

# Carbon Footprint Management Plan

Minerva Foods Uruguay supply farms and  
operations 2020/2021

## Carbon Footprint Management Plan

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# Carbon Footprint Management Plan

*Minerva Foods - Uruguay, 2020/2021*

This Carbon Footprint Management (CFM) Plan sets out Minerva Foods commitment to measure and monitor its greenhouse gases (GHG) emissions of five beef supply farms and three slaughterhouses (Canelones, Carrasco and Melo) in Uruguay over time while continuously reducing its GHG emissions to lessen the negative impacts of climate change. The CFM plan also helps the organization to protect and enhance future business growth and value creation.

This plan contains GHG emissions reduction targets and an action plan for achieving reductions over time. Furthermore, the CFM plan evaluates the quality of the organisation's carbon footprint efforts relating to data collection and calculation methods, data sources, processes, and activities that contribute to material emissions, as well as any estimates or assumptions used in calculations. Data quality assessments also indicate areas for improvement over time.

Any question regarding this CFM plan may be forwarded to:

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## Definitions

GHG	Greenhouse gases
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
N <sub>2</sub> O	Nitrous oxide
CH <sub>4</sub>	Methane

## Company Background

Minerva Foods is one of South America's leading producers of high-quality beef and the largest beef exporter. The company also operates in the processing of beef, pork, and poultry, and the export of live cattle. The Company operates 25 cattle slaughtering plants, 10 located in Brazil, 5 in Paraguay, 3 in Uruguay, 5 in Argentina and 2 in Colombia, with a total slaughtering capacity of 26,180 head of cattle daily. Additionally, Minerva owns a plant located in Brazil for processing proteins – Minerva Fine Foods – and two plants in Argentina, located in the cities of Rosario and Pilar, which constitute the Swift Argentina brand, with processing capacity of 162 and 55 ton/day, respectively. The company exports products to more than 100 countries on five continents through sixteen commercial offices, and operates 14 distribution centers, 9 of which are in Brazil, 1 in Paraguay, 1 in Colombia, 2 in Chile, and 1 in Argentina.

Minerva Foods is committed to the sustainable future of the planet's food supply, it is the Company's purpose. Also, sustainability is one of the Company's values and it is present on the corporate strategy, a differential and commercial attribute in all business segments.

Minerva Foods is committed to several initiatives that are connected to the national and international sustainability agenda. Some of these actions are: i) participation, since 2019, in the Global Roundtable for Sustainable Beef to discuss strategies for responsible meat production; ii) Emerging Markets Investor Alliance – group of investors focused on the discussion of Environmental, Social & Governance topics of value chains in emerging markets; iii) Sustainable Livestock Working Group – Minerva is part of the group's Board of Directors, which unites different sectors in a positive agenda for the development of sustainable livestock with balance between economic, social and environmental pillars; iv) Mesa Paraguaia de Carne Sostenible (MPCS) – the group seeks to unite the links in the meat production chain in favor of sustainability; v) Mesa de Ganadería Sostenible de Colombia – aims to support the structuring of public policies, programs and projects related to the development of sustainable livestock.

Minerva Foods' public commitment to the management of risks related to climate change has a direct impact on the management of the production chain, as well as on the operations at its industrial units. Efforts related to energy efficiency and the control of greenhouse gases are at the heart of the strategy and requirements of its shareholders, investors, customers and partners.

The Company monitors its GHG emissions through Annual Corporate Inventories of Greenhouse Gas Emissions, based on the methodology of the Brazilian GHG Protocol. The results guide actions that are periodically adjusted to reduce GHG emissions. In 2021, Minerva Foods won the Gold Seal in its Corporate Inventory of Greenhouse Gas Emissions in the Brazilian GHG Protocol Program, the ultimate recognition of the tool used to qualify and manage emissions.

In this context, Minerva Foods announced decisive action to combat climate change and protect ecosystems, with the launch of its sustainability strategy, committing to reduce the intensity of its emissions by 30% by 2030 (compared to the year 2020) and have 50% of its beef suppliers participating in the **Renove Program**, which supports the implementation of low-carbon emission practices in the supply chain. In addition, the company proposes to achieve net zero emissions, with efforts focused on achieving this goal by 2035, 15 years ahead of schedule in the Paris Agreement.

The first step is to account for and encourage actions to reduce GHG emissions from farms that supply cattle to Minerva Foods. In this sense, initiatives at the livestock property level are being evaluated and implemented in Uruguay, Brazil, Argentina, Colombia and Paraguay.

Livestock farming in Uruguay has a prominent global position and has been a traditional and profitable activity in the country for centuries. Its natural characteristics of landscapes, vegetation and temperate climate without extreme events, together with continuous development of management techniques, place Uruguay in a differentiated position in terms of product quality in the world.

The environment in which cattle breeding is carried out is mostly natural pastures, in which the animals are raised outdoors, in balance and harmony with the environment. In addition, it is a country with good availability of water and shade, which is directly related to animal welfare, guaranteeing better quality product. So, in addition to animals developing their biological processes without restrictions, it is a production system that most imitates nature, in which animal and plant species live together in the same habitat, preserving existing biodiversity.

With these positive characteristics, the process for the development of a low-emission livestock of Greenhouse Gases (GHG) becomes even easier. Although livestock is an important sector in GHG emissions, it is also a strategic sector for the reduction and removal of these gases, through improvements in management, implementation of integrated systems and training of farmers and technicians. In this way, livestock farming becomes an important system to mitigate climate change.

For Minerva Foods – Uruguay’s own operations, the Company developed a decarbonization plan, based on its Corporate Inventory of Greenhouse Gas Emissions (scopes 1 and 2). The plan is aligned with the intensity (2030) and net zero (2035) targets. Considering scopes 1 and 2, 90% of the emissions in its own operations come from waste and wastewater treatment and electrical energy consumption (2020). The Company will invest in the exchange of the effluent treatment technology to mitigate methane emissions in the process and, for the energy consumption, since 2020, the Company buys I-RECs (International Renewable Energy Certificated) for all its energy consumption, avoiding emissions from non-renewable energy sources. Minerva Foods – Uruguay is also studying the implementation of solar energy panels in the Company’s facilities to generate clean energy and reduce the consumption from the GRID. Unavoidable or non-reducible GHG emissions will be offset by the acquisition of carbon credits.

## 1. Corporate Climate Policy Template

February, 2022

Minerva Foods Uruguay takes responsibility for our business practices and the GHG emissions resulting from our activities. This responsibility will be carried out through the following guidelines:

- Minerva Foods - Uruguay will demonstrate a high level of commitment and adopt best practices towards climate change mitigation.
- Minerva Foods - Uruguay will work to reduce its annual GHG emissions level by avoiding unnecessary emissions, improving energy efficiency, and maintaining climate responsible business practices across its value chain – hereby improving our corporate beef carbon footprint.
- Minerva Foods - Uruguay will ensure that related business policies, such as procurement and travel policies, are aligned with intentions described in this policy statement.
- Minerva Foods - Uruguay will identify and act upon areas and practices where reasonable investments can result in significant GHG emission reductions. These shall be described in this carbon footprint management plan.
- Minerva Foods - Uruguay will continue its annual monitoring and reporting of GHG emissions. Monitoring, Documentation, and Reporting shall be complete, consistent, accurate, relevant, and transparent, and comply with Preferred by Nature's Carbon Footprint Management Standard.
- Minerva Foods - Uruguay will communicate consistently and transparently about our climate policy, reduction targets and plans, and achievements.
- Minerva Foods - Uruguay will ensure that any carbon credits used to offset unavoidable or non-reducible GHG emissions come from credible, sustainable, and additional projects.
- Minerva Foods - Uruguay will work towards carbon neutrality by 2035 through a combination of emissions reductions and offsetting initiatives.
- Minerva Foods - Uruguay will demonstrate efforts to encourage business partners and clients to also adopt climate-friendly business, production, and consumption behaviours and practices.

Ignacio Gamio

COO Minerva Foods Uruguay



## 2. CFM Overview and Approach

The following outlines the focus of our carbon footprint along with relevant processes and quality management measures related to our plan.

- i. Subject of analysis: Beef cattle production and industrial operations;
- ii. Justification of base year: The baseline of emissions and removals from beef cattle production extended between July 2020 and June 2021, the agricultural harvest year preceding the assessment. For scopes 1 and 2 emissions (industrial operations), the baseline year is 2020 (from January to December). The most current data for scopes 1 and 2 emissions are in the 2020 Corporate Inventory of Greenhouse Gas Emissions.
- iii. Staff responsibilities: Assure that the assessment consistently and accurately reflects the greenhouse gas emissions and removals from the assessed production system. Ensure the completeness of the approach to the scope of the study in line with the reality of the field, including all emission sources identified in the system. Finally, report the results obtained in a transparent and responsible manner. Therefore, the dynamics of the work were divided between Minerva Foods – Uruguay and Imaflora.

Minerva Foods – Uruguay, as it maintains direct contact with its suppliers, was responsible for collecting specific information on livestock production on the farms (Mr. Marcelo Cabrero was responsible for direct contact with suppliers). On the other hand, the Imaflora team were responsible for crossing information from the farms evaluated with the calculation method recommended by the IPCC and GHG Protocol.

The Imaflora is a Brazilian NGO, founded in 1995, a time when concerns about preserving the environment and better ways of using nature's resources began to take prominence throughout the world.

Minerva Foods – Uruguay was responsible for the operational data collection from GHG emissions sources and input in the 'Climas' software to calculate the emissions for scopes 1 and 2. The calculation had the support of a Brazilian consulting company (WayCarbon). The decarbonization plan for scopes 1 and 2 was conducted by the sustainability corporate team with the support of WayCarbon (consulting partner) with information provided by Minerva Foods - Uruguay.

- iv. Staff training: The survey of information from the farms and the accounting for the results of greenhouse gas emissions were carried out by a team specifically trained to minimize errors and attain accurate results. The Minerva Foods – Uruguay team is trained on a regular basis and additionally offers training to suppliers up to 3 times a year to encourage good practices in agricultural activities.
- v. Documentation: The information relevant to the assessed farm was obtained through forms and the results accounted for in calculators, both developed in Microsoft Excel by Imaflora. All scopes 1 and 2 GHG emission are managed (data collection and calculation) by the software 'Climas', and results are publicly disclosed on Minerva Foods' website and Sustainability Report.
- vi. Data collection: The selection of farms and survey of information about the production system were carried out jointly between Minerva Foods - Uruguay and Imaflora. The farmers, supported by trained technicians designated by Minerva Foods reported the relevant information on cattle-raising activity for the period by filling out predefined forms. Thus, information was reported on area occupation, activities and production systems, herd breed, stocking rate, manure management system, pasture maintenance, average number of animals by age, sex and production system, fuel and electricity consumption, quantity of fertilizers, among other relevant information for accounting GHG emissions and removals in livestock.

The information was compiled in the calculation tool developed by Imaflora, which is aligned with the methodology of the GHG Protocol for Agriculture and Livestock (WRI, 2015) and Guidelines for National Inventories of Greenhouse Gases (IPCC, 2019 Refinement of the 2006 Guidelines).

All operational data from GHG emissions sources for scopes 1 and 2 are inputted to the 'Climas' software on a monthly basis so the Company is able to manage its emissions.

- vii. Calculation tools: The calculation tool was specially developed to meet the approach contemplated in the assessment. Therefore, we opted for a common and easy platform to be replicated and updated among involved. The proposed accounting method involved the most relevant and recent data available by international protocols (IPCC, GHG Protocol/ WRI, Ecoinvent, among others). It is important to emphasize that, the calculation tool was verified by an outsourced company specifically contracted to evaluate and approve of the applied methodology.

For scopes 1 and 2 GHG emissions calculation, Minerva Foods uses a software developed by WayCarbon (Climas), which contains a database of the most current emission factors available for each type of emission source (e.g., the Brazilian GHG Protocol Program for Brazil and, when not available, internationally accepted references such as the GHG Protocol, IPCC, EPA and DEFRA).

- viii. Performance monitoring: An internal audit will be carried out annually to recalculate and monitor GHG emissions from beef cattle production, focusing on improving production in the field and also on the quality of information and updating the calculation method.
- ix. Offsetting procedures: Offset will be used to compensate part of the GHG emissions in compliance with the agenda of the **Remove Program**.
- x. Emissions avoided: Since 2020, the Company buys I-RECs (International Renewable Energy Certificated) for all its energy consumption, avoiding GHG emissions from non-renewable energy sources. Thus, scope 2 emissions are zero by the market-based approach.
- xi. Emission not included: Scope 3 emissions of the processing facilities (except the farm's emissions, subject of this document), such as transportation and other production inputs beside cattle (ammonia, acetylene, packaging, etc.). Carrasco's waste was not included in 2020 calculation.

### 3. Carbon Footprint Results

#### 3.1. Base year carbon footprint and boundaries

##### 3.1.1. Product Carbon Footprint

###### 3.1.1.1. Farms

Emissions of greenhouse gases were accounted for in the production of beef cattle with an extensive management system at five farms located in Uruguay. The assessment was prepared by the operational control approach, including emissions from 100% of activities related to livestock.

The farms precursor GHG activities/sources are: i) enteric fermentation; ii) Management of liquid and solid manure; iii) Combustion in mobile sources for pasture maintenance; and, iv) Application of

synthetic fertilizers and/or organic compounds for pasture maintenance. Finally, background emissions were accounted of inputs used for pasture maintenance, synthetic fertilizers and herbicides.

It is important to note that, these emissions occur on farms that produce cattle that supply Minerva Foods' facilities in Uruguay. Therefore, they are not directly controlled by the company. Thus, they can be defined as scope 3 emissions.

The base year for this CFM plan, calculated in July 2020 and June 2021 amounts to:

**Total (Absolute) GHG emissions:** 9498.52 tCO<sub>2</sub>e

**Emissions by Scope:** It is important to remember that, emissions when allocated in SCOPE 3 are under the perspective of Minerva Foods-Uruguay

FARM	Scope 1	Scope 2	Scope 3	Biogenic if known <sup>1</sup>
FARM 1	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	1622.79 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e
FARM2	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	803.46 tCO <sub>2</sub> e	0.60 tCO <sub>2</sub> e
FARM 3	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	1349.41 tCO <sub>2</sub> e	1.62 tCO <sub>2</sub> e
FARM 4	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	3913.01 tCO <sub>2</sub> e	0.74 tCO <sub>2</sub> e
FARM 5	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	1809.85 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e
TOTAL	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	9498.52 tCO <sub>2</sub> e	2.96 tCO <sub>2</sub> e

From the farms' perspective, GHG emissions are associated with Scopes 1 and 3 as shown in the table below.

FARM	Scope 1	Scope 2	Scope 3	Biogenic if known <sup>2</sup>
FARM 1	1613.69 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	9.10 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e
FARM 2	778.26 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	25.20 tCO <sub>2</sub> e	0.60 tCO <sub>2</sub> e
FARM 3	1334.01 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	15.40 tCO <sub>2</sub> e	1.62 tCO <sub>2</sub> e
FARM 4	3905.31 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	7.70 tCO <sub>2</sub> e	0.74 tCO <sub>2</sub> e
FARM 4	1755.93 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	53.92 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e
TOTAL	9387.20 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	111.32 tCO <sub>2</sub> e	2.96 tCO <sub>2</sub> e

The target of the evaluation was the bovine production on the property, gate inside. Thus, the indicator that best portrays the approach contemplated is live animal weight.

<sup>1</sup> See Section 3 of Standard for more details on reporting of biogenic emissions and removals.

<sup>2</sup> See Section 3 of Standard for more details on reporting of biogenic emissions and removals.

The base year for our CFM plan, calculated in July 2020 and June 2021 amounts to:

**Intensity (Ratio) terms:** 5.95 tCO<sub>2</sub>e per live animal weight (averages of the 5 farms).

**Emissions by life cycle stage:**

Emissions by raw material acquisition	Emissions by production
111.32 tCO <sub>2</sub> e	9387.20 tCO <sub>2</sub> e
1.17% of total	98.83% of total

Additionally, **Emissions by raw material acquisition** are emissions from fertilizer and herbicides production and **Emissions by production** are emissions that occurred during the production of beef cattle at agricultural properties.

#### 3.1.1.2. Processing facilities

Emissions of greenhouse gases were accounted for in the production of beef at three of Minerva Foods' slaughterhouses located in Uruguay in 2020. The inventory takes an operational control approach and consolidates scopes 1 and 2 emissions.

The facilities precursor GHG activities/sources are: i) Combustive consumption for stationary combustion; ii) Combustive consumption for mobile combustion; iii) Waste and wastewater treatment; iv) Fugitive emission; v) Enteric fermentation from the cattle onsite at facility; vi) land use change; and vii) electrical energy consumption.

The base year for this CFM plan for scopes 1 and 2 is 2020 (considering emissions from January to December), emissions amount to:

**Total (Absolute) GHG emissions:** 34,355.70 tCO<sub>2</sub>e (Scope 1 and Scope 2 – location-based approach)  
33,587.48 tCO<sub>2</sub>e (Scope 1 and Scope 2 – market-based approach)

### Emissions by Scope:

Processing facilities	Scope 1	Scope 2 (Location-based)	Scope 3	Biogenic if known <sup>3</sup>
Canelones	0.00 tCO <sub>2</sub> e	20.39 tCO <sub>2</sub> e	0.00 tCO <sub>2</sub> e	0.00 tCO <sub>2</sub> e
Carrasco	8,965.75 tCO <sub>2</sub> e	351.82 tCO <sub>2</sub> e	0.00 tCO <sub>2</sub> e	10,690.65 tCO <sub>2</sub> e
Melo	23,512.90 tCO <sub>2</sub> e	368.50 tCO <sub>2</sub> e	0.00 tCO <sub>2</sub> e	29,796.60 tCO <sub>2</sub> e
TOTAL	32,478.65 tCO <sub>2</sub> e	740.71 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	40,487.25 tCO <sub>2</sub> e

Considering a margin of error in the calculations, 3% were added to the emissions at the Canelones and Melo plants and 4.5% to the emissions from the Carrasco plant (at the time, emissions from solid waste had not been calculated).

### Location-based approach Emissions:

Processing facilities	Original emissions	Buffer	Buffered Emissions
Canelones	20.39 tCO <sub>2</sub> e	3.00%	21.00 tCO <sub>2</sub> e
Carrasco	9,317.57 tCO <sub>2</sub> e	4.50%	9,736.86 tCO <sub>2</sub> e
Melo	23,881.40 tCO <sub>2</sub> e	3.00%	24,597.84 tCO <sub>2</sub> e
TOTAL	33,219.36 tCO <sub>2</sub> e	-	34,355.70 tCO <sub>2</sub> e

### Market-based approach Emissions (considering the I-RECs acquisition):

Processing facilities	Original emissions (without scope 2 emissions)	Buffer	Buffered Emissions
Canelones	0 tCO <sub>2</sub> e	3.00%	0.00 tCO <sub>2</sub> e
Carrasco	8,965.75 tCO <sub>2</sub> e	4.50%	9,369.20 tCO <sub>2</sub> e
Melo	23,512.90 tCO <sub>2</sub> e	3.00%	24,218.28 tCO <sub>2</sub> e
TOTAL	32,478.65 tCO <sub>2</sub> e	-	33,587.48 tCO <sub>2</sub> e

The Canelones unit was inactive during 2020, registering low GHG emissions in comparisons with the other operations. It is important to highlight that Canelones unit has a land use change emission avoided of 186.05 tCO<sub>2</sub>e due to tree planting.

<sup>3</sup> See Section 3 of Standard for more details on reporting of biogenic emissions and removals.

The indicator that best portrays the operations is the intensity of GHG emissions using tons of finished product in the country units.

The base year for this CFM plan for scopes 1 and 2 is 2020 (considering emissions from January to December), emissions amount to:

**Intensity (Ratio) terms:** 0.28 tCO<sub>2</sub>e per ton of finished product (average of the 3 slaughterhouses – Market-based).

### 3.1.1.3 Minerva Foods – Uruguay Total Emissions (farms and processing facilities)

#### Location-based approach Emissions – 43,854.22 tCO<sub>2</sub>e:

Unit	Scope 1	Scope 2 (Location-based)	Scope 3
FARM 1	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	1,622.79 tCO <sub>2</sub> e
FARM2	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	803.46 tCO <sub>2</sub> e
FARM 3	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	1,349.41 tCO <sub>2</sub> e
FARM 4	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	3,913.01 tCO <sub>2</sub> e
FARM 5	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	1,809.85 tCO <sub>2</sub> e
Canelones Slaughterhouse	0 tCO <sub>2</sub> e	21.00 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e
Carrasco Slaughterhouse	9,369.20 tCO <sub>2</sub> e	367.66 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e
Melo Slaughterhouse	24,218.28 tCO <sub>2</sub> e	379.56 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e
<b>TOTAL</b>	<b>33,587.48 tCO<sub>2</sub>e</b>	<b>768.22 tCO<sub>2</sub>e</b>	<b>9,498.52 tCO<sub>2</sub>e</b>

#### Market-based approach Emissions – 43,086.00 tCO<sub>2</sub>e:

Unit	Scope 1	Scope 2 (Market-based)	Scope 3
FARM 1	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	1,622.79 tCO <sub>2</sub> e
FARM2	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	803.46 tCO <sub>2</sub> e
FARM 3	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	1,349.41 tCO <sub>2</sub> e
FARM 4	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	3,913.01 tCO <sub>2</sub> e
FARM 5	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	1,809.85 tCO <sub>2</sub> e
Canelones Slaughterhouse	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e
Carrasco Slaughterhouse	9,369.20 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e
Melo Slaughterhouse	24,218.28 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e

TOTAL	33,587.48 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e	9,498.52 tCO <sub>2</sub> e
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**Intensity (Ratio) terms:** Considering that 1 ton of live animal can produce 700kg of product and byproduct (545kg of food products and 155kg byproducts, such as leather, casing, tallow, bones, etc.). Then, the final intensity (ratio) is:

- FARMS: 8.50 tCO<sub>2</sub>e per ton of finished product
- PROCESSING FACILITIES: 0.28 tCO<sub>2</sub>e per ton of finished product

**Total: 8.78 tCO<sub>2</sub>e per ton of finished product**

That represents:

- Food products: 73.8% of the production – 6.48 tCO<sub>2</sub>e per ton of food product
- Byproducts: 26.2% of the production – 2.30 tCO<sub>2</sub>e per ton of byproduct

Emission per type of product (considering the amount of production in 2020):

Product	tCO <sub>2</sub> e/per ton of finished product	%
Meat with bone	0.35	4.0
Meat without bone	5.44	62.0
Offal	0.68	7.8
Leather	0.85	9.7
Tallow, bones and viscera	1.41	16.1
Other byproducts	0.03	0.4
TOTAL	8.78	100%

### 3.2. Carbon Footprint emissions over time

#### 3.2.1. Farms

The carbon footprint will be monitored annually and compared with the carbon footprint of the base year. The table below shows the reduction rates and absolute values expected by the company.

BASE YEAR	YEAR 1	YEAR 2	YEAR 3
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Measure	July 2020 and June 2021	July 2021 and June 2022	July 2023 and June 2023	July 2023 and June 2024
----- tCO <sub>2</sub> e -----				
<b>Absolute</b>	9498.52	9308.55	9122.38	8939.93
<i>% reductions</i>		2%	2%	2%
----- tCO <sub>2</sub> e per live animal weight -----				
<b>Intensity</b>	5.95	5.84	5.72	5.60
<i>% reductions</i>		2%	2%	2%

### 3.2.2. Processing facilities

Minerva Foods' 2030 emission intensity reduction target for scopes 1 and 2 by 30% has sub-targets as shown in the table below:

Measure	BASE YEAR Jan-Dec 2020	YEAR Jan-Dec 2026	YEAR Jan-Dec 2028	YEAR Jan-Dec 2030
----- tCO <sub>2</sub> e per tons of finished product -----				
<b>Intensity</b>	0.28	0.25	0.22	0.20
<i>% reductions</i>		10%	20%	30%

The % reduction refers to Base Year 2020.

## 4. GHG emissions reductions plan

Minerva Foods - Uruguay is committed to lowering its climate impact by setting emissions reduction targets. These targets represent an important tool for driving GHG emissions reductions across the organisation and its value chain, below.

- **Agricultural inputs:** The use of inputs is quite restricted in extensive livestock activity. Low amounts of fuel for animal management and pasture maintenance, small amounts of herbicides and fertilizers are commonly observed. However, the use of urea for pasture fertilization is very common. In the field, urea directly emits CO<sub>2</sub> and N<sub>2</sub>O into the atmosphere and has higher levels of indirect emissions via volatilization. In this sense, a strategy to reduce GHG emissions in the situations evaluated in Uruguay may be to reduce the application of

urea per hectare of pasture. Additionally, to maintain the nitrogen inputs in the soil and consequently its production in fresh matter, an alternative would be to replace the nitrogen source, that is, instead of applying urea, using ammonium sulfate, for example. In this case, replacing urea with ammonium sulfate would reduce GHG emissions in the field (scope 1 from the supplier's perspective) and could also reduce emissions associated with fertilizer production (scope 3). The target for reducing GHG emissions from nitrogen sources applied to soil is 15% by 2035, achieved an average reduction of 5% by 2025 and 10% by 2030.

- Improve the wastewater treatment efficiency: in order to reduce the emissions in Minerva Foods – Uruguay operating units, the technology in wastewater treatment plants will be changed to mitigate the methane emissions in the process.
- Emission avoided: since 2020, the Company buys I-RECs (International Renewable Energy Certificated) for all its energy consumption, avoiding emissions from non-renewable energy sources. Minerva Foods – Uruguay also studies implementing solar energy panels in the Company's facilities to generate clean energy and reduce the consumption from the GRID.
- Input data quality: In order to promote results closer to reality, strategies will be drawn up to reduce the uncertainties of the input data in the accounting of the sector's emissions as a function of production. The essential information for the carbon footprint, use of inputs in livestock management and bovine weight gain will be more rigorously evaluated to more assertively portray emissions from livestock activity. Data from operations will be continued to be accounted for in the 'Climas' software with the support of a consultancy firm (WayCarbon) to guarantee the accuracy of the calculation of emissions for scopes 1 and 2. Also the Company's Corporate Inventory of Greenhouse Gas Emissions will be audited by a third-party organization following the criteria of the Brazilian GHG Protocol Program.
- Carbon Removal: Include carbon removals through soil carbon sequestration obtained from improved grassland management in the scope of the assessment. The target is to identify and convert the pasture model with some level of degradation to better land management by 5% by 2025.

Target	
1	Control of inputs used in the field with possible substitutions
2	Change technology on wastewater treatment plants to mitigate methane emissions

3	Keep Minerva Foods' energy matrix clean through the acquisition of I-RECs (International Renewable Energy Certificated)
4	Improvement of data used in accounting for GHG emissions as a function of production
5	Broader scope of the study, including GHG removals from pasture improvement

## 5. Offset Projects and Carbon Credits

### 5.1. Carbon Offset targets

The Minerva Foods - Uruguay is committed to compensating, at this first moment, a partly of our remaining GHG emissions. Carbon credits represent a pathway for mitigating global emissions outside of organisation and value chain while providing an opportunity to invest in projects that encourage sustainable agriculture in other parts of the world.

Carbon credits will be acquired from accredited suppliers and follow the offset principles set out in Annex IV of the NEPCon CFM.

### 5.2. Carbon Neutrality

The Minerva Foods - Uruguay announced decisive action to combat climate change and protect ecosystems, with the launch of its sustainability strategy, committing to reduce the intensity of its emissions by 30% by 2030 (compared to the year 2020) and have 50% of its beef suppliers participating in the **Renove Program**, which supports the implementation of low-carbon practices in the supply chain.

## 6. Data Quality

### 6.1. Data Quality Assessment

The Minerva Foods - Uruguay has collected real and accurate data to the extent possible. It is important to note that, these emissions occur on farms that produce cattle for slaughter at the Minerva unit in Uruguay. Therefore, their emissions are not directly controlled/responsible by the

company, they are defined as Scope 3 emissions. Thus, the following were included in the accounting of emissions from livestock production farms: litres of fuel consumed, kilogram of fertilizer applied, amount of herbicides, number and weight of cattle, etc. However, information on livestock numbers and weight gain represent critical data quality points at this early stage.

## **6.2. Data Quality Improvement Plan**

The Company is committed to improving its data collection methods and sources to reflect emission totals and reductions that are accurate and relevant. Based on this, the organisation is taking ongoing measures to enhance the quality of data by incorporating industry best practices, using the most recent resources, and prioritising the use of primary data. The following demonstrates our actions to reduce data uncertainty and quality issues in the future.

- Aggregate a greater number of farms participating in the study, producing more representative average values;
- Prioritize agricultural properties with management system implanted. Requesting inputs reports, when possible, from inputs applications in livestock and pasture management. Also, complete output reports, that is, of animal sales;
- For agricultural properties where management systems are not implemented, employee training will be promoted and optimized forms will be developed to collect primary information in accordance with the inputs and outputs evidenced by the purchase and sale invoices.
- Refinement of production information: i) information on monthly sell / buy of cattle will be collected to improve estimates e ii) information on animal weight gain during the period evaluated will be a priority target.
- The calculation of GHG emissions will be internally verified to minimize errors, from typing to checking the methods provided for in international protocols for accounting for emissions.

## **7. Climate Communications, claims, and labels**

## 7.1. Public reporting

Minerva Foods - Uruguay communicates the results of its carbon footprint as well as its progress on GHG emissions reductions on an annual basis. The information is available in the following documents.

Report Description	Name and Date	Content / Purpose	Link
Carbon on Track Plataform	Carbon on Track Plataform – IMAFLORA	Communicate the results and advances of Minerva's carbon estimates within a friendly and didactic platform developed by Imaflora	The link will be available in May/22
Sustainability report	Sustainability Report 2020 Minerva Foods	The report contents provide a comprehensive account of the environmental, social and economic performance of the Company's plants, offices and broader supply chain, and the ways that Minerva Foods has applied industry best practices in managing sustainability. As in previous years, the report has been prepared in accordance with the Core option under the Global Reporting Initiative (GRI) guidelines.	<a href="https://www.minervafoods.com/rs-2020/en/">https://www.minervafoods.com/rs-2020/en/</a>



## 7.2. Claims and Labels

Minerva Foods - Uruguay uses CFM claims and labels to demonstrate our climate efforts to stakeholders. This document serves as supporting evidence to stakeholders wishing to validate the appropriateness of our claims and label use. In particular, we validate that the information supporting our claims and labels are clearly accessible, do not misrepresent any emissions or results, and appropriately identify the parts of the business or product under investigation; carbon footprint results as well as reductions and offsets achieved; date of verification and approvals.

The following demonstrates an overview of our verification scope(s) and related claims and labels.

**Date of verification approval:** 23.02.2022

Date of Label and/or claim use approval:

	CFM Label	CFM claim	Evidence
<b>Product</b>			
Measuring CO <sub>2</sub>		Products with carbon footprint measured	
Reducing CO <sub>2</sub>	N/A	N/A	N/A
CO <sub>2</sub> Neutral		Products with carbon footprint measured and emissions offsee.	