Programa Brasileiro
GHG Protocol

Inventory of greenhouse gas emissions

Inventory year: 2020

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

2020

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	1,121.448	5,464.932	0.000	466,528.675	1,121.448	5,464.932	0.000	466,528.675
CH_4	10.523	0.000	0.000	7.312	263.075	0.000	0.000	182.800
N_2O	0.027	0.000	0.000	0.886	8.046	0.000	0.000	264.028
HFC	0.181	0.000	0.000	0.000	376.559	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					**1,769.128**	**5,464.932**	**0.000**	**466,975.503**

2.2 Scope 1 emissions disaggregated by category

Category	Emissions (tCO_2e)	Biogenic CO_2 emissions (t)	Biogenic CO_2 removals (t)
Mobile combustion	920.604	130.302	0.000
Stationary combustion	222.542	0.668	0.000
Industrial processes	0.291	0.000	0.000
Solid waste and liquid effluents	248.550	0.000	0.000
Fugitive emissions	377.141	0.000	0.000
Total	1,769.128	130.970	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	5,464.932	0.000	0.000
Total	5,464.932	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	431,986.594	0.000	0.000
4. Transportation and distribution (upstream)	13,175.396	1,363.795	0.000
5. Waste generated in operations	167.415	0.024	0.000
6. Business travel	39.135	4.103	0.000
7. Employee commuting (home-work)	1,204.682	214.226	0.000
9. Transportation and distribution (downstream)	579.711	67.556	0.000
10. Processing of products sold	19,822.570	0.000	0.000
Total	466,975.503	1,649.704	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).

This inventory is Karina's first initiative to monitor greenhouse gas emissions, and will be the basis for internal comparison for the next cycles.
The performance indicator used as a benchmark is tCO2e/t produced and the value calculated in this cycle was 0.023 tCO2e/t.

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.

We can mention a few that have a direct impact on the GHG Inventory:
• Installation of LED lighting throughout the factory, replacing metallic steam lighting;
• Study of the main emission factor of scope 1, being identified as emissions from the consumption of LPG, as well as the development of the project to eliminate its use 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 the 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 streamline the process, we will systematize data collection. 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.