



Greenhouse Gas (GHG) Emissions Inventory - 2018

1. M Dias Branco

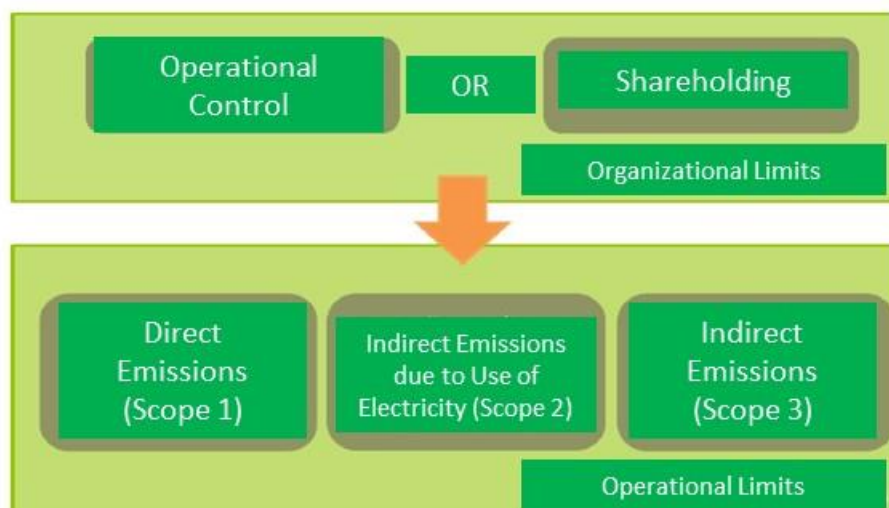
Over 60 years in the domestic market, M. Dias Branco S.A Indústria e Comércio de Alimentos is one of the largest Brazilian companies in the food sector, leader of the pasta and cookie/biscuit market in Brazil. The company boasts a modern industrial park with state-of-the-art equipment, in compliance with the highest quality standards in food production. In addition, employee qualification is an investment priority, as the company believes that they provide the most important resource in order to generate value and social change.

The Company provides the following product categories: Crackers and Cookies; Pasta; Wheat Flour and Bran; Cake Mixes; Margarines and Vegetable Shortenings; Cakes; Snacks; Toasts; and Chocolate-coated products. Its brands stand for tradition and quality, establishing a trustworthy and respectful relationship with the consumer, guided by its values: respect, goodwill, ethics, simplicity, creativity, diligence, excellence, agility, resilience and safety.

2. Inventory Assembly Methodology

At first, the company's organizational and operational limits were established according to the definitions included in the GHG Protocol, according to the picture below:

Note: The GHG Protocol is a tool used to understand, quantify and manage greenhouse gas emissions (GHG) that was originally developed in USA, in 1998, by the World Resources Institute (WRI), and is nowadays the most used method by companies and governments to assemble gas inventories. It is also compatible with the ISO 14,064 rule and quantification methods of the Intergovernmental Panel on Climate Change (IPCC).



The limits considered for the 2018 inventory assembly of M. Dias Branco S.A. Indústria e Comércio de Alimentos were the Plants and Commercial Units included in the Inventory related to the base year of 2017, in addition to the Piraquê plants, a company acquired in 2018.

As a result of the definition of operational limits, the emission sources included in **scopes 1 and 2** were surveyed.

Scopes are defined as per rule ABNT NBR ISO 14.064-2: 2007:

Scope 1: GHG emissions from sources owned or controlled by the organization. This category comprises emissions due to burned fuels to generate electric, thermal or mechanical energy, emissions caused by chemical processes and fugitive emissions. Eventual CO₂ emissions arising out of renewable fuels are separately quantified and reported.

Scope 2: GHG emissions caused by electric or thermal energy generation, imported from the distribution network and consumed.

Scope 3: Regarding indirect emissions, not associated with imported energy, related to organization activities, but arising out of sources owned or controlled by other organizations.

Note: M. Dias Branco has some Units located in Logistics Operators, partially controlled by M. Dias. Activities carried out in Logistics Operators, controlled by them, are not included in Scopes 1 and 2 that are object of this Inventory.

The work-flow definition for quantifying GHG emissions was done through identification of sources and sinks; selection of GHG emission quantification methodologies and data gathering; selection of emission / removal factors and emission calculations.

Quantification methodologies adopted and properly acknowledged were:

- GHG Protocol Brazilian Program Specifications - Counting, Quantification and Publication of Corporate GHG Emission Inventories;
- GHG Protocol Brazilian Program Calculation tool, version 2018 - v1.4;
- Parameters, emission factors and reference sources used are found in the GHG Protocol Brazilian Program calculation tool.

3. Covered Period

Information reported herein refers to year of 2018, considering the availability of verifiable data from GHG emissions. The present inventory comprises Piraquê units, a company acquired in 2018.

4. GHG Emissions

Finally, it should be concluded that the sources presented in scope 1 of the M. Dias Branco units are responsible for the largest part of the emissions, with **166,380.75 tCO₂e** and **88.24%** of the total sum of the scopes. Scope 2, on the other hand, contributed with **22,178.34 tCO₂e** representing **11.76%** of emission sources.

EMISSIONS	Emissions tCO ₂ e	% of Emissions over Sum of Scopes
Scopes		
Scope 1	166,380.75	88.24%
Scope 2	22,178.34	11.76%
SUM OF EMISSIONS	188,559.08	100%
Biogenic CO ₂ Emissions	18,968.60	

Note: CO₂ emissions arising out of renewable fuels are reported separately as "biogenic CO₂ emissions".

5. Exclusions

The inventory aimed at counting all main emission sources coming from Scope 1 and Scope 2. Scope 3 was not defined as an operational limit for this inventory.

M. DIAS BRANCO S.A. INDÚSTRIA E COMÉRCIO DE ALIMENTOS

6. Comparative Analysis between Inventories

	YEAR 2017				YEAR 2018			
	Emissions tCO ₂ e		% Emissions over Sum of Scopes		Emissions tCO ₂ e		% Emissions over Sum of Scopes	
	Scope 1	Scope 2	Scope 1	Scope 2	Scope 1	Scope 2	Scope 1	Scope 2
Sum per Scope	147,768.63	27,560.49	84.28%	15.72%	166,380.75	22,178.34	88.24%	11.76%
Sum of Emissions	175,329.12		100.00%		188,559.08		100.00%	
Emissions of Biogenic CO ₂	11,219.97		-		18,968.60		-	

As previously evidenced, the company featured an increase in the amount of GHG emissions in 2018 compared to 2017. Such increase took place in Scope 1, which is based in the increase in fuel consumption to drive company activities. The main changes that took place in 2018 reflected in the increase in GHG emissions were:

- ✓ Acquisition of Plants and Distribution Centers of Indústria Piraquê (Madureira and Queimados)
- ✓ Changes in the routine of some Distribution Centers of M. Dias Branco

7. People in Charge of Creation

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