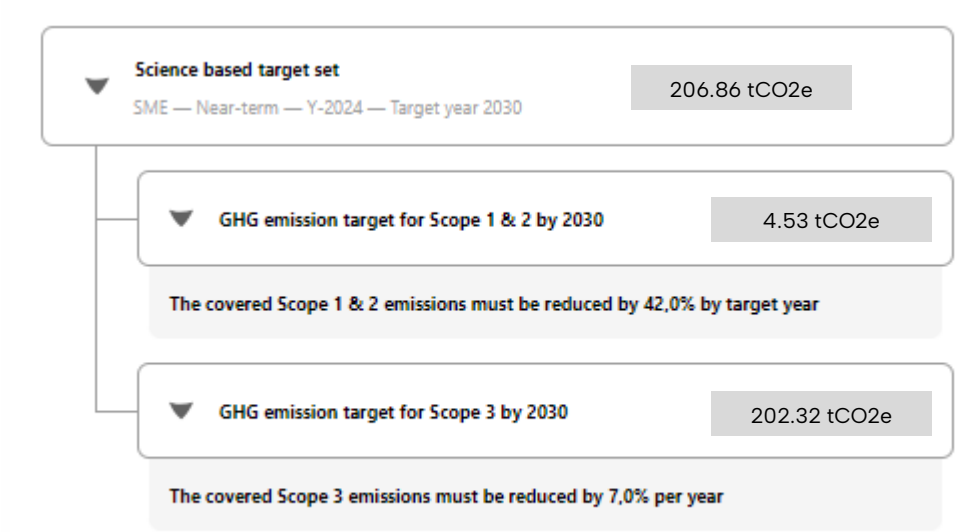
The following results are reflected once the objectives for the non-listed SME – APLIMET have been set, according to the calculation method of absolute intersectoral reduction, inspired by the criteria of the SBTi and aligned with the GHG Protocol for the inventory of associated emissions.

The objectives must conform to the criteria that the SBTi considers critical to qualify an objective as "science-based". The SBTi has developed a series of guides to help companies understand how to meet these criteria.

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

2030 Goals – SBTi towards climate neutrality, reference year 2024:

With the GHG inventory calculated, if APLIMET wants to align with the SBTi's short-term targets for small and medium-sized enterprises, it will have to reduce scope 1 and 2 emissions by 42% and scope 3 emissions by 7% annually until 2030.

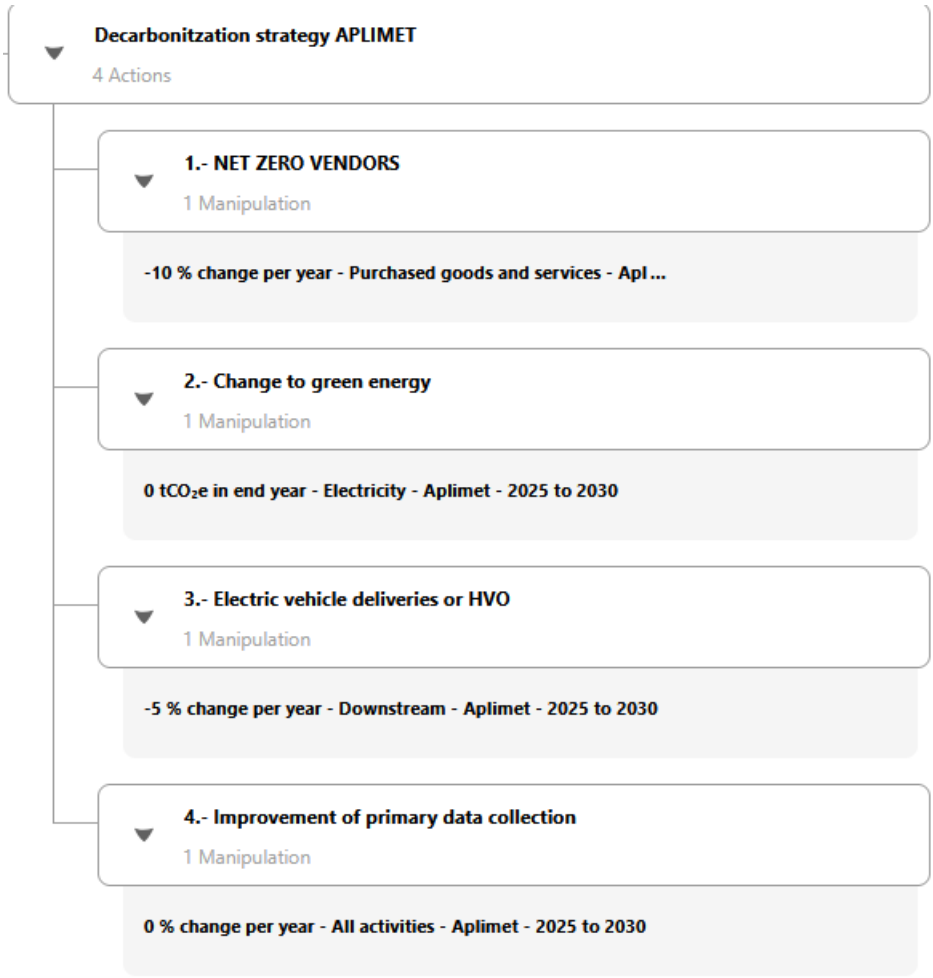


The achievement of these objectives can be achieved through a decarbonization plan made ad-hoc for APLIMET and which will mitigate the main emission categories of the inventory.

Proposal for strategic decarbonization measures by SBTi alignment:

Within APLIMET's decarbonization strategy, a series of actions are proposed that can help reduce emissions from the company's activity or, at least, that are considered worth studying due to the potential savings in the generation of emissions that they could entail.

In this sense, 4 lines of action have been defined with different impacts, but which act mainly on the category of goods and services, as it represents 90% of APLIMET's total emissions.



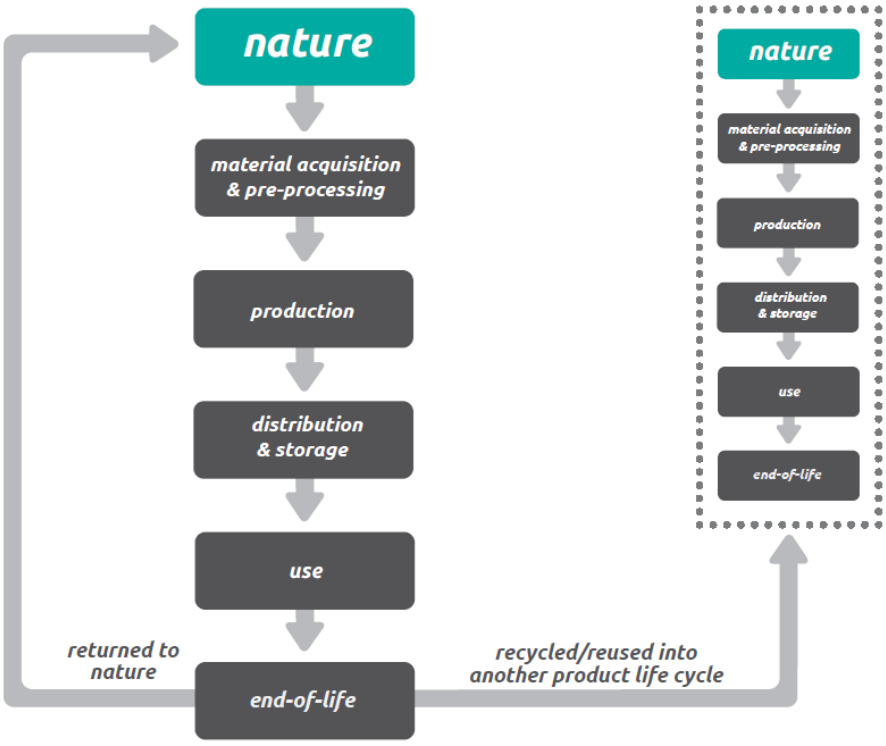
The proposed actions are detailed below:

1. NET ZERO SUPPLIERS: Reduction of 10% per year in Scope 3 (indirect) emissions corresponding to the purchase of goods and services by 2030.

   What are the main steps to achieving this goal?

   a) Request to suppliers for the carbon footprint associated with the verified and certified product (according to the GHG protocol or ISO 14067).
   b) Implementation of sustainable purchasing policies through supply chain mapping and weighting.
   c) Study of the carbon footprint associated with the product along the value chain, Life Cycle Assessment (LCA) from the extraction of raw materials to end-of-life treatment.

In the following figure we see the five stages of the life cycle of a product (simplified for illustrative purposes) that, according to the GHG protocol, must be considered when completing the LCA calculation.



These measures should lead us to be able to identify more climate-sustainable and emissions-friendly product alternatives to quantify and compare them with the purchase of recycled paper and plastics.

Also, the fact of obtaining the PCFs (Carbon Footprints Associated with Products) makes the calculations more precise, thus avoiding estimates where we have primary data and enables the option of implementing a plan to reduce this footprint with specific objectives, transforming it into an RPCF (reduced product carbon footprint).

2. Purchase of Green Energy: The first action is the purchase of 100% green energy (energy with 100% renewable GoO) and that would reduce about 8 tCO2e /year (2-3% of total emissions) and a measure that can be implemented directly.

3. Deliveries by electric vehicle or HVO: Encourage the use of vehicles that do not generate emissions or minimize their impact. In this way, the purchasing policy relating to the outsourcing of transport must include elements related to sustainability and the reduction of the carbon footprint. Given that the solutions

available on the market today depend a lot on the type of transport, the actions to be carried out have been differentiated in what would be deliveries (capillarity) and medium or long-distance transport by heavy vehicle.

Thus, in the part relating to heavy transport, we will set a segregated emission reduction objective associated with the hiring of this type of truck, where the use of low-carbon or renewable fuels is predominantly valued.

- *Biofuels:* They are obtained from organic waste such as used cooking oils, nut shells or pruning remains, avoiding their rejection and converting them into fuels for transport, heating or industry. They are already a reality and are available in more of our service stations in the Iberian Peninsula. Biofuels can lead to reductions of up to 90% in emissions.

- *E-Fuels:* They are also known as renewable fuels of non-biological origin. They are produced with air and water: hydrogen is separated from water and combined with CO_2 captured from the atmosphere, creating a fuel that can be used in a wide range of applications, such as long-distance heavy vehicles. To date they are not marketed but there are pilot projects for their manufacture.

In the part of smaller vehicles that are usually used in capillary life, there are already more electric vehicle alternatives, so it is believed that defining an annual target for contracting this type of vehicle with regular collaborators could be a good way to work directly on these emissions, obviously ensuring that this fleet of vehicles uses energy with 100% renewable GoO.

To provide consistency and help in the decision, a practice that could be started is to ask to obtain the ratio ton of CO2e per ton kilometers travelled [tCO_2e x t x km] to compare and evaluate the choice of transport with the lowest emissions as the main selection criterion.

4. Improvement of primary data collection: The main category of emissions (purchase of goods and services) has had to be calculated based on cost and not based on weight as would be desirable, due to the impossibility of finding digitized data on the quantities and unit weight purchased from the different suppliers. This has forced the calculation of this and other relevant categories by Spend Based Methodology, which has EXIOBASE as a database of reference emission factors. This means that emissions are estimated by a comparable process based on expenditure and not volumes of activity that may be more

accurate for the calculation in question. Within APLIMET's purchasing strategy, asking for the carbon footprint associated with the service that is contracted is also a strategy that can reduce both the absolute value of the tons of CO_2 present in the inventory and, also very important, the uncertainty associated with this footprint, which in the case of the spend-based methodology is usually quite large (in the case of the emission factor used, the uncertainty is moves from -35% to +60%).

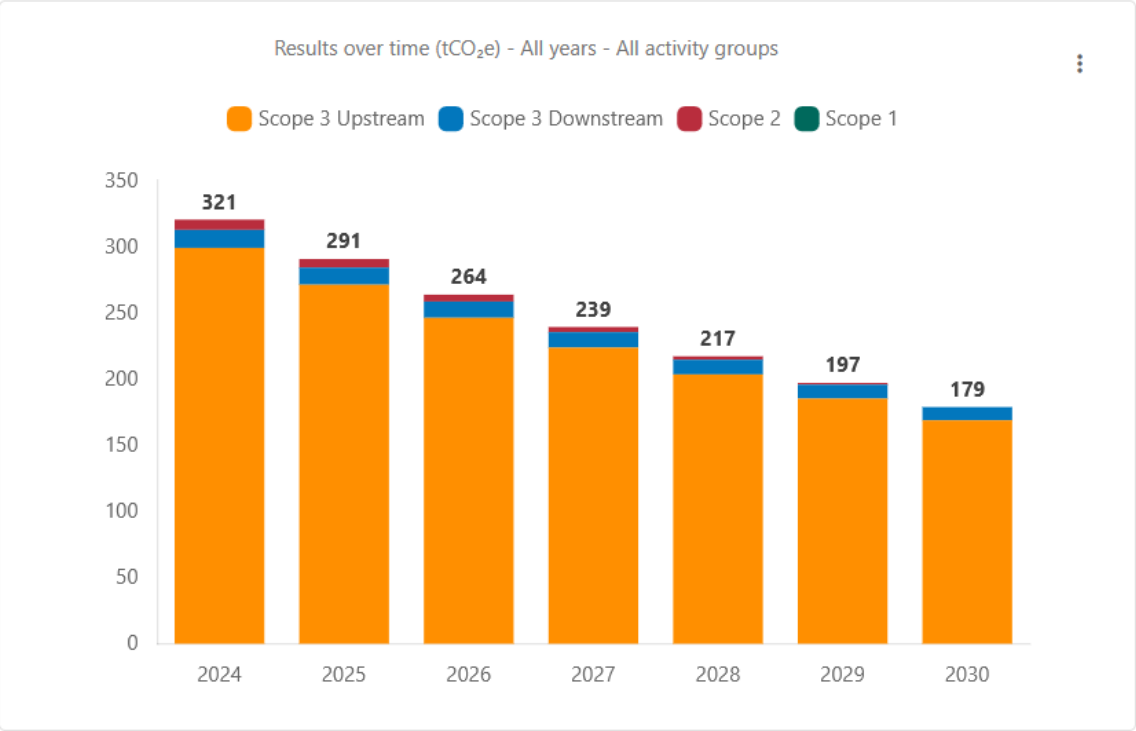
The uncertainty associated with volume, as it could not be otherwise, will also be low because it will generally be difficult to approximate the calculation based on the euros paid instead of by the kgs of product purchased, for example.

With these actions, we would be ensuring a 44% reduction in emissions calculated by 2024 by 2030, slightly above the target set by the SBTi to be able to align with the Paris agreements.

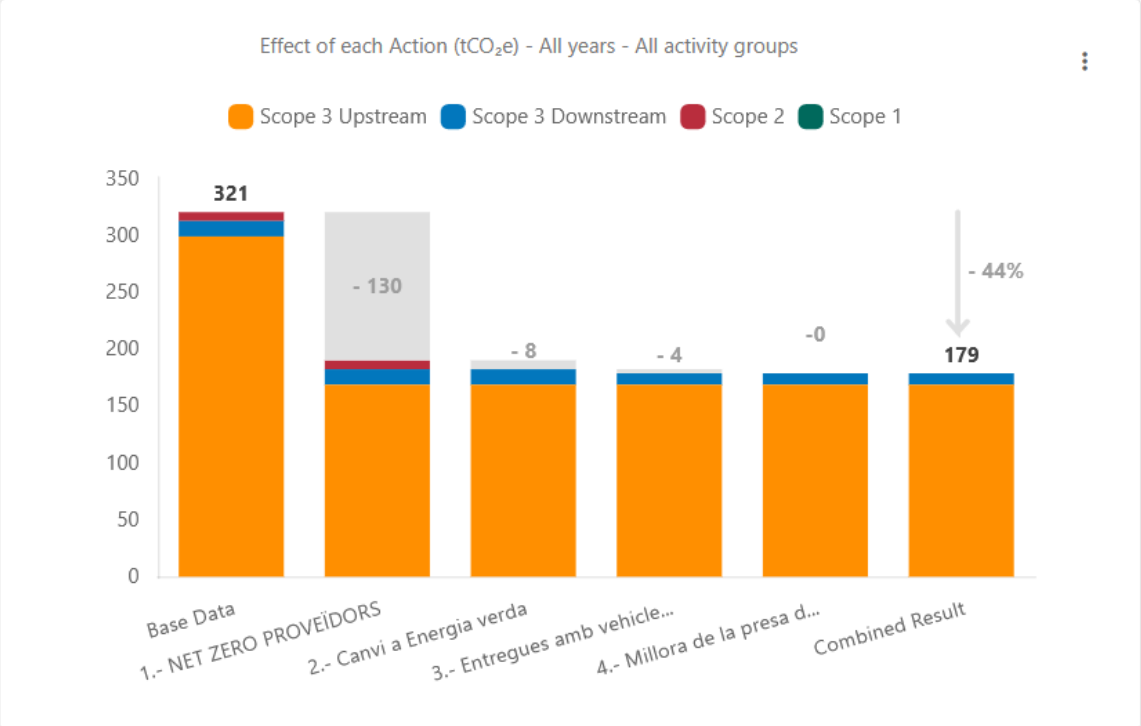
Estimated emissions up to 2030 to meet SBTi targets.

Name	2024	2025	2026	2027	2028	2029	2030
Total target	320,54	298,1	277,2	257,71	239,4	222,48	206,86
Scope 1 & 2 target	7,83	7,27	6,73	6,18	5,47	4,93	4,53
Scope 3 target	312,71	290,8	270,46	251,53	233,92	217,5	202,32
Scope 1	0,03224	0,03224	0,03224	0,03224	0,03224	0,03224	0,03224
Scope 2	7,794	6,495	5,196	3,897	2,598	1,299	0
Scope 3 Upstream	299,1	271,3	246,27	223,75	203,48	185,24	168,82
Scope 3 Downstream	13,61	12,93	12,28	11,67	11,088	10,53	10,0078

Evolution of year-on-year emissions in the period analyzed 2024 – 2030 to meet SBTi targets according to the proposed strategic emission reduction actions:



Reduction percentages in 2030 aligned with the SBTi:



3.6 Methodological details

The GHG emissions inventory reflects the consolidation of emissions data in accordance with GHG Protocol reporting standards. These are the Corporate Accounting and Reporting Standard (2004), the Corporate Value Chain Accounting and Reporting Standard (2011), and all associated guidance documents.

3.6.1 GHG Classification Structure

The reported GHG emissions are organized and aggregated into their respective activity categories and activity category groups, i.e. each activity category is grouped into a GHG inventory category and associated with a reference category.

A consolidation of all emissions in the strict reference categories in the Greenhouse Gas Protocol can be found in section 3.6 and specifically in 3.6.8. This table shows a breakdown by greenhouse gas of all non-biogenic emissions.

Carbon offsets (removals or avoided emissions) are not reported in this report because they do not exist.

3.6.2 Global warming potential

The following GHGs are included in the analysis: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulphur hexafluoride (SF_6), nitrogen trifluoride (NF_3), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).

The emissions of these GHGs are expressed in CO2 equivalent (CO2e) according to their global warming potential over a time horizon of 100 years (GWP100).

The values of the Greenhouse Warming Potential are based on the Fourth, Fifth or Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) (AR4, AR5 or AR6), in accordance with the methodological options of the emission factor bases used in this report.

Section 3.6.8 divides the GHG emissions inventory into the individual contributions of each GHG (or group of GHGs). Activities for which a new GHG division is not known are reported in the CO_2e column*.

3.6.3 Additional effects of radiative forcing

If we apply emission factors for aviation, we must include the additional effects of radiative forcing through the emission of gases and aerosols and the change in the abundance of clouds. For this, a central estimate of a multiplier of the GWP100 figure is used. This estimate seeks to reflect the additional effect based on the best available scientific data, while being consistent with the UNFCCC reporting convention.

3.6.4 Dual report on electricity

The total emissions in this report include electricity emissions using the market-based method. Considering contractual instruments and other market-based mechanisms for allocating electricity emissions to consumers. However, this report has been prepared with a dual reporting objective in mind, and the results of market- and location-based reporting methods can be found in the full GHG table in Section 3.6 and specifically in 3.6.8. Considering that the total emissions in this table include electricity emissions using the market-based method, as mentioned above.

3.6.5 Focus on emission factors

For each activity, the most relevant, precise and localized emission factor possible has been selected, with the discretion of the information. The key considerations in the selection of the emission factor were locality and relevance, as well as the availability of emission factors in official databases, consistency and associated uncertainty.

A complete list of the publications on emission factors used in this report can be found in the following table:

Publisher	Publication version	Publication date	URL	% Usage
ESC	MITECO / OCCC	2023	Link Link	10,9%
GLEC	V3.0	2023-10-25	Link	34,6%
Exiobase	3.8.2	2021-10-21	Link	34%
GLEC	v2.0	2023-01-07	Link	11,1%
UK.gov GHG Reporting Factors	v2024 1.1	2024-10-30	Link	7.7%
UN IPCC	IPCC AR6	2023-03-01	Link	1,4%
Ecoinvent	3.10	2024-03-12	Link	0,3%

Each emission factor used in the calculation is assigned a validity period that overlaps or partially overlaps with the period of application of the notified activity. The period of validity of emission factors is determined by their publication document[1].

3.6.6 Base Year Report Focus

The Y-2024 reporting period is the first GHG reporting period and counts as the base year for current and future reporting cycles.

A new base year calculation will be implemented in case it is necessary to maintain an effective base year comparison. The reasons for this may include:

- changes in organizational boundaries, such as mergers or acquisitions.
- Changes to reporting limits, such as revisions to excluded categories.
- significant changes in calculation methodologies.
- Significant changes in the data sourcing strategy.
- significant changes in emission factor selection.

3.6.7 Uncertainty assessment

The associated uncertainty in the emissions calculations in this report was assessed in a quantified manner. Using a system with discrete levels of uncertainty, a point estimate was obtained for each data point, which was then aggregated to the entire inventory to result in a global quantified uncertainty estimate.

The first step in this process is to separate the uncertainty of the activity data from the uncertainty of the emission factor. The uncertainty of the activity data (or volume uncertainty) reflects the reliability, completeness and temporal, geographical and technical representativeness of the numerical value used in the calculation of emissions (for example, the uncertainty about "1,000 kg of product A"). On the other hand, the uncertainty of the emission factor reflects the reliability, integrity and representativeness of the numerical value of the estimated emission intensity (e.g. the uncertainty about "500 kgCO_2e per kg of product A").

For both the uncertainty of the activity data and the uncertainty of the emission factor, an uncertainty value of a single parameter (aggregate value) is obtained.

This single parameter reflects the incomplete knowledge of the exact value in a probability distribution, based on qualitative evaluations of how the evaluated

[1] In the event that the application period of the activity overlaps with the validity period of more than one emission factor, the average data of the application period are used to determine which factor to use (for example, if an activity extends from August 2021 to July 2022, the average date is 29/01/2022)

parameter scores in the dimensions (e.g., reliability). The numerical link between qualitative assessment (very good, good, fair, bad) and probability distribution is given by a pedigree matrix, provided by the World Resources Institute's Quantitative Uncertainty Guide (link).

Once the uncertainty of a single parameter of the activity data and the emission factor for each entry is set, this uncertainty is aggregated to all entries in the inventory.

With this, we can obtain an estimate of the global uncertainty of all measurements. This aggregation occurs through the expansion of the Taylor series under assumptions of lognormal distribution (according to the quantitative uncertainty guide).

This is likely to lead to a conservative estimate, in other words, total uncertainty is likely an overestimation or upper bound of actual uncertainty.

Finally, this uncertainty is aggregated, first at the level of activity category and, finally, for total emissions across the inventory. The uncertainty is expressed as a confidence interval of 95% of the real value, assuming a lognormal distribution.

Therefore, the uncertainty estimate of "-29% to +40%" for a value of 1,000tCO_2e indicates that, with 95% certainty, the actual value of this number is between 710 tCO2e (1,000 tCO_2e -29%) and 1,400 tCO2e (1,000 tCO_2e +40%).

In the GHG emissions inventory that concerns us for the year 2024, the absolute value is **321 tCO_2e with an associated global uncertainty of [-38% to +65%] with a confidence interval of 95%, where a POOR or Bad level is established,** practically at the limit of FAIR or reasonable that is reached with a maximum uncertainty of [-35% to +65%].

In the strategic decarbonization plan aligned with the SBTi, some measures have been proposed that should allow us to work on reducing this associated uncertainty, improving the reliability of primary data sources and that can be reduced by putting into practice some of the actions already discussed and which are summarized as follows:

- The application for the product carbon footprint is associated with the purchase of goods and services.
- The detailed record of purchases is made with digitized volume data.
- Ditto for the transport of purchase and sale to facilitate the calculation.

3.6.8 Year-on-year emissions inventory

General GHG emissions table 2024

Activity categories	Certainty *(95% confidence)*	All GHG *(tCO_2e)*	CO_2 *(tCO_2e)*	CH_4 *(tCO_2e)*	N_2O *(tCO_2e)*	SF_6 *(tCO_2e)*	NF_3 *(tCO_2e)*	HFCs *(tCO_2e)*	PFCs *(tCO_2e)*	CO_2e* *(tCO_2e)*
Scope 1	−50% to +99%	<1	<1	0	0	0	0	0	0	<1
Mobile Sources	–	–	–	–	–	–	–	–	–	–
Fugitive Emissions	–	–	–	–	–	–	–	–	–	–
Stationary Combustion	–	–	–	–	–	–	–	–	–	–
Process emissions	-50% a +99%	<1	–	–	–	–	–	–	–	<1
Scope 2	-7% to +7%	8	–	–	–	–	–	–	–	8
Electricity	-7% to +7%	8	–	–	–	–	–	–	–	8
Reach 3 upstream	−38% to +67%	299	218	41	4	2	–	7	14	13
Goods and Services Purchased	−40% to +70%	278	210	41	4	2	–	7	14	<1
Waste generated in Operations	-20% a +26%	2	–	–	–	–	–	–	–	2
Upstream Transportation	-28% a +39%	2	1	1	<1	<1	–	<1	<1	<1
Business travel	-8% a +9%	7	6	<1	<1	–	–	–	–	1
Employee Commuting	-19% a +24%	10	–	–	–	–	–	–	–	10
Reach 3 downstream	−40% to +68%	14	–	–	–	–	–	–	–	14
Downstream Transportation	−40% to +68%	14	–	–	–	–	–	–	–	14
Emissions totals de GEH	−38% to +65%	321	218	41	4	2	0	7	14	34

* This column contains all entries for which a new division in GHG is not known. The total emissions in this report include electricity emissions using the market-based method.

Consolidated Statement of GHG Emissions 2024

	Activity categories	Certainty *(95% confidence)*	All GHG *(tCO_2e)*	CO_2 *(tCO_2e)*	CH_4 *(tCO_2e)*	N_2O *(tCO_2e)*	SF_6 *(tCO_2e)*	NF_3 *(tCO_2e)*	HFCs *(tCO_2e)*	PFCs *(tCO_2e)*	CO_2e* *(tCO_2e)*
1	Scope 1	−50% to +99%	<1	<1	0	0	0	0	0	0	<1
1.1	Mobile Sources	–	–	–	–	–	–	–	–	–	–
1.2	Fugitive Emissions	–	–	–	–	–	–	–	–	–	–
1.3	Stationary COmbustion	–	–	–	–	–	–	–	–	–	–
1.4	Process emissions	-50% a +99%	<1	–	–	–	–	–	–	–	<1
2	Scope 2	-7% to +7%	8	–	–	–	–	–	–	–	8
2.1	Electricitat – market based	-7% to +7%	8	–	–	–	–	–	–	–	8
	Location based	-7% to +7%	8	–	–	–	–	–	–	–	8
2.2	Purchase of steam or other energies	–	–	–	–	–	–	–	–	–	–
3	Reach 3 upstream	−38% to +67%	299	218	41	4	2	–	7	14	13
3.1	Goods and Services Purchased	−40% to +70%	278	210	41	4	2	–	7	14	<1
3.2	Capital goods	–	–	–	–	–	–	–	–	–	–
3.3	Activities related to the consumption of fossil fuels and energy	–	–	–	–	–	–	–	–	–	–
3.4	Upstream Transportation	-28% a +39%	2	1	1	<1	<1	–	<1	<1	<1
3.5	Waste generated in Operations	-20% a +26%	2	–	–	–	–	–	–	–	2
3.6	Business Travel	-8% a +9%	7	6	<1	<1	–	–	–	–	1
3.7	Employee Commuting	-19% a +24%	10	–	–	–	–	–	–	–	10
3.8	Assets leased as a lessee	–	–	–	–	–	–	–	–	–	–
	Reach 3 downstream	−40% to +68%	14	–	–	–	–	–	–	–	14
3.9	Downstream Transportation	−40% to +68%	14	–	–	–	–	–	–	–	14
3.10	Product Processing	–	–	–	–	–	–	–	–	–	–
3.11	Product Usage	–	–	–	–	–	–	–	–	–	–
3.12	Product End of Life	–	–	–	–	–	–	–	–	–	–
3.13	Assets leased as a lessor	–	–	–	–	–	–	–	–	–	–
3.14	Franchises	–	–	–	–	–	–	–	–	–	–
3.15	Investments	–	–	–	–	–	–	–	–	–	–
	Emissions totals de GEH	−38% to +65%	321	218	41	4	2	0	7	14	34

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