Inventory of greenhouse gas emissions

Inventory year: 2021

Karina Industria e Comércio de Plásticos Ltda

Trade name: Karina

CNPJ: 51.254.159/0001-73

Economic sector: Manufacturing

Sub-sector: Chemical manufacturing

Address: Avenida Paquistão - 788 - - Jardim Cumbica - Guarulhos - SP - 07240-130

Responsible for publishing the inventory: Flavia Cristina Ferreira Lopes (flavia.lopes@karina.com.br)

Institutional information

Karina is one of the leading experts in the production of compounds in the global market. A pioneer in the country and a reference in its segment for 40 years, it excels at finding technological solutions that meet the needs of its customers.

Its products and infrastructure comply with the most stringent national and international standards and legislation governing the production of PVC Compounds, Polyolefin Specialties and Masterbatch.

We are leaders in the Brazilian market for PVC compounds, we have high production capacity, state-of-the-art technological laboratory and we serve customers in the Brazilian and international markets. We are committed to innovation, sustainability and new product development.

Inventory data

Responsible for preparing the inventory

Flávia Cristina Ferreira Lopes

E-mail of the person responsible

flavia.lopes@karina.com.br

Inventory Year

2021

Verification

The inventory was verified by a third party: No

Inventory type

Complete

1. Inventory limits

Organizational Limits

Below is a list of the organization's units and controlled companies included in this inventory. Detailed reporting of emissions from units that have scope 1 emissions equal to or greater than 10,000 tCO_2e per year is mandatory. Reporting the emissions of other units, as well as those of subsidiaries, is optional. Emissions detailed by unit can be found in Section 2.7 - Emissions by operating units.

Key:

H Headquarters C Controlled Company U Unit

[Do the headquarters have operational control? | % of equity interest in the headquarters]

H Karina

- U Karina
- U Karina

1.1 Which consolidation approach was used in the inventory?

Reporting of emissions under the Operational Control approach.

1.2 Organizational chart

Operational Limits

1.3 Operational limits reported in inventory

Scope 1

- Mobile combustion
- Stationary combustion
- Industrial processes
- Solid waste and liquid effluents
- Leakage

Scope 2 - Location-based approach

- Acquisition of electricity

Scope 3

1. Purchased Goods and Services
4. Transportation and distribution (upstream)
5. Waste generated in operations
6. Business travel
7. Employee commuting (home-work)
9. Transportation and distribution (downstream)
10. Processing of products sold

2. Emissions

Operational Control

2.1 Summary of total emissions

GHG	In tons of gas				In tons of CO_2 equivalent (tCO_2e)			
	Scope 1	Scope 2 - Location-based approach	Scope 2 - Purchase-based approach	Scope 3	Scope 1	Scope 2 - Location-based approach	Scope 2 - Purchase-based approach	Scope 3
CO_2	1,467.481	11,258.494	0.000	506,602.165	1,467.481	11,258.494	0.000	506,602.165
CH_4	1.091	0.000	0.000	7.423	30.548	0.000	0.000	207.844
N_2O	0.034	0.000	0.000	0.945	9.010	0.000	0.000	250.425
HFC	0.023	0.000	0.000	0.000	43.625	0.000	0.000	0.000
PFC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SF_6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NF_3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total					**1,550.664**	**11,258.494**	**0.000**	**507,060.434**

2.2 Scope 1 emissions disaggregated by category

Category	Emissions (tCO_2e)	Biogenic CO_2 emissions (t)	Biogenic CO_2 removals (t)
Mobile combustion	1,198.457	119.681	0.000
Stationary combustion	299.019	0.713	0.000
Industrial processes	0.357	0.000	0.000
Solid waste and liquid effluents	8.624	0.000	0.000
Fugitive emissions	44.207	0.000	0.000
Total	1,550.664	120.394	0.000

2.3 Scope 2 emissions disaggregated by category

Location-based approach

Category	Emissions (tCO_2e)	Biogenic CO_2 emissions (t)	Biogenic CO_2 removals (t)
Acquisition of electricity	11,258.494	0.000	0.000
Total	11,258.494	0.000	0.000

2.4 Scope 3 emissions disaggregated by category

Category	Emissions (tCO_2e)	Biogenic CO_2 emissions (t)	Biogenic CO_2 removals (t)
1. Purchased Goods and Services	454,527.020	0.000	0.000
4. Transportation and distribution (upstream)	13,976.265	1,377.143	0.000
5. Waste generated in operations	187.738	0.024	0.000
6. Business travel	35.548	4.316	0.000
7. Employee commuting (home-work)	1,284.875	232.468	0.000
9. Transportation and distribution (downstream)	776.178	89.578	0.000
10. Processing of products sold	36,272.810	0.000	0.000
Total	507,060.434	1,703.529	0.000

2.5 Other greenhouse gases not covered by the Kyoto Protocol

Not reported.

2.6 Emissions outside Brazil

Not reported.

2.7 Emissions per unit

Not reported.

3. Methods

3.1 Intersectoral methods and/or tools

Was any intersectoral method and/ or tool used in addition to those provided by the Brazilian GHG Protocol Program?

None.

3.2 Methods and/or tools for specific industries

Was any method and/ or tool used for specific sectors?

None.

3.3 Emission factors

Was any emission factor other than those suggested by the Brazilian GHG Protocol Program used?

None.

4. Other Elements

Optional fields

4.1 Information on the organization's performance, compared to internal benchmarks (e.g. other units) or external benchmarks (e.g. organizations in the same sector).

The performance indicator used as a benchmark is tCO2e/t produced and the value calculated in this cycle was 0.041 tCO2e/t. Compared to 2020, there was an increase in intensity of 79%. Despite the 12% reduction in scope 1, Karina's emissions are greatly influenced by scope 2; although maintaining practically the same consumption, emissions more than doubled compared to the previous year due to GRID factors.

4.2 Description of GHG emission indicators for the organization's activities. For example, tCO_2e/manufactured products.

Karina Plásticos uses the following indicators to monitor its emissions:
• tCO2e per total ton produced, considering scopes 1 and 2;
• scopes 1, 2, and 3 at their absolute tCO2e values.

4.3 Description of strategies and projects for the management of GHG emissions.

Aware of the role it plays on the plastics industry in society and the environment, Karina Plásticos, as a leader and pioneer in developments in the thermoplastic market, seeks to adopt actions that contribute to reducing environmental impacts. More than a philosophy, respecting the environment and creating sustainable alternatives for our production process and raising awareness among our employees are goals for Karina and for all parties involved, focused on actions for "today" and that reflect on the future.
The "Environmental" work theme was then created, represented by the EKO Logo to publicize the actions developed.

Continuing the actions that directly impact the GHG Inventory, we changed 10% of the forklift fleet to electrical equipment and the LPG elimination project continues. Next year is expected to follow the fleet exchange and the replacement of LPG by energy in the restaurant and in the company's changing rooms.
We also formulate our long-term goals:
• Achieve carbon neutrality by 2030 in scopes 1 and 2;
• Operate with 100% renewable energy by 2025;
• Elimination of LPG consumption by 2025.

4.4 Information on contracts with customers and suppliers that include clauses linked to the preparation of GHG inventories and/or the submission of related information.

Currently, there is no contractual clause with our customers and/or suppliers that requests the submission of the GHG Inventory.

4.5 Information on uncertainties, exclusions of data sources and other characteristics of inventory preparation.

The calculation of uncertainties performed for Karina's scope 1 and scope 2 emissions indicate rates below 4%. Karina's industrial process is predominantly mechanical in nature, involving only the emission of

some moisture volatiles from the raw material, in such a way that they exert an irrelevant influence on monitoring.

4.6 Description of internal actions to improve the quality of the GHG inventory. For example, systematization of data collection, contracting external verification, etc.

In order to continuously improve the quality of the GHG inventory, we are improving the systematization of data collection, and for the next calculation we intend to carry out the external verification. We will also move forward in improving scope 3 data.

4.7 Information on the purchase of electricity from renewable sources.

Not reported.

4.8 Information on the self-production of energy from renewable sources for own consumption.

Not reported.

4.9 Information on the carbon stock, in tons, of your organization as of December 31 of the inventoried year.

Not reported.

5. Offsets and reductions

Optional fields

5.1 Emissions offsets

Does the organization have emission offset projects?

Not reported.

5.2 Emission reductions

Does the organization have emission reduction projects?

Not reported.