GREENHOUSE GAS EMISSIONS INVENTORY 2024

Institutional

Methodology

Results

Be8

With the purpose of leading energy renewal to create a sustainable future, Be8 produces, through oilseeds and animal fats, a renewable and less polluting biofuel, biodiesel.

In the agribusiness chain, it also processes soybean meal and byproducts. The company values the constant pursuit of excellence and quality in its products, which are ensured through National and International Certifications, and can be considered a pioneer in the Brazilian market, implementing the first large-scale Ethanol Plant in Rio Grande do Sul, and the first vital gluten production line in Brazil.

Commitment to Sustainability is in Be8's DNA. That's why the company has set a goal of becoming carbon neutral by 2030. The decarbonization path developed by the company during 2023 has outlined possible paths to achieve this goal, and has brought significant results for the company, both environmentally and socially.

Image: Passo Fundo (Industry)

Our Numbers

Image: Marialva (Industry)

20 YEARS
of history

9
States of Brazil supplied by the company

15
Countries supplied by Be8

1,587
Suppliers contracted

923,643 M
liters of biodiesel produced per year (largest biodiesel producer in Brazil)

62,323 m³
of volume transported by train

Methodology

Image: La Paloma's Main Office (Paraguai)

The inventory is prepared based on the concepts, principles and guidelines established by the **GHG Protocol methodology**, published by the Brazilian GHG Protocol Program (PBGHGP), using its specifications for accounting, quantification and publication of Corporate Inventories of Greenhouse Gas Emissions.

Equations provided by the **Intergovernmental Panel on Climate Change (IPCC)** are also used to calculate emissions from certain sources and sinks (fertilizers, CO2 removals by green areas).

The report structure follows the specifications of **ISO 14.064:2007 – Greenhouse Gas Management System** – International Organization for Standardization, 2007.

Emissions Calculation

Emission factors published by the **Brazilian GHG Protocol Program** were used through its most recent calculation tool: "ferramenta_ghg_protocol_v2025.0.1".

For Be8 units in Switzerland and Paraguay, emissions factors from the respective **national emissions inventories** were used and, where specific factors were not available, emissions factors from the **UK Department for Business**, **Energy and Industrial Strategy (DEFRA)** as well as the **Ecoinvent v3.11** life cycle analysis database were used.

The global warming potential used for the calculations is that published in **the IPCC Fifth Assessment Report: Climate Change 2013 (AR5)**.

Ecofinance Negócios is responsible for calculating GHG emissions and preparing this report. Be8 is responsible for the activity data provided for the calculation of emissions.

Image: Hydro Power Plant - Soledade

Inventory Period

This inventory covers emissions from activities carried out by Be8 **in 2024**, covering all direct emissions and part of the indirect emissions, including all ventures over which the group has operational control in Brazil, Switzerland and Paraguay.

Inventory Base Year

The **base year** for Be8's GHG emissions inventory is **2022**, the year that was the basis for the development of the company's decarbonization path.

Organizational Boundaries

Be8's emissions inventory follows the operational control accounting approach provided by the GHG Protocol methodology.

In the operational control approach, 100% of emissions from projects in which the Group maintains control over the operation are accounted for, regardless of its shareholding in the source. Thus, emissions from all of the **company's units in Brazil** (Passo Fundo – Industry, Marialva - Industry, Passo Fundo – Office, São Paulo – Office, Ethanol Plant – under construction – and Hydro Power Plant – Soledade), **Switzerland** (Domdidier – Industry; and office) **and Paraguay** (La Paloma - Industry) were accounted for.

Image: Domdidier (Switzerland)

Operational Boundaries

Be8 accounts for all its scope 01 (direct) emissions, scope 02 and the most important sources of scope 03 emissions.

In scope 01, the following sources are considered:

- **Stationary:** Stationary combustion for generation of electricity, steam, heat or power using equipment in a fixed location;
- **Mobile:** Mobile combustion for transport, such as company-owned or company-controlled vehicles, tractors, wheel loaders and forklifts;
- **Industrial Processes and Product Use (IPPU):** Use of Lubricants in industrial equipment;
- **Fugitive:** Unintentional releases of substances, such as hydrofluorocarbons (HFCs) during the use of refrigeration and air-conditioning equipment and CO_2 in fire extinguishers;
- **Wastewater:** Treatment of liquid effluents within the organization's boundaries in anaerobic lagoon, aerobic lagoon, anaerobic reactor, septic tanks and final disposal of effluents;
- **Agriculture Activities:** Treated effluents released into agricultural soils for fertigation purposes;
- **Land Use Change:** Authorized removal of non-primary vegetation for the purpose of implementing the Ethanol plant.

Operational Boundaries

In scope 02, emissions resulting from the acquisition of electrical energy are accounted for.

And in scope 03, the following were accounted for:

- **Transport and distribution (upstream):** Rented or contracted vehicles **paid** by Be8 under the control of third parties used to transport raw materials and/or products/by-products purchased or sold by Be8 (Road, Rail and Maritime Transport);
- **Transport and distribution (downstream):** Rented or contracted vehicles **not paid** by Be8 under the control of third parties used to transport raw materials and/or products/by-products purchased or sold by Be8 (Road, Rail and Maritime Transport);
- **Activities related to fuel and energy not included in Scopes 1 and 2:** Emissions related to the extraction, production and transportation of fuels and energy purchased and consumed by the company

Operational Boundaries

- **Commuting:** Vans chartered by the company to transport employees on the home-to-work route;
- **Business travel:** Air travel by employees;
- **Use of sold products:** End use of goods sold by the company;
- **Solid waste:** Waste composted, incinerated or disposed in landfills not controlled by the company;
- **Wastewater:** Treatment of liquid effluents outside the organization's boundaries (public sewage network).
- **Use of Sold Products:** End use of goods and services sold by the inventory organization (Biodiesel);
- **Unclassifiable Scope 3 emissions:** Stationary combustion emissions from sources not controlled by the company.

Operational Boundaries

The inventory also accounts for the following data:

- **Avoided Emissions:** Amount of greenhouse gases that are no longer being emitted as a result of rail transport, the generation of renewable electricity and the use of biodiesel sold by the company.
- **Carbon Stock:** Amount of carbon not available in the atmosphere, but kept, for example, in biomass above and below ground, in dead organic matter, in organic matter incorporated into the soil, among others.
- **Biogenic Emissions:** CO_2 emissions generated by the combustion of biomass (such as wood chips, biodiesel, ethanol and sugarcane bagasse) or conversions in land use that result in a decrease in carbon stocks, except if this is an area of primary vegetation.

Excluded Sources

GHG emissions from hydroelectric reservoirs were not considered. According to ELETROBRÁS (2012), there is no "international scientific consensus on a methodology that allows estimating GHG emissions in these reservoirs and calculating the emissions balance (or net emissions) of water bodies".

In the case of gases not listed in the Kyoto Protocol but regulated by the Montreal Protocol, only the use of HCFC-22 (R-22) was identified, which was duly accounted for and reported in a specific section.

Image: 3D Project – Ethanol Plant

Emissions by Source (tCO_2e)

Emissions by Source (tCO_2e): Be8 Total

Emissions Source	Total Emissions	
	tCO_2e	%
Scope 1	**18,415.66**	**10.57%**
Wastewater	11,187.86	6.42%
Stationary Combustion	5,729.25	3.29%
Fugitive Emissions	537.64	0.31%
Mobile Combustion	858.28	0.49%
Agriculture Activities	99.66	0.057%
IPPU	2.97	0.002%
Scope 2 (market)	**2,634.52**	**1.51%**
Electricity Purchase	2,634.52	1.51%
Scope 2 (location)	**3,724.03**	**-**
Electricity Purchase	3,724.03	-
Scope 3	**153,147.52**	**87.92%**
Downstream Transportation and Distribution	90,200.50	51.78%
Upstream Transportation and Distribution	42,731.74	24.53%
Use of Sold Products	14,489.81	8.32%
Waste	2,469.42	1.42%
Fuel and Energy Related Activities	2,635.32	1.51%
Commuting	252.19	0.14%
Business Travel	356.39	0.20%
Scope 3 – Wastewater	4.62	0.00%
Scope 3 – Unclassified Emissions	7.53	0.00%
Total (market)	**174,197.70**	**100%**
Total (location)	**175,287.21**	**-**

Note: The "Be8 Total" table includes emissions from Be8 units in Switzerland and Paraguay

Emissions by Source (tCO_2e): Be8 Brazil

Emissions Source	Total Emissions	
	tCO_2e	%
Scope 1	**17,462.57**	**10.16%**
Wastewater	10,851.39	6.31%
Stationary Combustion	5,281.52	3.07%
Mobile Combustion	758.91	0.44%
Fugitive Emissions	493.18	0.29%
IPPU	2.75	0.002%
Agriculture Activities	74.83	0.044%
Scope 2 (market)	**2,633.03**	**1.53%**
Electricity Purchase	2,633.03	1.53%
Scope 2 (location)	**3,722.54**	**-**
Electricity Purchase	3,722.54	-
Scope 3	**151,747.34**	**88.31%**
Downstream Transportation and Distribution	90,200.50	52.49%
Upstream Transportation and Distribution	42,731.74	24.87%
Use of Sold Products	13,324.23	7.75%
Waste	2,448.24	1.42%
Fuel and Energy Related Activities	2,430.27	1.41%
Commuting	252.19	0.15%
Business Travel	350.52	0.20%
Scope 3 - Wasterwater	2.13	0.00%
Scope 3 – Unclassified Emissions	7.53	0.00%
Total (market)	**171,842.94**	**100%**
Total (location)	**172,932.45**	**-**

Emissions by Source (tCO_2e)

In 2024, Be8 emitted **174,197.70 tCO2e**. Direct emissions (**scope 1**) represented **10.57%** of total emissions (18,415.66 tCO2e), with emphasis on those from **wastewater treatment in Anaerobic Lagoons** (6.14% of total emissions; 10,693.59 tCO2e) and the use of **wood chips** (2.26% of total emissions; 3,937.98 tCO2e) and **LPG in boilers** (0.77% of total emissions; 1,343.61 tCO2e), both reported in the Stationary Combustion category. Furthermore, the use of **Bevant**, produced by Be8 itself, in mobile equipment at the Passo Fundo unit since December, has already had a positive impact on the company's scope 1 emissions, due to the reduction in the use of diesel oil.

Indirect **scope 2** emissions resulted from the acquisition of electricity in the conventional free market, in the incentivized free market and in the National Interconnected System, totaling 2,634.52 tCO2e**, 1.51% of the company's emissions**. The **renewable electricity** generated by one of the company's units (HPP – Soledade) was acquired by Be8 itself. With the issuance of the self-declaration by the generator and the purchase of I-RECs for the Marialva industrial unit, scope 2 reporting was carried out using the market choice approach, which resulted in a **reduction of 1,089.51 tCO2e**.

The main concentration of emissions is in indirect sources (**scope 3**), totaling **87.92%**, with emphasis on emissions from **Transportation and Distribution** of third parties not paid by Be8 - **downstream (51.78%)** and **Transportation and Distribution** of third parties paid by Be8 - **upstream (24.53%)**, and for emissions from the **use of sold products**, especially CH_4 and N_2O emissions resulting from the combustion of biodiesel **(8.32%).**

Emissions by Business Unit

Units	Total Emissions (tCO_2e)							
	Scope 1	Scope 2 (Location)	Scope 2 (market)	Scope 3	Total (market)	%	Total (location)	%
Passo Fundo - Industry	5,680.18	2,789.96	2,629.69	95,192.53	**103,502.40**	**59.42%**	**103,662.67**	**59.14%**
Marialva – Industry	11,778.65	929.24	0.00	56,210.14	**67,988.79**	**39.03%**	**68,918.03**	**39.32%**
Passo Fundo – Main Office	2.69	2.72	2.72	259.09	**264.50**	**0.15%**	**264.50**	**0.15%**
São Paulo – Office	1.05	0.62	0.62	46.87	**48.54**	**0.03%**	**48.54**	**0.03%**
Soledade - HPP	0.00	0.00	0.00	2.94	**2.94**	**0.00%**	**2.94**	**0.00%**
Ethanol Plant	0.00	0.00	0.00	35.77	**35.77**	**0.02%**	**35.77**	**0.02%**
Total Brazil	**17,462.57**	**3,722.54**	**2,633.03**	**151,747.34**	**171,842.94**	**-**	**172,932.45**	**98.66%**
La Paloma – Industry	861.40	0.00	0.00	1,213.61	**2,075.01**	**1.19%**	**2,075.01**	**1.18%**
Switzerland - Industry	91.68	1.49	1.49	186.42	**279.59**	**0.16%**	**279.59**	**0.16%**
Switzerland – Office	0.00	0.00	0.00	0.15	**0.15**	**0.00%**	**0.15**	**0.00%**
Total Be8	**18,415.66**	**3,724.03**	**2,634.52**	**153,147.52**	**174,197.70**	**100%**	**175,287.21**	**100%**

Emissions by Business Unit

In 2024, **Be8's two industrial units in Brazil** accounted for **98.45% of the company's GHG emissions**, with **Passo Fundo – Industry** emitting **59.42%** of GHGs and **Marialva – Industry**, **39.03%**. Of the units not located in Brazil, La Paloma (Paraguay) had the highest level of emissions, contributing 1.19% of Be8's emissions.

In **Passo Fundo**, the main sources of emissions came from indirect emissions (**scope 3**) (**92%** of emissions), specifically from the **Transportation and Distribution of products not paid by Be8** (downstream), a source that accounted for **58.1% of emissions**. Regarding scope 1 emissions (5.49% of emissions), the main sources were the use of **wood chips** in boilers and grain dryers (**2.98%** of the unit's emissions) and **wastewater treatment** (**1.56%** of emissions), especially treatment in **anaerobic lagoon** (**1.52%** of the unit's emissions).

The main sources of emissions at the **Marialva** unit are similar to those at Passo Fundo, with **scope 3** accounting for **82.68%** of the unit's emissions, of which **Transportation and Distribution** (downstream) accounts for **44.23%.** The main sources of scope 1 emissions were **wastewater treatment** (13.59%), with emphasis on the **anaerobic lagoon** (13.42%), and the use of **wood chips** (1.25%) and **LPG** (1.93%) in the boilers.

Finally, the emissions reported by the **La Paloma** unit are concentrated mainly in **scope 3 (58.49%)**, with the main source of emissions in this scope being the use of **biodiesel by consumers** (48.88%). In **scope 1** (41.51%), stationary combustion was the main source of emissions (17.16% of the unit's emissions), mainly due to the burning of **wood in boilers and grain dryers** (16.95% of the unit's emissions). Also in **scope 1**, **wastewater treatment** accounted for **16.22%** of emissions, due to treatment in an **anaerobic lagoon** at the unit.

Biogenic Emissions (tCO_2e)

Be8 Total

Emissions Source	Total Emissions	
	tCO_2e	%
Scope 1	**261,364.84**	**10.36%**
Stationary Combustion	252,524.25	10.01%
Mobile Combustion	70.09	0.003%
Land Use Change	8,770.50	0.348%
Scope 3	**2,261,635.47**	**89.64%**
Use of Sold Products	2,243,688.13	88.93%
Downstream Transportation and Distribution	11,688.28	0.46%
Upstream Transportation and Distribution	6,215.01	0.25%
Waste	0.37	0.000%
Commuting	36.68	0.001%
Scope 3 – Unclassified Emissions	7.00	0.000%
Total	**2,523,000.30**	**100.0%**

Be8 Brazil

Emissions Source	Total Emissions	
	tCO_2e	%
Scope 1	**240,620.89**	**9.69%**
Stationary Combustion	231,787.97	9.33%
Mobile Combustion	62.43	0.003%
Land Use Change	8,770.50	0.353%
Scope 3	**2,243,075.67**	**90.31%**
Use of Sold Products	2,225,128.33	89.59%
Downstream Transportation and Distribution	11,688.28	0.47%
Upstream Transportation and Distribution	6,215.01	0.25%
Waste	0.36	0.000%
Commuting	36.68	0.001%
Scope 3 – Unclassified Emissions	7.00	0.000%
Total	**2,483,696.56**	**100.0%**

In 2024, the company's biogenic emissions were concentrated in the use by consumers of the sold products, especially biodiesel – scope 3 (88.93% of total biogenic emissions). Emissions from stationary combustion – scope 1 (10.01% of total biogenic emissions) from the burning of wood chips in boilers and in the grain dryer were also relevant.

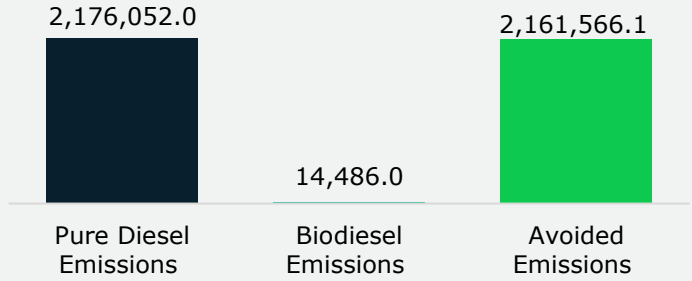
Avoided Emissions (tCO_2e)

The biodiesel sold by Be8 prevents GHG emissions from users of this fuel. The emissions resulting from the **use of Biodiesel** by consumers are 14,485.97 tCO_2e. However, if, instead of Biodiesel, pure diesel oil were used in vehicles, the emissions would be 2,176,052.03 tCO_2e. Therefore, it can be stated that the emissions avoided due to the sale of Biodiesel are **2,161,566.1 tCO_2e.**

The **generation of renewable electricity** at HPP – Soledade, purchased by Be8 itself, prevented the company from emitting **160.27 tCO_2e**. In addition, the purchase of I-RECs guaranteed the 100% renewable origin of the electricity at the **Marialva** unit, reducing scope 2 emissions by **929.24 tCO_2e**.

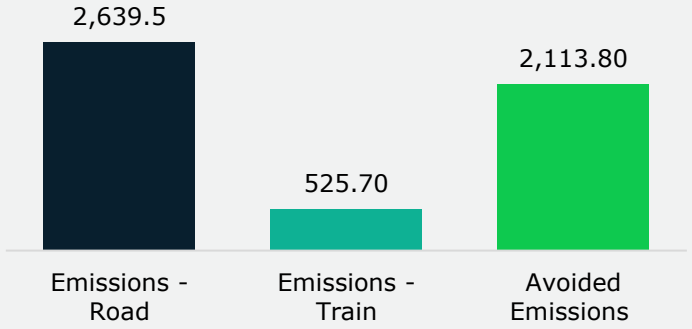
Finally, replacing road transport with **rail** also avoided GHG emissions. In 2024, Be8 transported 62,323 m3 of Biodiesel (B100) by rail, avoiding GHG emissions of **2,113.8 tCO_2e**. This year, Be8 reduced the use of rail due to operational failures caused by floods in Rio Grande do Sul. As a result, avoided emissions were lower than expected.

Avoided Emissions (tCO_2e) – Sale of Biodiesel



Note - Emissions from pure diesel: Emissions that would occur if diesel were consumed instead of biodiesel

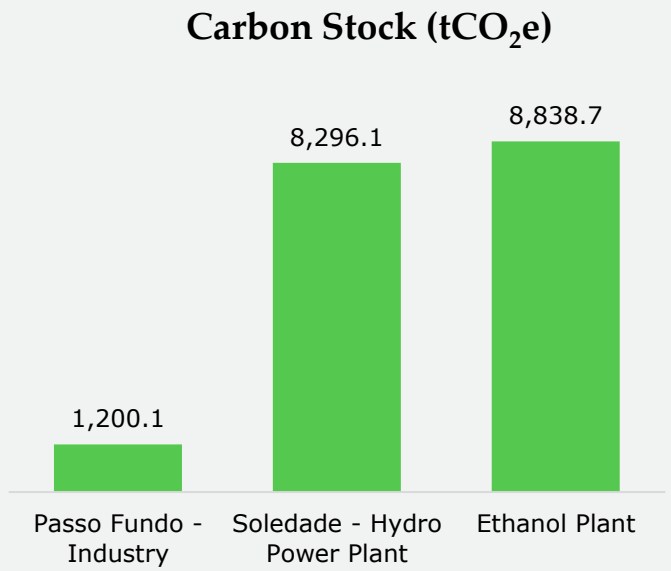
Avoided Emissions (tCO_2e) – Train Transport



Note - Road emissions: Emissions that would occur if road transport were used instead of rail transport

Carbon Stock

Be8 also has a carbon stock totaling **18,334.88 tCO_2e**, considering carbon above and below ground, due to the areas of Atlantic Forest preserved in the units. The carbon stock associated with CGH – Soledade (8,296.1 tCO_2e) and the Ethanol Plant (Passo Fundo region), which is in the implementation phase (8,838.7 tCO_2e), is noteworthy.



2024 x 2023

Between **2023 and 2024**, Be8's GHG emissions **reduced by 10.7%**, considering **scopes 1, 2** and **3.** And reduced by **9.9%,** considering **scopes 1 and 2**.

In **scope 1**, GHG emissions reduced by **11.5%.** The source that most influenced the reduction of scope 1 emissions was **wastewater treatment**. The improvement made to the Passo Fundo wastewater treatment system, reducing both the volume of effluents (-31.6% in **Lagoon 1** and -33.7% in **Lagoon 2**) and the organic load at the inlet of the unit's anaerobic lagoons (in the first anaerobic lagoon, from 9.91 to 6.24 kgCOD/m^3, -37.0%, and from 4.34 to 1.34 kgCOD/ m^3, -69.1%, in the second), contributed to a reduction of **1,988.04 tCO_2e (-15.1%)** in this category.

< 1 | 2 >

Emissions Source	Emissions (tCO_2e)			
	2024	2023	Variation (tCO_2e)	Variation (%)
Scope 1	**18,415.66**	**20,817.93**	**-2,402.28**	**-11.5%**
Wastewater	11,187.86	13,175.90	-1,988.04	-15.1%
Stationary Combustion	5,729.25	6,222.21	-492.96	-7.9%
Fugitive Emissions	537.64	706.37	-168.73	-23.9%
Mobile Combustion	858.28	704.25	154.02	21.9%
Agriculture Activities	99.66	5.74	93.92	1,636.5%
IPPU	2.97	3.46	-0.49	-14.1%
Scope 2 (location)	**3,724.03**	**2,700.66**	**1,023.37**	**37.9%**
Electricity Purchase	3,724.03	2,700.66	1,023.37	37.9%
Scope 2 (market)	**2,634.52**	**2,542.18**	**92.35**	**3.6%**
Electricity Purchase	2,634.52	2,542.18	92.35	3.6%
Scope 3	**153,147.52**	**171,766.87**	**-18,619.35**	**-10.8%**
Downstream Transportation and Distribution	90,200.50	139,688.42	-49,487.92	-35.4%
Upstream Transportation and Distribution	42,731.74	13,566.88	29,164.86	215.0%
Use of Sold Products	14,489.81	13,578.02	911.79	6.7%
Waste	2,469.42	2,188.23	281.19	12.9%
Fuel and Energy Related Activities	2,635.32	2,317.44	317.88	13.7%
Commuting	252.19	259.32	-7.13	-2.8%
Business Travel	356.39	164.58	191.82	116.6%
Scope 3 – Wastewater	4.62	3.98	0.64	16.1%
Scope 3 – Unclassified Emissions	7.53	N/O	-	-
Total (market)	**174,197.70**	**195,126.98**	**-20,929.28**	**-10.7%**
Total (location)	**175,287.21**	**195,285.46**	**-19,998.25**	**-10.2%**

2024 x 2023

Still in scope 1, **the emission reduction** from the use of **wood chips** in boilers and grain dryers (stationary combustion) in Passo Fundo and Marialva (from 4,386.61 tCO_2e to 3,937.98 tCO_2e, -10.2%) stands out, due to projects implemented by the company **to improve efficiency**, as foreseen by the company's **decarbonization path**.

In **scope 2**, although Be8's absolute electricity consumption increased by only 0.8% between 2023 and 2024, scope 2 emissions increased by 37.9% using the location approach, due to the **41.5% increase in the Brazilian emission factor for electricity purchases** from the National Interconnected System (SIN) between 2023 and 2024. However, using the **market choice approach**, emissions increased by only **3.6%**, due to **Be8's purchase of renewable electricity** generated by HPP – **Soledade** and the **acquisition of I-RECS** to guarantee the 100% renewable origin of the electricity from the **Marialva** unit.

In **scope 3**, emissions linked to upstream and downstream transportation and distribution had a **reduction of 13.3% compared to 2023** (-20,323.06 tCO_2e). The main reason was the reduction in the average distance traveled by soybeans to Be8, due to the greater acquisition of the input in the southern region of Brazil and less acquisition from more distant regions, thus contributing to climate change and strengthening the regional economy.

In 2024, Be8 advanced in the construction of its Ethanol Plant, which resulted in new scope 1 and 3 sources**: Land Use Change (scope 1)**, arising from the preparation of the land for the Plant; and **Scope 3 – Unclassified Emissions (scope 3)**, due to stationary combustion not controlled by Be8 at the construction site.

Emissions by Non-Kyoto Gases

HCFC-22 gas (R22), replaced in air conditioning units, was the only non-Kyoto gas emitted by Be8.

Emissions by Non-Kyoto Gases

Emissions Source	Total Emissions tCO_2e
Scope 1	**4.14**
Passo Fundo – Industry	
Air conditioning units (HCFC-22)	4.14
Total	**4.14**

Emissions by GHG
Be8 Total

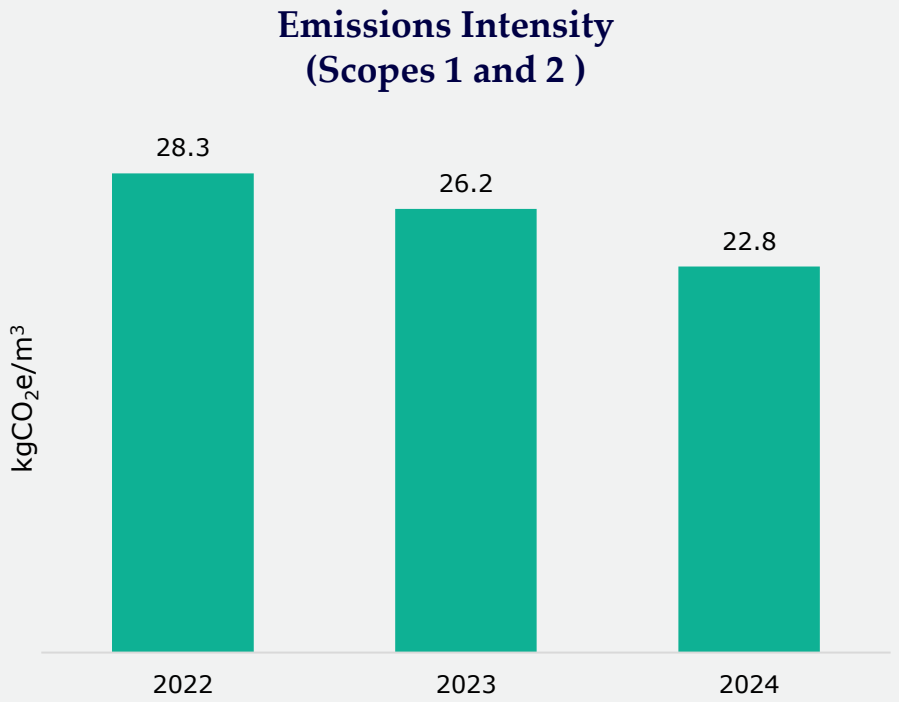
GHG	Emissions in Metric Tons				Emissions in Metric Tons of CO_2 equivalent (tCO_2e)			
	Scope 1	Scope 2 (Location-based Approach)	Scope 2 (Market-based Approach)	Scope 3	Scope 1	Scope 2 (Location-based Approach)	Scope 2 (Market-based Approach)	Scope 3
CO2	2,287.94	3,724.03	2,634.52	135,237.79	2,287.94	3,724.03	2,634.52	135,237.79
CH4	462.99			344.73	12,963.72			9,652.34
N2O	9.91			31.16	2,626.71			8,257.39
R-410A	0.26			-	500.49			-
HFC-134a	0.03			-	36.79			-
Total					**18,415.66**	**3,724.03**	**2,634.52**	**153,147.52**

Emissions by GHG
Be8 Brazil

GHG	Emissions in Metric Tons				Emissions in Metric Tons of CO_2 equivalent (tCO_2e)			
	Scope 1	Scope 2 (Location-based Approach)	Scope 2 (Market-based Approach)	Scope 3	Scope 1	Scope 2 (Location-based Approach)	Scope 2 (Market-based Approach)	Scope 3
CO2	2,094.92	3,722.54	2,633.03	135,021.19	2,094.92	3,722.54	2,633.03	135,021.19
CH4	445.41			342.09	12,471.36			9,578.40
N2O	9.07			26.97	2,403.40			7,147.75
R-410A	0.24			-	458.18			-
HFC-134a	0.03			-	34.71			-
Total					**17,462.57**	**3,722.54**	**2,633.03**	**151,747.34**

Indicator

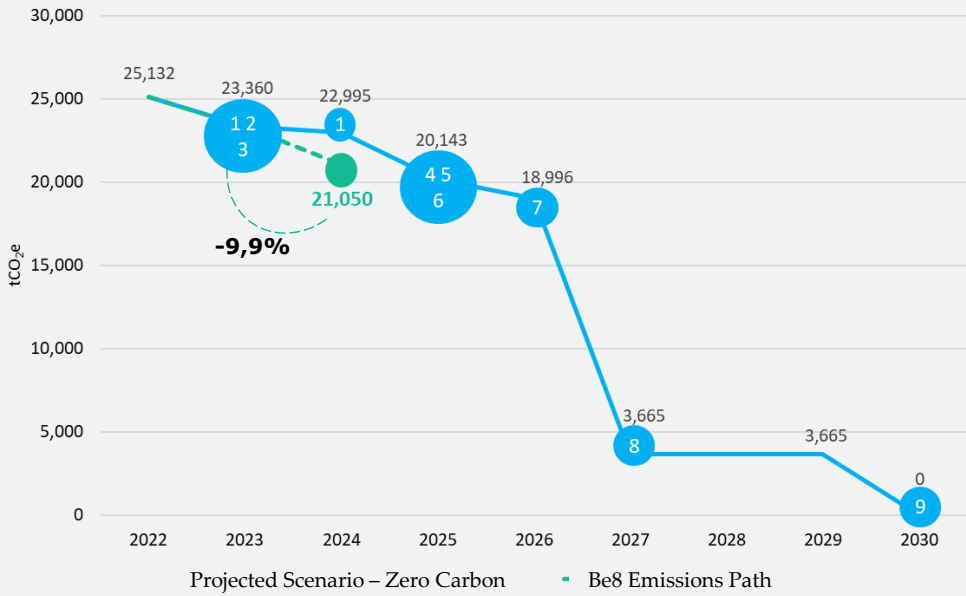
In order to measure the evolution of the company's performance, the organization monitors an indicator that represents the amount of $kgCO_2e$ of scope 1 and 2 emitted for each m3 of biodiesel produced. In 2024, Be8 produced 923,643.5 m^3 of biodiesel and emitted 21,050.18 tCO_2e (scope 1 and 2). Therefore, the company's emission indicator in 2024 was 22.8 $kgCO_2e/m^3$, a **reduction of 13.01%** compared to **2023** and **19.47%** compared to the base year (**2022**).



Decarbonization Path

Be8 aims to achieve **carbon neutrality by 2030**, in relation to scopes 1 and 2. To this end, in 2023, a **Decarbonization Path** was developed, led by the Environment team in partnership with the consultancy Ecofinance Negócios, in which possible actions to reduce GHG emissions were mapped.

In 2024, Be8 achieved a **greater reduction than projected**, mainly due to the **anticipated reduction in emissions from wastewater treatment and the purchase of I-RECs**. The main action projected for 2024, the 365 tCO2e reduction resulting from the use of wood chips, was achieved, **exceeding the expected reduction by 84 tCO_2e**. The emissions reduction achieved could have been even greater, being mitigated by the increase in the SIN emission factor (41.5%). In total, there was a **9.9%** reduction in scope 1 and 2 emissions, compared to 2023.



Graph Number	Emissions Reduction Project	tCO_2e
1	Reduction in the use of Wood Chips	1,189
2	Electricity Purchase from HPP	159
3	Improving Production Efficiency (2023)	790
4	Ethanol in Mobile Sources	45
5	Solar Energy Projects	543
6	Purchase of I-RECS	2,264
7	Use of Biodiesel in LGP Boilers	1,147
8	Biogas Project	15,331
9	Residual Emissions Offsetting	3,665
Total		**25,132**

Emissions Consolidation

Emissions Source	Total Emissions (tCO_2e)									Total	
	Passo Fundo Industry	Marialva Industry	La Paloma Industry	Switzerland Industry	Soledade HPP	Passo Fundo Office	São Paulo Office	Switzerland Office	Ethanol Plant	tCO_2e	%
Scope 1	5,680.18	11,778.65	861.40	91.68	0.00	2.69	1.05	0.00	0.00	18,415.66	10.6%
Wastewater	1,613.29	9,238.10	336.48	0.00	0.00	0.00	0.00	0.00	0.00	11,187.86	6.4%
Stationary Combustion	3,102.02	2,179.50	356.07	91.65	0.00	0.00	0.00	0.00	0.00	5,729.25	3.3%
Fugitive Emissions	252.05	239.05	44.46	0.00	0.00	1.04	1.04	0.00	0.00	537.64	0.3%
Mobile Combustion	710.33	46.91	99.34	0.03	0.00	1.65	0.01	0.00	0.00	858.28	0.5%
Agriculture Activities	0.00	74.83	24.83	0.00	0.00	0.00	0.00	0.00	0.00	99.66	0.1%
IPPU	2.49	0.26	0.23	0.00	0.00	0.00	0.00	0.00	0.00	2.97	0.0%
Scope 2 (market)	2,629.69	0.00	0.00	1.49	0.00	2.72	0.62	0.00	0.00	2,634.52	1.51%
Electricity Purchase	2,629.69	0.00	0.00	1.49	0.00	2.72	0.62	0.00	0.00	2,634.52	1.5%
Scope 2 (location)	2,789.96	929.24	0.00	1.49	0.00	2.72	0.62	0.00	0.00	3,724.03	2.1%
Electricity Purchase	2,789.96	929.24	0.00	1.49	0.00	2.72	0.62	0.00	0.00	3,724.03	2.1%
Scope 3	95,192.53	56,210.14	1,213.61	186.42	2.94	259.09	46.87	0.15	35.77	153,147.52	87.9%
Downstream Transportation and Distribution	60,128.56	30,071.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90,200.50	51.8%
Upstream Transportation and Distribution	25,434.73	17,297.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42,731.74	24.5%
Use of Sold Products	6,504.11	6,820.12	1,014.28	151.31	0.00	0.00	0.00	0.00	0.00	14,489.81	8.3%
Waste	1,229.01	1,216.28	15.11	6.07	2.94	0.00	0.00	0.00	0.00	2,469.42	1.4%
Fuel and Energy Related Activities	1,731.65	695.86	182.03	23.01	0.00	2.07	0.69	0.00	0.00	2,635.32	1.5%
Commuting	164.47	87.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	252.19	0.1%
Business Travel	0.00	21.21	0.00	5.87	0.00	255.28	45.79	0.00	28.24	356.39	0.2%
Scope 3 – Wastewater	0.00	0.00	2.19	0.15	0.00	1.74	0.39	0.15	0.00	4.62	0.0%
Scope 3 – Unclassified Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.53	7.53	0.0%
Total (market)	**103,502.40**	**67,988.79**	**2,075.01**	**279.59**	**2.94**	**264.50**	**48.54**	**0.15**	**35.77**	**174,197.70**	**100.0%**
Total (location)	**103,662.67**	**68,918.03**	**2,075.01**	**279.59**	**2.94**	**264.50**	**48.54**	**0.15**	**35.77**	**175,287.21**	**-**

Biogenic Emissions Consolidation

Emissions Source	Biogenic Emissions (tCO_2e)									Total	
	Passo Fundo Industry	Marialva Industry	La Paloma Industry	Switzerland Industry	Soledade HPP	Passo Fundo Office	São Paulo Office	Switzerland Office	Ethanol Plant	tCO_2e	%
Scope 1	181,831.50	50,017.52	20,741.16	2.78	0.40	0.97	0.00	0.00	8,770.50	261,364.84	10.4%
Stationary Combustion	181,779.61	50,008.35	20,736.29	0.00	0.00	0.00	0.00	0.00	0.00	252,524.25	10.0%
Mobile Combustion	51.89	9.16	4.87	2.78	0.40	0.97	0.00	0.00	0.00	70,09	0.0%
Land Use Change	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8,770.50	8,770.50	0.3%
Scope 3	1,097,778.28	1,145,290.39	7,101.48	11,458.32	0.00	0.00	0.00	0.00	7.00	2,261,635.47	89.6%
Use of Sold Products	1,086,178.09	1,138,950.24	7,101.48	11,458.31	0.00	0.00	0.00	0.00	0.00	2,243,688.13	88.9%
Downstream Transportation and Distribution	7,876.64	3,811.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11,688.28	0.5%
Upstream Transportation and Distribution	3,699.26	2,515.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6,215.01	0.2%
Waste	0.36	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.37	0.0%
Commuting	23.92	12.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.68	0.0%
Scope 3 – Unclassified Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00	7.00	0.0%
Total	**1,279,609.79**	**1,195,307.90**	**27,842.64**	**11,461.10**	**0.40**	**0.97**	**0.00**	**0.00**	**8,777.50**	**2,523,000.30**	**100%**

(A free translation of the original in Portuguese)

Independent auditor's limited assurance report on the 2024 Greenhouse Gas Emissions Inventory

To the Shareholders and Management
Be8 S.A.
Passo Fundo - RS

Introduction

1 We have been engaged by Be8 S.A. ("Be8" or "Company") to present our limited assurance report on the information included in the 2024 Greenhouse Gas Emissions Inventory or "2024 GHG Inventory"), for the year ended December 31, 2024. This report contains, among other information, a description of the procedures for significant quantifications, the criteria, the methodology for preparing the 2024 GHG Inventory, and the organizational and operational limits related to the Company's activities.

2 Our limited assurance does not cover prior-period information, or any other information disclosed together with the 2024 GHG Inventory, including any images, audio files or videos.

Responsibilities of the management of Be8 S.A.

3 The Company's management is responsible for the preparation and fair presentation of the information included in the 2024 GHG Inventory, in accordance with the criteria defined in paragraph 4 and limits defined in paragraph 5 below, and for such internal control as it determines is necessary to enable the preparation of information free from material misstatement, whether due to fraud or error.

4 The management of Be8 S.A. is responsible for:

(a) selecting or establishing adequate criteria for the preparation and presentation of the information included in the 2024 GHG Inventory;

(b) preparing the information in accordance with the Specifications of the Brazilian GHG Protocol Program: Accounting, Quantification and Publication of Corporate Greenhouse Gas Emission Inventories. 2nd edition and its technical standards; in accordance with ABNT NBR ISO 14064-1/2022: Part 1 -"Especificação e orientação a organizações para quantificação e elaboração de relatórios de emissões e remoções de gases de efeito estufa" (Specification and guidance to organizations for quantification and reporting of greenhouse gas emissions and removals);

(c) designing, implementing and maintaining internal controls over the significant information used in the preparation of the 2024 GHG Inventory, so that it is free from material misstatement, whether due to fraud or error.

5 As established by the aforementioned criteria, an organizational limit was defined for the 2024 GHG Inventory, considering the operational control approach. The operational limits considered include emission sources from scopes 1 and 2 according to the Brazilian GHG Protocol Program, as well as the following scope 3 emission categories: Transportation and distribution (upstream), Transportation and distribution (downstream), Fuel and energy-related activities not included in Scopes 1 and 2, Employee travel, Business travel, Use of products sold, Solid waste, and Effluents.

Limitations to the preparation and presentation of information related to greenhouse gases

6 In the preparation and presentation of the calculations of greenhouse gas (GHG) emissions presented in the 2024 GHG Inventory, Management followed the definitions in the Specifications of the Brazilian GHG Protocol Program, therefore, the information presented in the GHG Emissions Inventory does not aim to provide assurance with respect to the compliance with social or economic laws and regulations.

7 The absence of a significant set of established practices on which to base the evaluation and measurement of non-financial information allows for different but acceptable evaluation and measurement techniques, which can affect comparability between entities and over time.

Our independence and quality control

8 We comply with the independence and other ethical requirements of the Federal Accounting Council (CFC) in NBCs PG 100 and 200 and NBC PA 291, which are based on the principles of integrity, objectivity and professional competence, and which also consider the confidentiality and behavior of professionals.

9 We apply the Brazilian and international quality control standards established in NBC PA 01, issued by the CFC, and thus maintain an appropriate quality control system that includes policies and procedures related to compliance with ethical requirements, professional standards, legal requirements and regulatory requirements.

Independent auditor's responsibility

10 Our responsibility is to express a conclusion on the information included in the Company's 2024 GHG Inventory, based on our limited assurance engagement carried out in accordance with the Technical Communication CTO 01/12, "Issuance of an Assurance Report related to Sustainability and Social Responsibility", issued by the CFC, based on the Brazilian standards NBC TO 3000, "Assurance Engagements Other than Audits or Reviews", and NBC TO 3410 - "Assurance Engagements on Greenhouse Gas Emissions and Climate Change Statements" also issued by the CFC, which are equivalent to the international standard ISAE 3000, "Assurance Engagements Other than Audits or Reviews of Historical Financial Information" and ISAE 3410 - Assurance Engagements on Greenhouse Gas Statements, both issued by the International Auditing and Assurance Standards Board (IAASB), applicable to non-financial information.

11 The aforementioned standards require that the work be planned and performed to obtain limited assurance that the information included in the 2024 GHG Inventory, taken as a whole, is free from misstatement, whether due to fraud or error, and to issue a limited assurance report that includes our conclusion.

12 A limited assurance engagement conducted in accordance with the Brazilian standards NBC TO 3000 and NBC TO 3410 mainly consists of making inquiries of management and other professionals of the Company involved in the preparation of the information, as well as applying analytical procedures to obtain evidence that allows us to issue a limited assurance conclusion on the information, taken as a whole. A limited assurance engagement also requires the performance of additional procedures when the independent auditor becomes aware of matters that lead him to believe that the information taken as a whole might present significant misstatements.

13 As part of a limited assurance engagement in accordance with NBC TO 3000 (ISAE 3000) and NBC TO 3410 (ISAE 3410), we exercise professional judgment and maintain professional skepticism during our work. We also:

(a) Determine the adequacy in the Company's circumstances of the use of the Specifications of the Brazilian GHG Protocol Program as basis of preparation of the 2024 GHG Emissions Inventory.

(b) Perform risk assessment procedures, including obtaining an understanding of internal controls relevant to the work to identify areas where material misstatements may arise, whether due to fraud or error, but not for the purpose of expressing a conclusion on the effectiveness of the Company's internal controls.

(c) Design and perform procedures responsive to cases in which it is probable that material misstatements in information on GHG emissions will arise. The risk of not detecting a material misstatement resulting from fraud is higher than that arising from errors, since fraud may involve collusion, forgery, intentional omissions or the override of internal controls.

Summary of the procedures performed

14 The procedures selected are based on our understanding of the aspects related to the compilation and presentation of the information included in the 2024 GHG Inventory, other circumstances of the engagement and our analysis of the areas in which significant misstatements may exist. The procedures comprised:

(a) planning the work, taking into consideration the criteria and limits described in the previous paragraphs, the materiality and the volume of quantitative and qualitative information and the operating and internal control systems that were used to obtain the information included in the Company's 2024 GHG Inventory;
(b) understanding the calculation methodology and the procedures adopted for the compilation of the emissions information through interviews with the managers in charge of the preparation of the information;
(c) technical visits and video conference with the head office and other operating units considered significant to interview the members of management and collect data and information; and
(d) applying analytical procedures and substantive testing, as applicable, to quantitative information and making inquiries regarding the qualitative information and its correlation with the information included in the 2024 GHG Inventory.

15 Our procedures did not include assessing the adequacy of the design or operating effectiveness of the controls, testing the data on which the estimates are based or separately developing our own estimate to compare with the estimate of Be8.

Basis for conclusion

16 We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our limited assurance conclusion.

Scope and limitations

17 The procedures applied in a limited assurance engagement are substantially less detailed than those applied in a reasonable assurance engagement, the objective of which is the issuance of an opinion on the information included in the 2024 GHG Inventory. Consequently, we were unable to obtain reasonable assurance that we would become aware of all significant matters that might be identified in a reasonable assurance engagement, the objective of which is the issuance of an opinion. Had we performed an engagement with the objective of issuing an opinion, we might have identified other matters and possible misstatements in the information included in the 2024 GHG Inventory. Therefore, we do not express an opinion on this information.

18 Non-financial data are subject to more inherent limitations than financial data, due to the nature and diversity of the methods used to determine, calculate and estimate these data. Qualitative interpretations of the materiality, relevance and accuracy of the data are subject to individual assumptions and judgments. Furthermore, we did not carry out any work on the data reported for prior periods, nor future projections and goals.

19 Information and data on sustainability actions and activities, general information and views related to the climate change subject, description of management activities of the process of preparing the 2024 GHG Inventory, and description of operational activities, which are not the basis for the 2024 GHG Inventory, were not part of the scope of the work performed and, therefore, have not been included in our limited assurance engagement.

Conclusion

20 Based on the procedures performed, described herein, no matter has come to our attention that causes us to believe that the information included in the 2024 Greenhouse Gas Emissions Inventory of Be8 S.A., for the year ended December 31, 2024, has not been fairly presented, in all material respects, in accordance with the criteria defined in paragraph 4 and limits defined in paragraph 5 above.

Other matters - Restriction on use and distribution

21 This report was prepared for the use of Be8 S.A. and may be presented or distributed to third parties, as long as they are familiar with the object and criteria applicable to this assurance engagement, considering its specific purpose described in the first paragraph of this report.

22 Any party other than Be8 S.A. who obtains access to this report, or a copy thereof, and relies on the information contained therein does so at their own risk. We do not accept or assume any responsibility and deny any liability to any party other than Be8 S.A. for our engagement, the assurance report or our conclusions.

São Paulo, March 24, 2025

PricewaterhouseCoopers
Auditores Independentes Ltda.
CRC 2SP000160/O-5

Maurício Colombari
Contador CRC 1SP195838/O-3

Be8

Ecofinance
NEGÓCIOS