



GHG Report

January 2023 – December 2024

Lorama Group Inc.
2695 Meadowvale Blvd,
Mississauga, ON L5N8A3
T + 905-878-2833 F + 905-878-7732
www.lorama.com

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EXECUTIVE SUMMARY

This report presents the Greenhouse Gas (GHG) emissions accounting for Lorama Group for two consecutive reporting years. During the reporting period from January 1, 2023, to December 31, 2023, the total GHG emissions amounted to **25,299.20 tCO₂e**. For the subsequent period, from January 1, 2024, to December 31, 2024, the total emissions were **190,058.31 tCO₂e**.

The GHG inventory aims to provide a clear understanding of the sources and magnitudes of emissions, enabling the identification of key areas for improvement and the development of effective strategies for reduction.

This document has been prepared in conformance with the GHG Protocol Corporate Accounting and Reporting Standard prepared by the World Business Council on Sustainable Development (WBCSD) and the World Resources Institute (WRI).

Table 1: Emissions by Scope for CY 2023 & 2024

Scope	2023		2024	
	Total Emissions (tCO ₂ e)	% of Total	Total Emissions (tCO ₂ e)	% of Total
Scope 1	821.7	3.25%	802.58	0.42%
Scope 2	172.67	0.68%	259.17	0.14%
Scope 3	24,304.83	96.07%	188,996.57	99.44%
Total Emissions (Scope 1, 2 and 3)	25,299.20	100.00%	190,058.31	100.00%

INTRODUCTION

About the Report

Lorama Group's GHG emissions inventory for two consecutive periods, **01- Jan- 2023 to 31- Dec- 2023** and **01- Jan- 2024 to 31- Dec- 2024** are presented in this Carbon Accounting Report. It covers Lorama Group's operations across Canada and other international locations and is presented in accordance with the GHG Protocol: Corporate Standard. The report facilitates the improvement of Lorama Group's sustainability performance by demonstrating an accurate assessment of the organization's GHG emissions arising from its activities and facilities. Through this evaluation, key GHG emissions sources are identified which will assist Lorama Group in designing appropriate emission reduction and mitigation strategies. Evaluating principal sources of GHG emissions will enable the identification of areas for improvement and further emission reduction.

Reporting Period

The GHG emissions inventory presented in this report covers Lorama Group Inc's GHG emissions for two consecutive reporting periods, stated as: **January 2023 – December 2023** and **January 2024 to December 2024**.

About the Organization

Founded in 1977 and headquartered in Mississauga, Ontario, Lorama Group Inc. is both a manufacturer of Colour Dispersions & Bio-based Additives, as well as an international distributor of Specialty Chemicals and Functional Extenders. Through our entrepreneurial spirit and with deep expertise in global regulatory and raw material requirements, Lorama has grown to service a multitude of markets across more than 90 countries.

Having in- depth technical expertise and the ability to fully deconstruct and rebuild formulations, Lorama is recognized worldwide for our knowledge and eagerness to help with painting formulation. In addition to having 6 global labs, our main laboratory powerhouse is situated in Mississauga, housing our R&D, technical services, and colour services group. Customers rely upon our 40 full-time chemists for commercially proven solutions through our wholistic consultative technical sales and service approach. For over 40 years we have supplied commercially cost- effective sustainable solutions, helping our customers thrive in highly competitive markets.

In addition to our headquarters in Mississauga, Lorama has subsidiaries in Miami, Mexico, Barbados, and Brazil, as well as labs in Kenya and Malaysia.

Table 2: Activities performed by each entity of Lorama Group Inc.

Activity	Entity	Description
Manufacturing	Lorama Group Inc. Lorama Quimica	Manufacturing resin technology, colorants, and pH modifiers. Manufacturing of colourants
Distribution, Sales, and Logistics	Lorama Group Inc. Lorama Group International Inc. Lorama Group Logistics Lorama Group Quimica Lorama Group Mercosur	Distributing and selling our products on a local, regional and international scale.
Technical Services	Lorama Group Inc. Lorama Group International Inc. Lorama Group Mercosur Lorama Group Quimica	Lab services for our customers which include formulation support and analysis, tint-based system development and consolidation, color matching services, on- site batch and scale-up support, on- site technical support for colorants and paint bases, and troubleshooting formulation concerns.



Figure 2: Lorama's Organizational Structure

Restatement of Emissions for Lorama Group for the reporting period of CY 2023

This restatement sets out the GHG emissions for Lorama Group for the period 1st January 2023 to 31st December 2023

This GHG report document restates the previously reported GHG emissions data for the reported time period. This restatement occurs due to several reasons such as identification and availability of additional data on previously reported categories, recategorization of activity data for more accurate reporting, and identification of calculation errors. The inaccuracies primarily arose from incorrect data aggregation in 2023, which was our inaugural year of data collection. A summary of the key reasons for the restatement is provided below:

1. Upstream and Downstream Transportation and Distribution:

- Under several entities (e.g., Lorama Group, Lorama Mercosul, Lorama Group Logistics), consumption data for road and sea freight was incorrectly classified.
- Further classification of different emissions freight-related emissions factors was done based on multiple freight & transportation types.
- Additional spend-based data was identified and included as part of the calculation.
- This category saw the largest overall change from previously reported emissions.

2. Business Travel:

- Activity data was disaggregated for each trip, which was earlier clubbed together, leading to a large product of two large sums, which was incorrect.
- Corrections were made to distance calculations to incorporate one-way and two-way travel.
- Additional resolution on different emission factors for different travel distances and travel classes was applied.
- Corrections were made to distance calculations, vehicle categorization, modes of travel.

3. Employee Commuting:

- Corrections were made to trip distances and total activity-data calculations, to incorporate an accurate representation of trip-distances and vehicle types.
- Activity data was disaggregated for each trip, which was earlier clubbed together, leading to a large product of two large sums, which was incorrect.

4. Purchased Electricity:

- New information on the use of Renewable Energy for Lorama Mercosur was shared and incorporated, leading to a reduction of Scope 2 emissions at that location.
- A more accurate emission factor was identified and applied for Lorama's Quimica location.

5. Capital Goods and Purchased Goods & Services:

- Additional data on spend-based categories such as electrical equipment, electronics, machinery, and healthcare were incorporated as a part of the Purchased Goods & Services category under Scope 3 for Lorama Group International Inc.
- Additional data on spend-based categories such as chemical products, education, information services, lab supplies, and insurance were incorporated as a part of the Purchased Goods & Services category under Scope 3 for Lorama Quimica.

6. Waste generated in Operations:

- Corrections were made to the quantities of waste generated and disposed of at a few locations.

7. Methodological Improvement:

- More recent and accurate emission factors from databases such as the US EPA and UK DEFRA (BEIS) were incorporated to replace previously applied emission factors from Market Economics Limited.
- In 2024, natural gas consumption previously reported under Scope 2 (as purchased heat and steam) was recategorized to Scope 1 (stationary combustion)

These errors were identified during the data collection and quantification phase for reporting the emissions for the reporting year CY 2024. In accordance with the GHG Protocol guidelines, prior year (PY) emissions have been restated to reflect the application of updated emission factors and the inclusion of emissions sources previously omitted.

Quantification of Differences

Table 3: The Original and Restated CY 2023 Emissions by Scope.

Scope	2023 Reported Emissions(tCO ₂ e)	2023 Restated Emissions (tCO ₂ e)	Difference (%)
Scope 1	113.04	821.7	+626.90%
Scope 2	757.55	172.67	-77.21%
Scope 3	349,278.48	24,304.83	-93.04%
Total	350,149.06	25,299.20	-92.77%

CARBON ACCOUNTING OBJECTIVES

The carbon accounting report aims to:

- Quantify and report Lorama Group's Scope 1, Scope 2, and relevant Scope 3 GHG emissions for the period January 1, 2023, to December 31, 2024.
- Support alignment with global climate reporting frameworks such as the EcoVadis, and other voluntary initiatives.
- Support the development of emission reduction and climate action plans.

Roles and Responsibilities

The quantification of Lorama Group's carbon emissions was led by Nerine Allen, Director of Regulatory Affairs, Lorama Group. Data has been collected by the organization manually and emissions have been calculated manually using Excel spreadsheets.

Methodology Used

This report follows the GHG protocol corporate standard and specifications for quantification of GHG Emissions. The methodology can be summarized as follows:

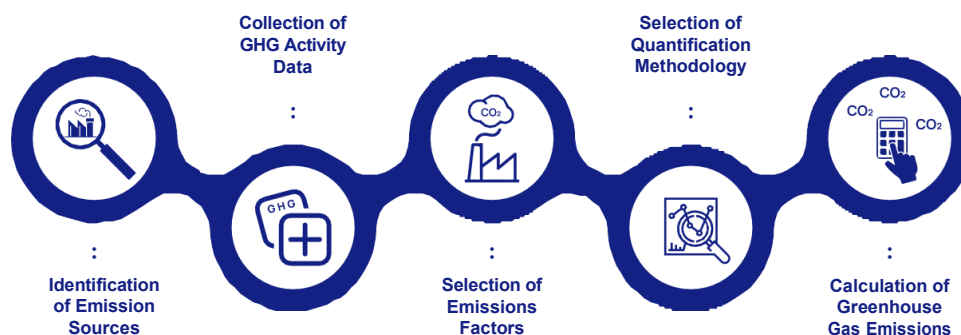


Figure 3: GHG Accounting Methodology

Principles of Carbon Accounting

GHG accounting and reporting practices are constantly evolving alongside advancements in the science of climate change. The GHG Protocol and ISO 14064 standards advise that GHG emissions inventories be carried out in accordance with the following principles:

RELEVANCE: For an organization's GHG emissions inventory to contain information that users might need for making "informed" decisions. Accordingly, the organization has identified the appropriate boundaries that reflect its business operations.

COMPLETENESS: All relevant emission sources within the chosen inventory boundary have been accounted for in the GHG inventory so that a comprehensive and meaningful inventory of total emissions is compiled.

CONSISTENCY: The GHG inventory has been compiled in a manner that ensures that the overall emissions estimates are consistent and comparable over time.

TRANSPARENCY: All necessary information has been recorded, compiled, and analyzed in a manner that enables internal reviewers and external verifiers to attest to its credibility.

ACCURACY: Data reported is sufficiently precise to enable us to make decisions with reasonable assurance and the reported information is credible. Uncertainties in measurements, recording, and calculations have been reduced as far as possible and practicable.

BOUNDARIES

Organizational Boundaries

According to the GHG Protocol – Corporate Standard, the reporting company must set the scope and boundary for calculation of emissions by deciding the approach to consolidate GHG emissions. Lorama Group adopts the Operational Control approach to consolidate and report on its emissions.

Operational Boundaries

Lorama Group Inc. has operations across multiple locations. These include Lorama Group Inc. (Manufacturing), Lorama Quimica (Manufacturing, Sales & Distribution), Lorama Group International Inc. (Office), Lorama Group Logistics (Office), and Lorama Mercosur (Sales & Distribution). All these locations have been considered in the GHG inventory, and a list of activities is given in Table 1.

The complete names and addresses of the individual locations are mentioned in [Annexure I](#).

GHG Emission Activity Data Sources

The Greenhouse Gas Protocol (GHG Protocol) categorizes emissions to help organizations understand their environmental impact. These categories are based on the source of the emissions and the level of control an organization has over them.

Direct Emissions (Scope 1)

These are emissions that come from sources directly owned or controlled by the organization. Examples include:

- Fuel combustion in vehicles, boilers, and generators.
- Chemical and physical processes within the organization.
- Fugitive emissions from cooling and air conditioning equipment.

Table 4: Overview of Scope 1 emission sources for CY 2023 & 2024

Scope of Emissions	Emission Sources
Scope 1	Stationary combustion
	Mobile combustion
	Refrigerants and fugitive emissions

Indirect Emissions from Purchased Electricity (Scope 2)

While not directly generated by the organization, these emissions are associated with electricity, steam, heat, or cooling purchased from external providers.

There are two ways to report Scope 2 emissions:

- Location- based method: This uses average emission factors based on the regional electricity grid where consumption occurs.
- Market-based method: This reflects emissions associated with specific electricity purchase agreements, where the origin of energy generation is guaranteed.

Table 5: Overview of Scope 2 emission sources for CY 2023 & 2024

Scope of Emissions	Emission Sources
Scope 2	Electricity Consumption from Grid

Other Indirect Emissions (Scope 3) These emissions occur at sources outside the organization's control but are still a result of its activities.

Some examples include:

- Emissions from the production and transportation of materials used by the organization.
- Emissions from vehicles not owned or controlled by the organization (e.g., employee commuting).
- Emissions from outsourced activities and waste disposal.

Table 6: Overview of Scope 3 emission sources for CY 2023 & 2024

Scope of Emissions	Emission Sources
Scope 3	Purchased Goods & Services
	Capital Goods
	Upstream Transportation & Distribution
	Waste Generated in Operations
	Business travel
	Downstream Transportation and Distribution
	Employee commuting

While Scope 3 reporting is optional under the GHG Protocol, it's highly recommended, especially for organizations with significant indirect emissions. In fact, including Scope 3 emissions is essential for setting science- based targets (SBTs) for emission reduction.

Data Inventory and Assumptions

This report relies on the Greenhouse Gas Protocol (GHG Protocol) for data collection methods, emission factors, and underlying assumptions. All emission values throughout this report are presented in metric tons of carbon dioxide equivalent (tCO₂e) unless otherwise noted.

DATA COLLECTION AND QUANTIFICATION METHODOLOGY

Data Collection and Monitoring Methodology

All emission activity data is manually collected from multiple data owners using an Excel spreadsheet.

Quantification Methodology

The process of identifying GHG emission sources is the first step involved in the quantification of GHG emissions. The GHG sources are then classified following the GHG Protocol – Corporate Standard. This is followed by gathering accurate activity data. Selection of nationally or internationally accepted emission factors is a crucial step, and these are available through DEFRA, IPCC and National GHG Inventories for the calculation of GHG emissions.

Lorama Group 2023's and 2024's GHG inventory is based on the activity data and the use of appropriate emission factors to arrive at a total emission value or carbon footprint.

Excluded Sources

The following emission sources have been excluded from Lorama Group's GHG inventory calculations:

Table 7: Excluded Sources list

Scope	Categories	Reason for exclusion
Scope 2	Purchased Steam	Not Relevant
Scope 2	Purchased Heating	Considered under Scope 1 as Natural Gas
Scope 2	Purchase Cooling	Not Relevant
Scope 3	Fuel and Energy Related activities	Not Relevant
Scope 3	Upstream Leased Assets	Not Relevant
Scope 3	Processing of sold products	Not Evaluated
Scope 3	Use of Sold Products	Not Evaluated
Scope 3	End- of- Life Treatment of sold products	Not Evaluated
Scope 3	Downstream Leased Assets	Not Relevant
Scope 3	Franchises	Not Relevant
Scope 3	Investments	Not Relevant

Reducing Uncertainties

It is assumed that there is +/- 5% to 10 % uncertainty associated with the calculation of total emission of **Lorama Group** each year. It is based on the following:

- Based on the accuracy of the activity data collected, the uncertainty associated can be approximately 5%.
- Uncertainty associated with estimating emission factors.
- Concerning Activity Data (AD), calculation methodology with less uncertainty has been prioritized.

RESULTS

Lorama Group total emissions for the period 01-Jan-2023 to 31-Dec-2023 were 25,299.20 tCO₂e while from 01-Jan- 2024 to 31-Dec- 2024 were 190,058.31 tCO₂e.

Table 8: Summary of GHG emissions by Scope for 2023 & 2024

Scope	2023		2024	
	Total Emissions (tCO ₂ e)	% of Total	Total Emissions (tCO ₂ e)	% of Total
Scope 1	821.7	3.24%	802.57	0.42%
Scope 2	172.67	0.68%	259.17	0.14%
Scope 3	24,304.83	96.06%	188,966.57	99.44%
TOTAL	25,299.20	100.00%	190,058.31	100.00%

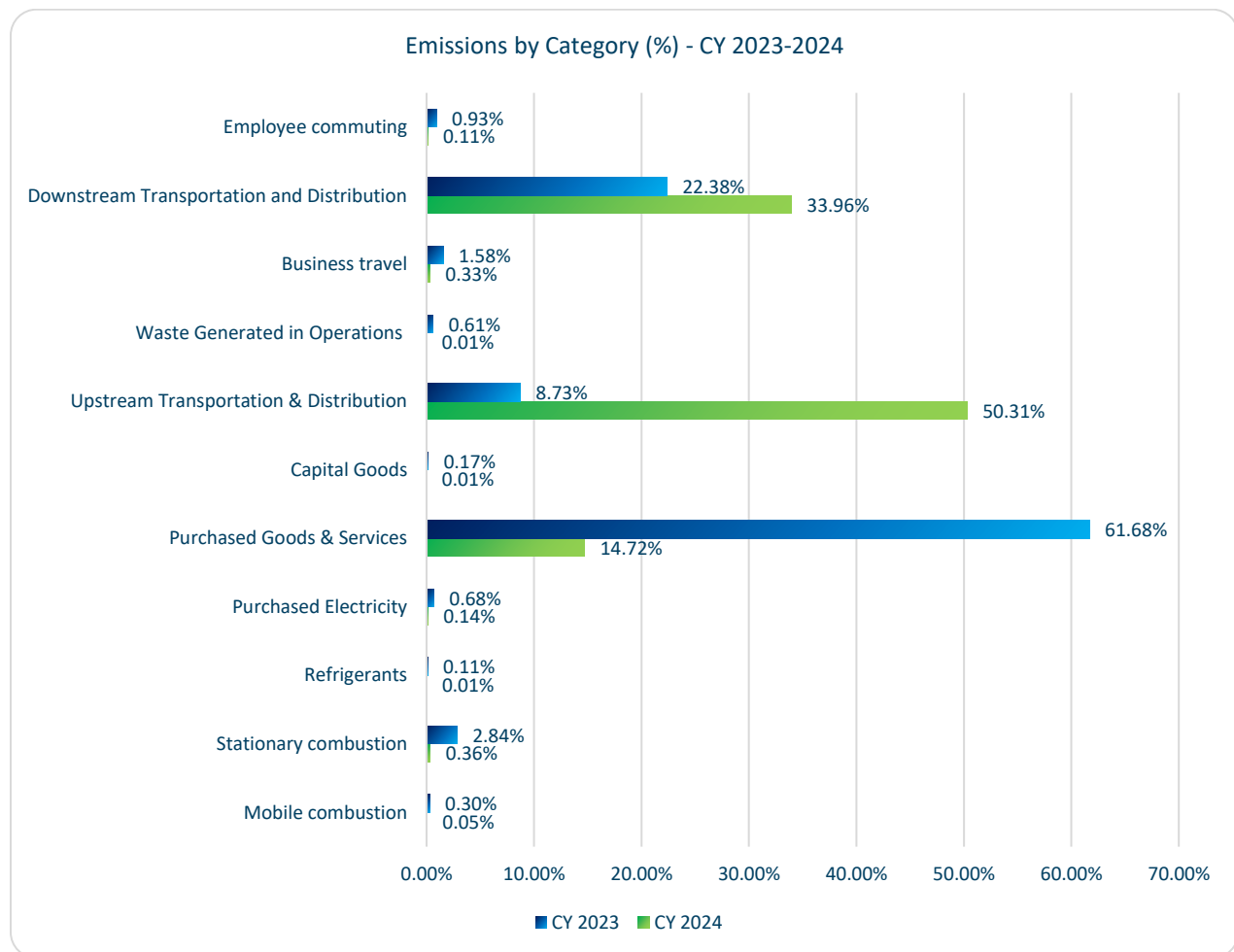


Figure 4: Emissions by Category (YoY Comparison)

CONCLUSION

This Carbon Accounting Report presents a detailed analysis of Lorama Group's GHG emissions for the reporting period 1st Jan 2023 – 31st Dec 2023 and reporting period 1st Jan 2024 – 31st Dec 2024. The calculations adhere to the GHG Protocol Corporate Accounting and Reporting Standard and provide insights into emissions sources and areas for improvement.

The total emissions for the reporting period 1st Jan 2023 – 31st Dec 2023 amounted to **25,299.20 tCO₂e**, distributed across the following scopes:

- **Scope 1 (Direct Emissions):** 821.7 tCO₂e (3.24% of total emissions)
- **Scope 2 (Indirect Emissions from Energy):** 172.67 tCO₂e (0.68% of total emissions)
- **Scope 3 (Other Indirect Emissions):** 24,304.83 tCO₂e (96.07% of total emissions)

The total emissions for the reporting period 1st Jan 2024 – 31st Dec 2024 amounted to **190,058.31 tCO₂e**, distributed across the following scopes:

- **Scope 1 (Direct Emissions):** 802.57 tCO₂e (0.42% of total emissions)
- **Scope 2 (Indirect Emissions from Energy):** 259.17 tCO₂e (0.14% of total emissions)
- **Scope 3 (Other Indirect Emissions):** 188,966.57 tCO₂e (99.44% of total emissions)

Annexure I Geographical Locations

Table 15: Geographical Locations

Name	Type of Location	Address
Lorama Group Inc.	Manufacturing	2695 Meadowvale Blvd, Mississauga, ON, Canada.
Lorama Group International Inc.	Office	Ground Floor, White Park House, White Park Road, Bridgetown, 08 BB11135
Lorama Group Logistics	Office	7300 N Kendall Drive, Suite 300, Miami, FL 33156
Lorama Mercosur	Sales & Distribution	Av, das Industrias, 1750, Porto Alegre, RS 94930230
Lorama Quimica	Manufacturing, Sales & Distribution	Avenida Independencia #34, Colonia Independencia, Tultitlán de Mariano Escobedo, MEX

Appendix I Acronyms and Abbreviations

GHG	Greenhouse Gas
tCO ₂ e	Tonnes of carbon dioxide equivalent
Kg	Kilogram
ISO	International Organization for Standardization
DG	Diesel Generators
DEFRA	Department for Environment, Food & Rural Affairs
IPCC	Intergovernmental Panel on Climate Change
BEIS	UK Department for Business, Energy & Industrial Strategy
US EPA	United States Environmental Protection Agency
CEA	Central Electricity Authority
kWh	Kilowatt hour
Km	Kilometer

Appendix II Carbon Accounting Terminology

Source	Description
GHG Protocol	The Greenhouse Gas Protocol provides comprehensive global standardized frameworks to measure and manage greenhouse gas (GHG) emissions from private and public sector operations, value chains, and mitigation actions. It is widely used to ensure consistent and transparent reporting of GHG emissions.
BEIS	The BEIS (Department for Business, Energy & Industrial Strategy) emission factors are a set of standardized factors published by the UK government for calculating greenhouse gas emissions from various sources. These factors are based on comprehensive data and methodologies, reflecting current scientific understanding and industry practices.
US EPA	The United States Environmental Protection Agency (EPA) offers a wide range of emission factors and guidelines for estimating greenhouse gas emissions across various sectors including energy production, transportation, industry, and agriculture.
CCF	The Carbon Calculation Factors (CCF) are a set of standardized emission factors used to quantify the greenhouse gas emissions associated with various activities and processes. These factors are crucial for ensuring consistency and accuracy in carbon accounting and reporting.
Scope 1	Direct GHG emissions from owned or controlled sources.
Scope 2	Indirect GHG emissions from the consumption of purchased electricity, steam, heating, and cooling.
Scope 3	Other indirect GHG emissions that occur in the value chain of the reporting company.