GREENHOUSE GAS (GHG) EMISSIONS INVENTORY

bradesco

2024

Document History

Document name	Date	Nature of Review
GHG Inventory – Bradesco – 2024	05/15/2025	Initial version

TABLES LISTS

FIGURES LISTS

SUMMARY

1 Executive summary

The Greenhouse Gas (GHG) Emissions Inventory is a management instrument that allows assessing an organization's impact on the global climate system. This survey evaluated the GHG emissions of Banco Bradesco S/A ("Bradesco" or "Organization") in 2024 (Table 1).

Table 1 – GHG emissions results by scope and category for 2024 (tCO_2e)

Scope	Emission Sources		Emission (tCO_2e)	%
Scope 1	Mobile combustion	Own air fleet	1,092.90	0.79
		Own land fleet	498.43	0.36
	Fugitive	Coolant gas leaks	17,395.69	12.51
	Stationary combustion	Electric power generators	643.70	0.46
	Total scope 1	**---**	**19,630.72**	**14.12**
Scope 2	Acquisition of electricity	Electricity purchased for own consumption - LB	19,354.31	13.92
		Electricity purchased for own consumption - MB	0.00	0.00
Scope 3	Transport and Distribution (upstream)	Courier pouch transport	3,360.60	2.42
		Mail transport	1,187.97	0.85
		Cargo transportation (equipment, furniture and printing materials)	2,350.87	1.69
		Valuables transport	8,234.22	5.92
		Roadside assistance transport	30,715.45	22.10
		Document transportation	23.52	0.02
	Waste generated in operations	Solid Waste	4,279.10	3.08
	Business travel	Taxi	1,693.27	1.22
		Airline tickets	9,385.58	6.75
		Km reimbursement	3,036.31	2.18
	Employee Commute (home-workplace)	Employee public transport	391.47	0.28
		Work commute distance	54,484.17	39.20
		Remote work	234.29	0.17
	Total scope 3	**---**	**119,376.82**	**85.88**
		Total - LB	**139,007.54**	**---**
		Total - MB	**158,361.85**	**---**

In 2024, Bradesco's Scope 1 emissions were 19,630.72 tCO_2e, representing an increase of 18.7% compared to the previous year (2023: 16,539.89 tCO_2e) and 89.9% in relation to the base year (2019: 10,333.76 tCO_2e). Fugitive emissions, characteristic of coolant gas exchanges in air conditioning units, were the most representative of the Scope (88.61%), in addition to being the source responsible for the observed increase in emissions. This was mainly due to the replacement of air conditioning equipment that used HCFC-22 gas (not regulated by the Kyoto Protocol) with other ecological gases such as R410A, regulated by Kyoto.

The commitment to supply all facilities in Brazil with energy from renewable sources made it possible to account for the Scope 2 emissions, related to purchased electricity, in two approaches: Location Based – LB which considers the average of the National Interconnected System (SIN) as the emission factor, and Market Based – MB which encompasses the grid emissions factor, as well as the emission factors from purchased renewable energy. Under the LB approach, its Scope 2 emissions totaled 19,354.31 tCO_2e. The 38.91% increase observed in relation to 2023 was mainly due to the SIN emission factor (0.0545 tCO_2/MWh) was 41.56% higher than in 2023 (0.0385 tCO_2/MWh). In terms of electricity consumption, there was a 1.27% reduction. In the MB approach, emissions were 0 tCO_2e. The difference in results between the approaches is therefore due to the Distributed Generation contracts (solar farms) of 6,549,421 MWh, the acquisition in the Free Contracting Environment (ACL) of 194,591,987 MWh and 159,484,024 I-RECs (hydroelectric power plants).

Scope 3 emissions in 2024 totaled 119,376.82 tCO_2e, representing a 2.8% decrease compared to the base year (2023 = 122.785,11 tCO_2e), and 36.9% compared to the previous year (2019: 189,157.96 tCO_2e). The most representative sources of this scope were Employee commute (46.2%) and Emergency transport (25.7%). The sources that contributed most to the reduction in emissions observed in the period were Pouch transport (-28.05% compared to 2023) and Transport of Valuables (-12.74% compared to 2023), mainly due to the strategy of digitizing processes and promoting self-service channels.

In addition, 576.53 tCO_2 of renewable origin (biogenic) referring to Scope 1 was emitted, and 24,379.02 tCO_2 referring to Scope 3.

In an analysis by operational unit, Banco Bradesco is responsible for most Scope 1, 2 and 3 emissions. This representation is expected due to the dimension of its operations before Bradesco Seguros, as shown in Table 2.

Table 2 – GHG emissions results by scope and category for 2024 (tCO_2e).

	Operating Unit		Total
Scope	**Bradesco**	**B. Seguros**	
Scope 1	19,013.1	617.6	19,630.7
Scope 2 - location	18,852.7	501.6	19,354.3
Scope 2 - market	0.0	0.0	0.0
Scope 3	82,515.9	36,860.9	119,376.8
Total - location	120,381.7	37,980.2	158,361.8
% - location	**76.0%**	**24.0%**	**100.0%**
Total - market	101,529.0	37,478.6	139,007.5
% - market	**73.0%**	**27.0%**	**100.0%**

2 Introduction

The issues arising from global warming and climate change place the issue of a low-carbon economy as a central issue for sustainable development. Therefore, compatibility between economic development and protection of the climate system is increasingly required.

The Paris Agreement, signed by several countries in 2015 at the annual event of the United Nations Framework Convention on Climate Change, intends to limit global warming to 2 °C, ideally 1.5 °C. To achieve this, all government levels, as well as the private sector, must commit to creating bold short and long-term targets, in line with a future of net-zero emission. To achieve this goal, all emissions from human activity must be reduced as close to zero as possible – such as from vehicles and factories powered by fossil fuels, for example.

In this context, quantifying and managing greenhouse gas (GHG) emissions at corporate level becomes very relevant. This can be done through the Greenhouse Gas Emissions Inventory, a management instrument for quantifying these emissions.

Based on the definition of scope, identification of GHG sources and sinks, and accounting of respective emissions or removals, the Inventory enables understanding the profile of emissions sourced from the organization's activities and may fulfill the following objectives:

- **Monitoring of GHG emissions**: monitor and record the evolution of emissions over time. Identify opportunities for operational efficiency gains and cost reduction;
- **Benchmarking**: compare emissions of each operational unit or each sector of an organization;
- **Risk and Opportunity Assessment**: identify and mitigate regulatory risks and those associated with future duties regarding GHG emission rates or restrictions, as well as evaluate potential cost-effective opportunities for emission reductions;
- **Setting targets**: support setting of GHG emissions reduction targets and the planning of mitigation strategies;
- **Monitoring results of mitigation actions**: quantify progress and improvements resulting from strategic initiatives related to the theme of Climate Change;
- **Participation in climate information disclosure programs**: enables disclosure of information about the organization's climate performance (e.g. GHG Protocol, CDP, ISE, ICO2).

Among the protocols and standards available for compiling corporate GHG inventories, the following references were adopted in this study:

- Standard NBR ISO 14064 (ABNT, 2007);
- Specifications of the Brazilian GHG Protocol Program (FGV/GVces; WRI, 2011).

These references have international credibility and the main objective in adopting them is to prepare a report: a) capable of national and global comparison; and b) verifiable within the scope of these standards. This report is verified by an independent third party, which attests to the quality of the inventory and the consistency of the information contained therein.

2.1 Banco Bradesco

Banco Bradesco S/A is one of the largest financial groups in Brazil, with a solid performance focused on contributing towards customer accomplishment, through a diversified business model that operates in both banking and insurance activities. Since its creation (1943), it excels in service provision, always striving for efficiency and technological innovation for better serving its clients.

Bradesco's purpose is to contribute with sustainable development and, therefore, seeks alignment with the best sustainability practices available on the market.

Eco-efficiency is part of the Organization's strategic management, linking environmental and financial performance through process optimization, recycling, technological innovations and savings in the use of natural resources and inputs. The goal is to reduce environmental impact and contribute to operational efficiency.

The Organization integrally considers environmental issues in the development of its activities and, through the Eco-Efficiency Management Program, invests in initiatives with specific goals for reducing consumption of water, power, printing paper and other indicators that contribute to the reduction of greenhouse gas emissions. The program is developed by the Eco-efficiency area, in the Property Department, and involves several departments and related companies, responsible for the initiatives and monitoring of data and indicators. The Program is monitored by the Sustainability Commission and the Sustainability and Diversity Committee.

In 2019, Bradesco started purchasing subsidized electricity in the Free Contracting Environment (ACL), generated from renewable sources such as solar, wind, biomass or small hydroelectric power plants – SHPPs, and has since intensified the migration process to the Free Market and expansion of solar power plants to several locations.

According to the methodology of the Brazilian GHG Protocol Program, the purchase of renewable energy can be accounted for in the inventory of the Market Based – MB approach, in order to increase visibility of sustainable actions. Still, the Location Based (LB) approach regarding energy purchased from the National Integrated System must be kept in the inventory, given that the company is connected to the Brazilian power grid.

3 Method used

Bradesco's emissions inventory was prepared following the premises of the Brazilian GHG Protocol Program using the emission factors from the 2024 GHG spreadsheet, which makes comparing emissions with other institutions and the third-party verification process easier.

3.1 Principles of inventory accounting and preparation

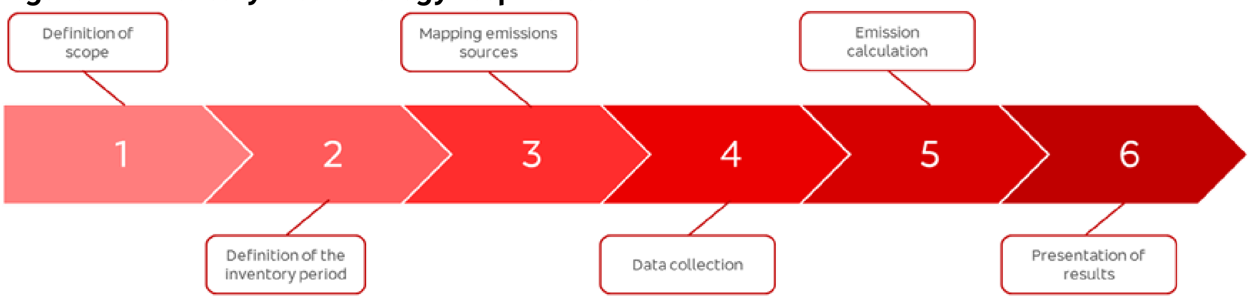
The following principles guided the preparation of this study, as per the guidelines of the Brazilian GHG Protocol Program (FGV/GVces; WRI, 2011):

- **Relevance:** Ensure that the GHG Inventory adequately reflects the emissions of the current process and meets the decision-making needs of its users.
- **Completeness**: Record all GHG emitting sources and activities within the selected inventory boundaries. Document and substantiate any specific exclusions.
- **Consistency**: Use recognized and technically substantiated methodologies that enable emission comparisons with those from other similar processes. Clearly document any changes in data, inventory limits, methods employed or any other relevant factors in the given period.
- **Transparency:** Address all relevant issues in a coherent and factual manner, based on objective evidence. Disclose any relevant assumptions, as well as make appropriate reference to the calculation and recording methodologies and data sources used.
- **Accuracy:** Through application of appropriate data, emission factors or estimates, ensure that the quantification of GHG emissions is not underestimated or overestimated. Reduce bias and uncertainty as low as possible and obtain a determination level that brings security in decision making**.**

3.2 Inventory compilation Steps

The conceptual steps used to prepare this inventory are presented in Figure 1.

Figure 1 – Inventory methodology step flowchart



First, the scope of the inventory is defined (Step 1), that is, which facilities and activities of the organization shall be covered by the inventory must be defined, thus establishing its organizational limit. Then, the reference period and base year of the inventory are defined (Step 2).

The organization's GHG sources are identified (Step 3), which are then categorized and rated in tiers. Next is the data collection process (Step 4). To carry out the calculation of emissions (Step 5), data collected on emission activities are used, in addition to emission factors. At this stage, inventory uncertainties are also calculated. Lastly, results are compiled into an annual report (Step 6).

The aforementioned Steps were applied to Bradesco's GHG inventory as described below.

3.3 Inventory Coverage

3.3.1 Organizational boundaries

Two approaches are possible for consolidating emissions and removals at the organizational level. Each of these approaches are defined below and the option used in this inventory is indicated.

☐ Shareholding: the organization assumes responsibility for GHG emissions from operations in accordance with its shareholding.

☑ Operational Control: the organization is responsible for 100% of GHG emissions from operations over which it has operational control.

Bradesco is a conglomerate of companies. Its operating model is diversified between financial, insurance, pension and capitalization sectors, among other activities. Considering only operations in Brazil, it ended 2024 with 3,756 branches, 28 administrative buildings and 83,285 employees.

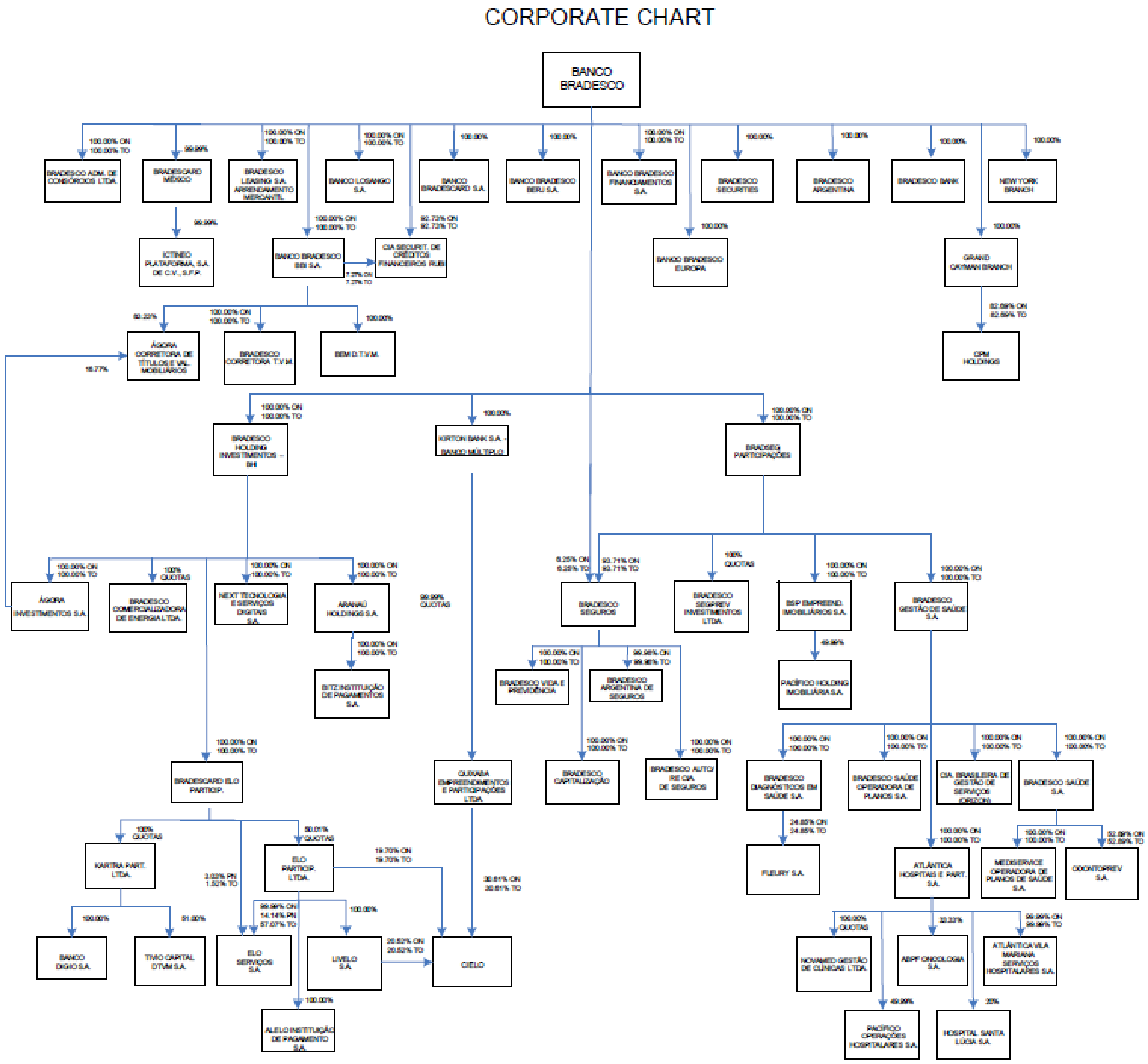
The Organizational Boundary of this report covers all operations under operational control of Banco Bradesco S/A, which comprise all its departments, the main physical unit (Cidade de Deus), other administrative buildings, hubs, branches, related companies and subsidiaries abroad. The companies considered in this inventory are presented below in Table 3.

Table 3 – Operational control and shareholding of each company

Operational units	Location	Operational Control	Shareholding (%)
Banco Bradesco	Brazil	Yes	100%
Bradesco Seguros	Brazil	Yes	100%

The corporate organization chart of Bradesco and the operational units included in this report are shown below in Figure 2.

Figure 2 – Corporate organization chart of Banco Bradesco S/A



Reference Date: 31/Dec/2024

Joint-Stock Companies
ON – Common Shares that grant shareholders voting rights at Shareholder's Meetings (control shares);
PN – Preferred Shares that do not grant shareholders voting rights at Shareholder's Meetings, with preference towards the receipt of dividends/IOEs; and
TOTAL – Sum of the ON and PN shares, representing the equity stake.

Limited Liability Companies
QUOTAS – Represent the stake in the company's share capital.

Source: https://www.bradescori.com.br/o-bradesco/governanca-corporativa/estrutura-acionaria/

3.3.2 Operational boundaries

The definition of operational boundaries considers the identification of GHG sources and sinks associated with operations through categorization into direct or indirect emissions, using the concept of scope. Each of the three categories adopted by the GHG Protocol are defined below and the options included in this inventory are indicated.

☑ Scope 1: Direct GHG emissions from sources owned or controlled by the organization.

☑ Scope 2: Indirect GHG emissions from the purchase of electricity consumed by the organization.

☑ Scope 3: Optional reporting category, considers all other indirect emissions not classified in Scope 2. They are a consequence of the organization's activities, but occur in sources that are not owned or controlled by it.

3.3.3 Period covered

This inventory covers emissions from activities carried out by the Organization in the year 2024 (January 1 to December 31).

3.3.4 Base year

The base year is a reference point in the past against which current atmospheric emissions can be consistently compared.

Retroactive recalculation to the base year must be carried out whenever there are changes that lead to both increase and decrease in emissions, that is, whenever the change affects analysis consistency and relevance over time. The following cases may require recalculation of emissions:

- Significant structural changes that alter inventory boundaries: (i) mergers, acquisitions and divestments; (ii) outsourcing and incorporation of issuing activities; and (iii) change of emission activity inside or outside the geographic limits of the Brazilian GHG Protocol Program;
- Significant changes to the calculation methodology, improvement in accuracy of emission factors or activity data that leads to significant impact on emissions data or the base year;
- Discovery of significant errors or a certain number of accumulated errors that led to significant changes in results.

Until 2015, 2011 was considered the base year in Bradesco's annual emissions inventories. However, due to the acquisition of HSBC in 2016, the Organization decided to change its base year to 2015. In 2022, a Strategic Operational Eco-Efficiency Plan – PDEO was established, defining annual Eco-efficiency targets with reduction based on 2019, the last year of normal activities before the pandemic. Therefore, 2019 is considered as the base year for this inventory. The company believes that this is in line with the emission reduction objectives and strategies that are most suited to Bradesco's organizational and development profile.

3.3.5 Greenhouse Gases

According to the Brazilian GHG Protocol Program, Inventories must include the 7 GHG types that are part of the Kyoto Protocol report: carbon dioxide (CO_2), methane (CH_4), nitrogen oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). In addition, the Montreal Protocol includes ozone-depleting gases such as hydrochlorofluorocarbons (HCFCs), which also contribute to global warming.

Each GHG has an associated Global Warming Potential (GWP), which is a measure of how much each gas contributes to global warming. The GWP is a relative value that compares the heating potential of a given amount of gas with the same amount of CO_2 which, by default, has a GWP value of 1. GWP is always expressed in terms of CO_2 - CO_2e. Table 4 below shows the GWP values used in the Bradesco Inventory:

Table 4 – Global Warming Potential of Greenhouse Gases

Gas	GWP
Carbon dioxide (CO_2)	1
Methane (CH_4)	28
Nitrous oxide (N_2O)	265
Sulfur hexafluoride (SF_6)	23,500
Nitrogen trifluoride (NF_3)	16,100
PFCs	7,390 - 17,700
HFCs	12 - 14,800
HCFCs	5 - 14,400

The Banco Bradesco S/A Inventory considered emissions of CO_2, CH_4, N_2O, HFCs (HFC-32, HFC-125, HFC-134a, HFC143a and HFC-152a) and HCFCs (HCFC-22, HCFC-124 and HCFC-141b) according to mapped emission sources and data availability. Additionally, the inventory also computed CO_2 emissions of renewable origin[1].

CO_2, CH_4, N_2O, HFC and HCFC gases are generated at Bradesco as follows:

- CO_2: generated by burning fossil fuels (such as diesel, natural gas and liquefied petroleum gas) by mobile and stationary sources;
- CH_4: generated in the burning of fuels by mobile and stationary sources and in the decomposition of organic matter in anaerobic treatment processes of solid waste;
- N_2O: generated when fuel is burned by mobile and stationary sources; and
- HFC and HCFC: generated by coolant gas leaks.

[1] Renewable GHG Inventory Emissions - CO_2 emissions arising from the energy use of biomass from renewable sources. In this survey, the definition of renewable biomass formulated by the Executive Committee of the Clean Development Mechanism of the United Nations Framework Convention on Climate Change (EB 23, Annex 18) was adopted. Emissions of this nature do not contribute to long-term increase in CO_2 concentration in the atmosphere, as they are part of the natural carbon cycle.

3.3.6 Inventory exclusions

Due to low representation, some emission sources are excluded from the inventory, as their values are lower than the uncertainty of the GHG inventory emission calculation. In 2024, the following sources were excluded: consumption of LPG and natural gas, fugitive emissions from recharging fire extinguishers, emissions from composting process of organic waste at Cidade de Deus, the international units Bradesco Argentina, Bradesco Europe, Bradesco Grand Cayman, Bradesco New York and Bradesco BAC Florida, which together would represent 0.31% of total emissions.

3.4 Identification and categorization of sources and sinks

The emission sources were identified and categorized within the Organization's structure, according to the methodology of the Brazilian GHG Protocol Program (Table 5).

Table 5 – Emission sources covered, according to scope and category

Scope	Category	Process
Scope 1	Stationary combustion	Electricity Generators
	Mobile combustion	Air
		Land
	Fugitive	Cooling system
Scope 2	Acquisition of electricity	Electricity consumption
		Biomass consumption (MB approach)
Scope 3	Category 4: Upstream Transport and Distribution	Cargo transport
		Pouch transport
		Document transportation
		Emergency transport
		Transport of valuables
		Mail transport
	Category 5: Waste generated in operations	Landfill
	Category 6: Business Travel	Km reimbursement
		Taxi
		Air travel
	Category 7: Employee commute	Home-workplace commute
		Employee public transport - freighted vehicles
		Remote work

The processes defined for Bradesco's inventory can be correlated with the categorization defined by the Brazilian GHG Protocol Program[2]:

[2] Specifications of the Brazilian GHG Protocol Program, pp. 26-29 available at: https://repositorio.fgv.br/server/api/core/bitstreams/c7c1073a-44dc-489b-8c3c-da456d740592/content.

- **Stationary combustion (scope 1):** GHG emissions from the burning of fuel, where oxidization occurs. Energy generated by combustion is generally used to produce water vapor or electricity. The emission source is stationary, that is, not used as a means of transport. The consumption of diesel oil used in generators was considered in Bradesco's inventory.

- **Mobile combustion (scope 1):** GHG emissions from the burning of fuel, where oxidization occurs. The energy generated by combustion is used to produce movement and displacement. Emissions from the land fleet and the air fleet were considered in Bradesco's inventory.

- **Fugitives (scope 1):** Generally unintentional GHG releases that do not pass through chimneys, drains, exhaust pipes or other functionally equivalent openings. The release (exhaust) takes place during the production, processing, transmission, storage or use of the gas. Emissions from recharging air conditioning equipment were considered in Bradesco's inventory.

- **Acquisition of electricity (scope 2):** GHG emissions related to the acquisition of electricity. To identify Bradesco's consumption, energy providers invoices were used.

- **Category 4: Upstream Transport and Distribution:** Emissions from transportation and distribution of purchased or acquired products by the inventory organization in the inventory year from vehicles and facilities not owned or operated by the organization, as well as other third-party transportation and distribution services (including both inbound and outbound logistics). Emissions from transport of cargo, pouches, valuables, mail, documents and emergency care were considered in this category.

- **Category 5: Waste generated in operations (scope 3):** includes emissions from the treatment and/or final disposal of solid waste and liquid effluents resulting from the inventory organization's operations, performed in facilities owned or controlled by third parties. This category accounts for all future emissions (throughout the treatment and/or final disposal process) from waste generated in the inventory year. Emissions related to waste sent to landfills were considered in Bradesco's inventory.

- **Category 6: Business travel (scope 3):** emissions from the transportation of employees for business-related activities of the inventory organization, carried out in vehicles operated by or owned by third parties, such as aircraft, trains, buses, passenger cars and vessels. All employees of entities and units operated, leased or owned by the inventory organization are considered in this category. Emissions from airline tickets, mileage reimbursement, and the use of transport apps and/or taxis were considered in Bradesco's inventory.

Technical Note "Definition of Scope 1 greenhouse gas (GHG) emissions categories – version 4.0", available at: https://repositorio.fgv.br/server/api/core/bitstreams/9174f356-eaee-46cf-a0c1-4c55969e07d9/content
Technical Note "Definition of Scope 2 greenhouse gas (GHG) emissions categories – version 1.0", available at: https://repositorio.fgv.br/server/api/core/bitstreams/36827f62-f18b-4cc2-9312-75c147f9b4f3/content
Technical Note "Definition of Scope 3 greenhouse gas (GHG) emissions categories – version 2.0", available at: https://repositorio.fgv.br/server/api/core/bitstreams/53ebbde3-aa33-498d-b791-0468bf3b36c4/content

- **Category 7: Employee commute (scope 3):** Emissions generated by employees traveling between their homes and workplaces using different modes of transport not operated or owned by the inventory organization. The commutes of all employees to their respective work unit were considered in Bradesco's inventory. Emissions related to energy consumption from employees' Home Offices were also considered.

3.5 Inventory Preparation

The flow of information for inventory generation occurred with the following sequence of activities:

1. Corporate managers identified the employees or third-party employees who manage required information for creation of the GHG inventory;
2. For each emission source there is a data collection form, and information management is performed by the Property Department;
3. Employees or third-party collaborators responsible for operations have verified the best way to obtain the data of the company's management systems and forwarded them quarterly to the Property Department;
4. Information collected is then consolidated by the Property Department;
5. With the consolidated information, emissions were calculated, according to the Brazilian GHG Protocol Program.

Data collection related to GHG emitting activities follows operational flows, implemented in each Management Unit within the established organizational and operational boundaries (Table 6).

Table 6 – Responsibilities for data collection activity

Scope	Emission Sources		Department in charge	Frequency
Scope 1	Mobile combustion	Own air fleet	Property	Quarterly
		Own land fleet	Property	Quarterly
	Fugitive	Coolant gas leaks	Property	Quarterly
	Stationary combustion	Electric power generators	Property	Quarterly
Scope 2	Acquisition of electricity	Electricity purchased for own consumption	Property	Quarterly
Scope 3	Upstream Transport and Distribution	Courier pouch services	Property	Quarterly
		Mail transport	Property	Quarterly

Scope	Emission Sources		Department in charge	Frequency
		Document transportation	Property	Quarterly
		Cargo transportation (equipment, furniture and printing materials)	Property	Quarterly
		Valuables transport	Property	Quarterly
		Roadside assistance transport	Bradesco Seguros	Quarterly
	Waste generated in operations	Solid Waste	Property	Quarterly
	Business Travel	Taxi	Property	Quarterly
		Airline tickets	HR	Quarterly
		Km reimbursement	Accounting	Quarterly
	Employee Commute (home-workplace)	Employee public transport (buses and vans)	HR	Quarterly
		Destination and origin zip codes	HR	Annual
		Remote work	HR	Annual

The Eco-efficiency area of the Property department is responsible for the management and maintenance of controls to comply with the ABNT NBR ISO 14064-1 standard, which support the annual preparation of the Organization's GHG Emissions Inventory. Therefore, it is responsible for receiving, analyzing and compiling the data sent by the management departments (Table 7), to subsequently measure emissions, using the GHG Emissions Calculation Tool, provided by the Brazilian GHG Protocol Program.

Table 7 – Data managed by Banco Bradesco S/A for use in the inventory.

Data type	Source	Calculation Description
Passenger*distance	Bus	Home-workplace distance (obtained from the HR database), multiplied by the percentage of employees for the transport mode (conservatively, urban bus was used).
	Air travel	Distance between airport (based on World Airport Codes) by Defra methodology rating into short, medium and long distance.
Distance	Employee-owned vehicles	Home-workplace distance (obtained from the HR database), multiplied by the percentage of employees for the transport mode (flex-fuel gasoline vehicles were used).
	Chartered Vehicles	Distance traveled by chartered vehicles for transportation of employees.

Data type	Source	Calculation Description
	Transport and Distribution	Data provided by third parties.
	Reimbursement	Reimbursed amount divided by reimbursement per km.
Energy	Electricity	Data obtained directly from Banco Bradesco control.
	Electricity – home office	Energy consumption of employees working from home (obtained from HR database)
Mass	Waste and coolant gases	Data obtained directly from Banco Bradesco control.
Brazilian Real	Transportation of express mail	Fuel cost (exclusively) for the service provided.
	Transport and Distribution	Fuel cost (exclusively) for the service provided.
	Taxi / apps	Fuel cost divided by the average price per km in Brazil.
Volume	Generators, owned and rented fleet	Data obtained directly from Banco Bradesco control.

3.6 Calculation of emissions and removals

All inventory calculations were performed using the GHG Emissions Calculation Tool from the Brazilian GHG Protocol Program. GHG emissions and removals are calculated for each source and sink individually according to the following formula:

$$\boldsymbol{E_{i,g,y} = DA_{i,y} \cdot FE_{i,g,y} \cdot GWP_g}$$

Where:

- $\boldsymbol{i}$ Index denoting an individual source or sink activity;
- $\boldsymbol{g}$ Index denoting a type of GHG;
- $\boldsymbol{y}$ Report reference year;
- $\boldsymbol{E_{i,g,y}}$ GHG emissions or removals *g* attributable to the source or sink *i* during the year *y*, in tCO_2e;
- $\boldsymbol{DA_{i,y}}$ Consolidated activity data relating to the source or sink *i* for the year *y*, in the unit *u*. As previously highlighted, the consolidated activity data shall consist of all recorded attributes of each source/sink;
- $\boldsymbol{FE_{i,g,y}}$ GHG emission or removal factor *g* applicable to source or sink *i* in the year *y*, in t GHG *g*/*u*[3];
- $\boldsymbol{GWP_g}$ GHG global warming potential g, in tCO_2e/t GHG *g* [4]

[3] The GHG emission factors available in reference and in recognized and reviewed databases were adopted. Local and recent emission factors that reflected the type of technology used in the organization's value chain activities were prioritized.

[4] The Global Warming Potential (GWP) is a factor that describes the impact of radiative force of a unit based on the mass of a given GHG related to a unit of equivalent carbon dioxide during a given period.

The emission factors made available in the Tool for each source are updated annually, considering the Brazilian reality, which facilitates the calculation in subsequent years.

Table 8 - References for emission factors.

Reference	Description	Link
IPCC 2006	IPCC *Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme*, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds). *Published: IGES, Japan.*	https://www.ipcc-nggip.iges.or.jp/public/2006gl/
PBGHGP 2024	Brazilian GHG Protocol Program, Calculation Tool, version 2024.0.1.	https://eaesp.fgv.br/sites/eaesp.fgv.br/files/u1087/ferramenta_ghg_protocol_v2024.0.1.xlsx

4 Results

4.1 General CO_2 emissions

The emissions[5] of Bradesco's scopes 1 and 3 in 2024 were, respectively, 19,630.72 tCO_2e and 119,376.82 tCO_2e. Scope 2 was calculated using two different approaches: Location Based – LB, with emissions of 19,630.72 tCO_2e, and Market Based - MB with 0 tCO_2e emissions. In addition, 576.53 tCO_2 of renewable origin[6] referring to Scope 1 was emitted, and 24,379.02 tCO_2 referring to Scope 3. 11,699.5 tCO_2e of non-Kyoto gases were also emitted[7].

[5] GHG emissions regulated by the Kyoto Protocol (carbon dioxide - CO_2, methane - CH_4, nitrous oxide - N_2O and regulated by the Montreal Protocol (chlorofluorocarbons - CFC and hydrochlorofluorocarbons - HCFC).

[6] CO_2 emissions arising from the energy use of biomass from renewable sources. In this survey, the definition of renewable biomass formulated by the Executive Committee of the Clean Development Mechanism of the United Nations Framework Convention on Climate Change (EB 23, Annex 18) was adopted. Emissions of this nature do not contribute to long-term increase in CO2 concentration in the atmosphere.

[7] GHG emissions regulated by the Montreal Protocol (chlorofluorocarbons - CFCs and hydrochlorofluorocarbons - HCFCs).

Figure 3 – GHG emissions of Banco Bradesco S/A in 2024 by scope (Kyoto-tCO_2e).

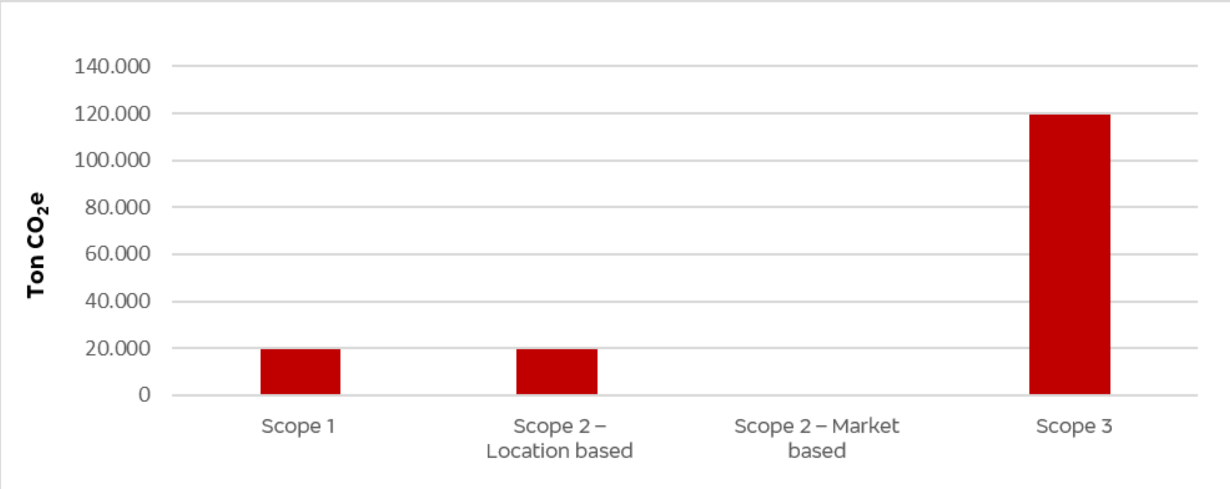


Table 9 shows the results of GHG emissions divided by scope and category. In scope 1, the category with the highest contribution is Fugitive Emissions with 88.6% (17,395.69 tCO_2e).

Scope 2 emissions were 19.354,31 tCO_2e in the LB approach and 0.0 tCO_2e in the MB approach, in both cases only for the Electricity Acquisition category.

In scope 3, the employee commute category was responsible for 46.2% of emissions (55,109.93 tCO_2e). Then, emissions from upstream transport and distribution (involving the transport of cargo, pouches, relief, valuables and correspondence), accounting for 38.4% of Scope 3 emissions (45,872.63 tCO_2e).

Table 9 – Emission sources and their representation

Scope	Emission sources		Emission (tCO_2e)	%
Scope 1	Mobile combustion	Own air fleet	1,092.90	0.79
		Own land fleet	498.43	0.36
	Fugitive	Coolant gas leaks	17,395.69	12.51
	Stationary combustion	Electric power generators	643.70	0.46
	Total scope 1	**---**	**19,630.72**	**14.12**
Scope 2	Acquisition of electricity	Electricity purchased for own consumption - LB	19,354.31	13.92
		Electricity purchased for own consumption - MB	0.00	0.00
Scope 3	Transport and Distribution (upstream)	Courier pouch services	3,360.60	2.42
		Mail transport	1,187.97	0.85
		Cargo transportation (equipment, furniture and printing materials)	2,350.87	1.69
		Valuables transport	8,234.22	5.92
		Roadside assistance transport	30,715.45	22.10
		Document transportation	23.52	0.02

Scope	Emission sources		Emission (tCO_2e)	%
	Waste generated in operations	Solid Waste	4,279.10	3.08
	Business travel	Taxi	1,693.27	1.22
		Airline tickets	9,385.58	6.75
		Km reimbursement	3,036.31	2.18
	Employee Commute (home-workplace)	Employee public transport	391.47	0.28
		Work commute distance	54,484.17	39.20
		Remote work	234.29	0.17
	Total scope 3	**---**	**119,376.82**	**85.88**
		Total - LB	**139,007.54**	**---**
		Total - MB	**158,361.85**	**---**

Figure 4 presents GHG emissions segmented by company and scope in the LB approach, while Figure 5 presents the MB approach. Compared to other companies in the Organization, Banco Bradesco has higher issuance in all areas.

Figure 4 – GHG emissions by company - LB approach (Kyoto - tCO_2e)

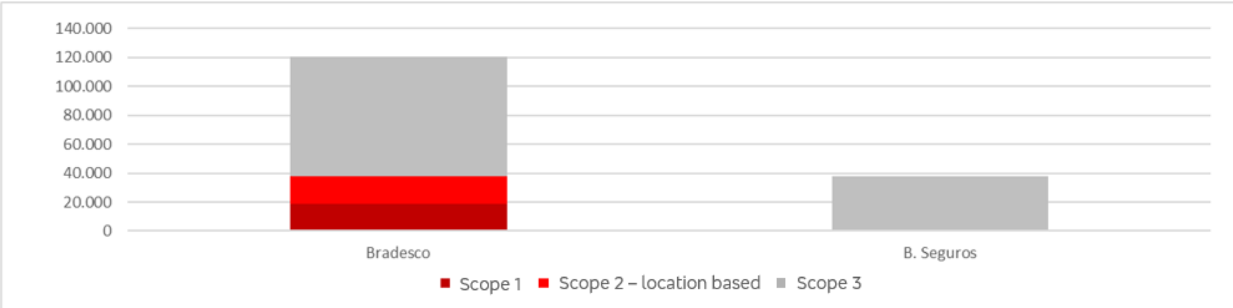


Table 10 – GHG emissions by company - LB approach (Kyoto - tCO_2e).

Scope	Bradesco	B. Seguros	Total
Scope 1	19,013.08	617.64	19,630.72
Scope 2 - LB	18,852.71	501.60	19,354.31
Scope 3	82,515.88	36,860.93	119,376.82
Total	**120,381.68**	**37,980.17**	**158,361.85**
Representation	76.0%	24.0%	100.00%

Figure 5 – GHG emissions by company - MB approach (Kyoto - tCO_2e)

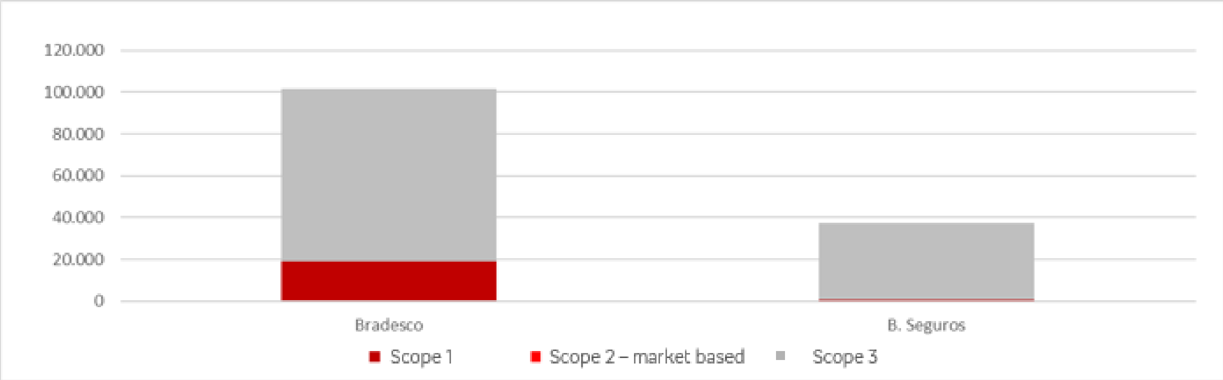


Table 11 – GHG emissions by company - MB approach (Kyoto - tCO_2e)

Scope	Bradesco	B. Seguros	Total
Scope 1	19,013.08	617.64	19,630.72
Scope 2 - MB	0	0	0
Scope 3	82,515.88	36,860.93	119,376.82
Total	**101,528.96**	**37,478.57**	**139,007.54**
Representation	73.0%	27.0%	100%

4.2 General CO_2 renewable emissions

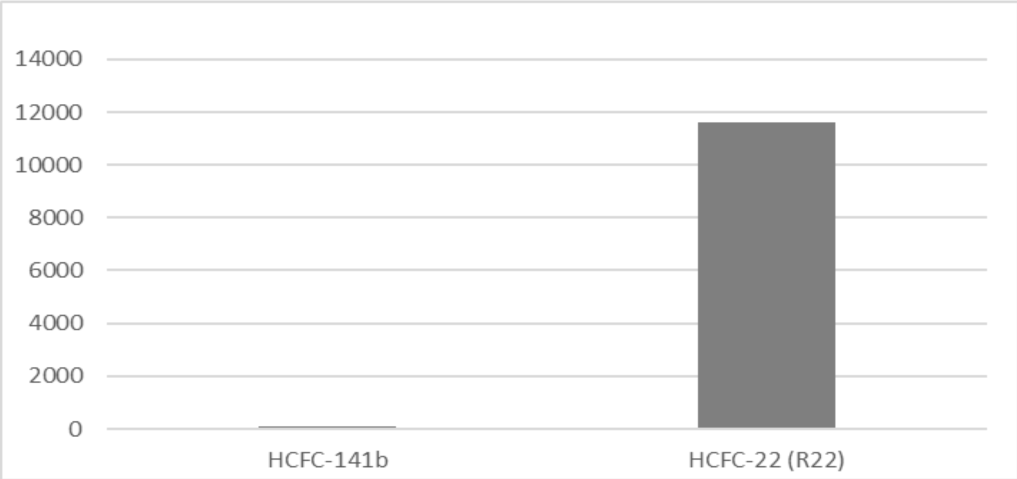
The renewable (or biogenic) CO_2 is considered to be resulting from the burning of renewable fuels, such as ethanol or biodiesel. Since they are biomass, their burning is neutral in terms of climate impact, as at some point in their life cycle, they captured CO_2 from the atmosphere to carry out photosynthesis. In 2024, the Organization's emissions were 576.61 renewable tCO_2 for scope 1 and 24,379.65 renewable tCO_2 renewable for scope 3 (Figure 6).

Figure 6 – Renewable CO_2 emissions by scope (renewable tCO_2)

4.3 General non-Kyoto gas emissions

Greenhouse gas emissions not contained in the Kyoto Protocol of Banco Bradesco S/A are shown in Figure 7. In 2024, a total of 11,699.5 tCO_2e was emitted (with 80.5 tCO_2e of HCFC-141b and 11,619.00 tCO_2e of HCFC-22) referring to the consumption and replenishment of coolant gases due to leaks in cooling systems of the organization's buildings and branches.

Figure 7 – Emissions of gases not covered by the Kyoto Protocol (tCO_2e)



4.4 Scope 1

During the inventory period, Bradesco has shown the following sources of direct GHG emissions according to the GHG Protocol categories:

Table 12 – GHG emissions results – scope 1 (Kyoto-tCO_2e).

EMISSION SOURCES		tCO_2e	%
Mobile combustion	Own air fleet	1,092.90	5.57
	Own land fleet	498.43	2.54
Fugitive	Coolant gas leaks	17,395.69	88.61
Stationary combustion	Electric power generators	643.70	3.28
Total scope 1	**---**	**19,630.72**	**100.00**

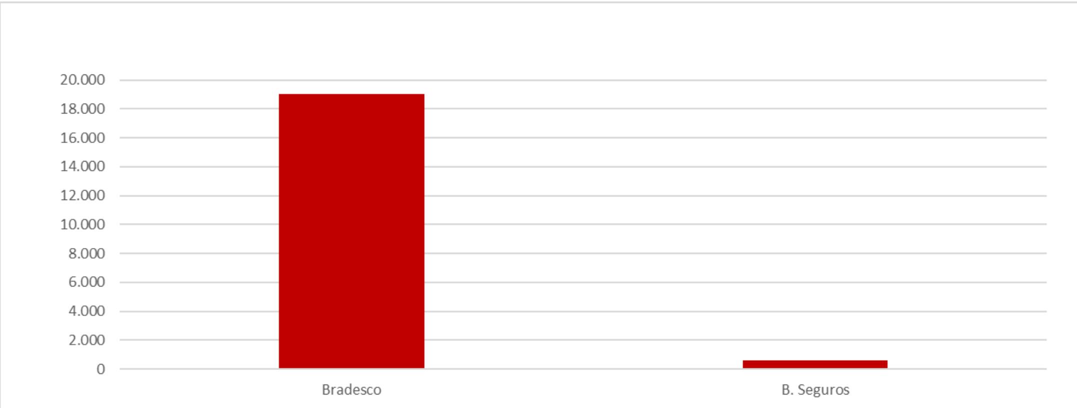
In 2024, fugitive emissions characteristic of coolant gas exchange in air conditioning units were the most prevalent, accounting for approximately 88.6% of Scope 1, as shown in Table 12. Secondly, there are emissions from fuel consumption by the Organization's mobile fleet (land and air), which represented 8.1% of direct emissions. Diesel oil consumption in electricity generators represented 3.3% of the total.

Table 13 – Comparison of scope 1 emissions (Kyoto-tCO_2e).

EMISSION SOURCES		tCO_2e			Variation	
		Base year	2023	2024	Base year	Previous year
Mobile combustion	Own air fleet	511.41	1,199.11	1,092.90	113.7%	-8.9%
	Own land fleet	461.99	395.97	498.43	7.9%	25.9%
Fugitive	Coolant gas leaks	8,594.39	14,409.84	17,395.69	102.4%	20.7%
Stationary combustion	Electric power generators	765.97	534.97	643.70	-16.0%	20.3%
Total scope 1		**10,333.76**	**16,539.89**	**19,630.72**	**90.0%**	**18.7%**

Emissions in the Fugitive category increased by 20.7% compared to the previous year, due to the replacement of air conditioning equipment that used HCFC-22 gas (not regulated by the Kyoto Protocol) with other ecological gases such as R410A, regulated by Kyoto. Mobile Combustion emissions increased, despite the purchase of a hybrid fleet for the Board of Directors, due to the accounting of the fleet leased by Bradesco Seguros, not previously considered.

Figure 8 – Scope 1 emissions per company (Kyoto-tCO_2e).



As shown in Figure 8, Banco Bradesco was responsible for 96.9% of the Organization's Scope 1 emissions in 2024. This representation is expected due to the size of Banco Bradesco's operations compared to other companies.

Table 14 – Scope 1 emissions per company (Kyoto-tCO_2e).

	Emissions - tCO_2e	
Scope	Bradesco	B. Seguros
Scope 1	19,013.1	617.6
Representation	96.9%	3.1%

4.5 Scope 2

In 2021, Banco Bradesco S/A committed to use 10% of electricity from renewable sources in its operations in Brazil through the Free Contracting Environment (ACL), via I-RECs and Distributed Generation, thus being able to account for Scope 2 emissions in Market Based - MB approach.

According to the Brazilian GHG Protocol Program, the LB approach quantifies scope 2 GHG emissions from the purchase of electricity using the average energy generation from the National Interconnected System (SIN) as the emission factor, and reporting is mandatory. The MB approach quantifies scope 2 GHG emissions from the purchase of electricity using the specific emission factor of each electric power generation source that the organization in charge of inventory chose to purchase or use, reporting voluntarily.

4.5.1 Scope 2 – location based approach (LB)

The Location Based approach, a model traditionally adopted by the Brazilian GHG Protocol Program, quantifies scope 2 GHG emissions using the average emissions for generating electricity from the National Interconnected System (SIN) as an emission factor.

Following this approach, Banco Bradesco S/A's Scope 2 emissions in 2024 totaled 19,354.3 tCO_2e representing an increase of 38.9% compared to the previous year (2023: 13,932.8 tCO_2e).

The increase in emissions is due to the 41.56% increase in the grid's average emission factor compared to the previous year (0.0385 tCO_2e/MWh in 2023 vs 0.0585 tCO_2e/MWh in 2024), despite the 1.27% reduction in energy consumption in the Organization.

The graph below shows the 2024 GHG emissions of Banco Bradesco S/A placing the company in the Location approach (Figure 10). As expected, Banco Bradesco was responsible for 96.45% of Scope 2 emissions.

Figure 9 – Scope 2 - LB emissions per company (Kyoto-tCO_2e).

Table 15 – GHG emissions results – scope 2 - LB (Kyoto-tCO_2e).

	Emissions - tCO_2e	
Scope	**Bradesco**	**B. Seguros**
Scope 2 - LB	18,852.7	501.6
Representation	97.4%	2.6%

4.5.2 Scope 2 – market based approach (*MB*)

The MB approach quantifies scope 2 GHG emissions using the specific emission factor of each electric power generation source that the organization in charge of inventory chose to purchase or use. In this sense, the emission factor is directly associated with the origin of electricity generation, making it required to prove and track it. According to the Brazilian GHG Protocol Program, the reporting of emissions from purchasing electricity following the purchase choice-based approach is voluntary, additional and exclusive to organizations that can meet all required quality criteria.

Bradesco is committed to maintaining 100% of its energy matrix coming from renewable sources, through the Free Contracting Environment (ACL), via the acquisition of I-RECs and Distributed Generation contracts. To this end, in 2024, 6,549,421 MWh were generated through Distributed Generation contracts (solar farms), in addition to the 194,591,987 MWh acquired in the Free Contracting Environment (ACL) and the 159,484,024 I-RECs, both from hydroelectric plants. Thus, its Scope 2 emissions, in the market approach, were 0.00 tCO_2e.

For the calculation of Market Base (MB) approach, the total energy consumption was initially considered (identical value to LB approach). Then, this consumption was deducted according to the renewable energy sources consumed and their respective emission factors.

For international units, the MB approach maintained the emission factors as the LB approach, since during the preparation of the GHG Inventory, the verification and tracking of renewable energy sources were still ongoing.

4.6 Scope 3

During the inventory period, Bradesco has shown the following sources of indirect Scope 3 GHG emissions according to the Brazilian GHG Protocol Program categories:

Table 16 – Scope 3 emissions per emission source (Kyoto-tCO_2e).

EMISSION SOURCES		tCO_2e	%
Transport and Distribution (upstream)	Courier pouch transport	3,360.60	2.82
	Mail transport	1,187.97	1.00

EMISSION SOURCES		tCO₂e	%
	Cargo transportation (equipment, furniture and printing materials)	2,350.87	1.97
	Valuables transport	8,234.22	6.90
	Roadside assistance transport	30,715.45	25.73
	Document transportation	23.52	0.02
Waste generated in operations	Solid Waste	4,216.34	3.58
Business travel	Taxi	1,693.27	1.42
	Airline tickets	9,385.58	7.86
	Km reimbursement	3,036.31	2.54
Employee Commute (home-workplace)	Employee public transport	391.47	0.33
	Destination and origin zip codes	54,484.17	45.64
	Remote work	234.29	0.20
Total scope 3	**---**	**119,314.06**	**100.00**

Scope 3 emissions in 2024 totaled 119,376.82 tCO_2e, representing a 36.9% decrease compared to the base year (2019: 189,157.97 tCO_2e), and 2.8% compared to the previous year (2023: 122,785.1 tCO_2e).

Emissions in Category 7 - Employee commute (home-workplace) corresponds to a total of 46.2% of Scope 3 emissions (or 55,109.93 tCO_2e), being made up of public transport for employees, commuting with own resources and emissions regarding remote work. There was a reduction of 4.86% compared to the previous year (2023: 58,278 tCO_2e) and 44.62% compared to the base year (2019: 99,505 tCO_2e).

Category 4 emissions - Upstream transport and distribution totaled 45,872.63 tCO_2e, corresponding to 38.4% of total emissions of this scope. In this category, the sources Emergency Transport and Valuables Transport were the two main emission sources, respectively at 30,715.45 tCO_2e and 8,234.22 tCO_2e (or 25.7% and 6.9% of Scope 3 emissions). When compared to the base year of 2019, there was a 27.3% reduction, due to sector optimization. Also compared to the base year, there was a large reduction in transport of cargo (-64.1%), pouches (-65.4%) and valuables (-48.8%), due to the strategy of digitizing processes and promoting digital channels, with subsequent restructuring and reduction in the number of branches, reducing transportation demands.

Category 6 emissions – Business Travel, totaled 14,115 tCO_2e and accounted for 11.8% of Scope 3 emissions. A reduction of 33.8% was observed compared to the base year (2019: 21,331 tCO_2e) and an increase of 18.1% compared to 2023 (11,953 tCO_2e).

Category 5 - Waste generated in operations corresponds to 3.6% of Scope 3 emissions and decreased 5.6% compared to the previous year (2023: 4,532 tCO_2e), and 18.2% compared to the base year (2019: 5,234 tCO_2e), due to implementation of zero landfill initiatives in office buildings and branches in Greater São Paulo and Rio de Janeiro.

Table 17 – GHG emissions results – scope 3 (Kyoto-tCO_2e).

EMISSION SOURCES		tCO_2e			Variation	
		Base year	2023	2024	Base year	Previous year
Transportation and distribution (upstream)	Courier pouch service	9,710.22	4,670.6	3,360.60	-65.4%	-28.0%
	Mail transport	--	--	1,187.97	--	--
	Cargo transportation	6,551.67	2,288.4	2,350.87	-64.1%	2.7%
	Valuables transport	16,093.72	9,436.7	8,234.22	-48.8%	-12.7%
	Roadside assistance transport	30,733.18	31,601.9	30,715.45	-0.1%	-2.8%
	Document transportation	---	24.6	23.52	---	-4.4%
Waste generated in operations	Solid Waste	5,234.02	4,532.3	4,279.10	-18.2%	-5.6%
Business travel	Taxi	3,368.53	1,452.4	1,693.27	-49.7%	16.6%
	Airline tickets	13,794.43	7,698.1	9,385.58	-32.0%	21.9%
	Km reimbursement	4,167.59	2,802.5	3,036.31	-27.1%	8.3%
Employee Commute (home-workplace)	Employee public transport	1,880.03	427.1	391.47	-79.2%	-8.3%
	Destination and origin zip codes	97,624.58	57,682.8	54,484.17	-44.2%	-5.5%
	Remote work	---	167.9	234.29	--	39.6%
Total scope 3		**189,157.97**	**122,785.1**	**119,376.82**	**-36.9%**	**-2.8%**

Both Figure 10 and Table 18 demonstrate Bradesco's scope 3 emissions by company.

Figure 10 – Scope 3 emissions per company (Kyoto-tCO_2e).

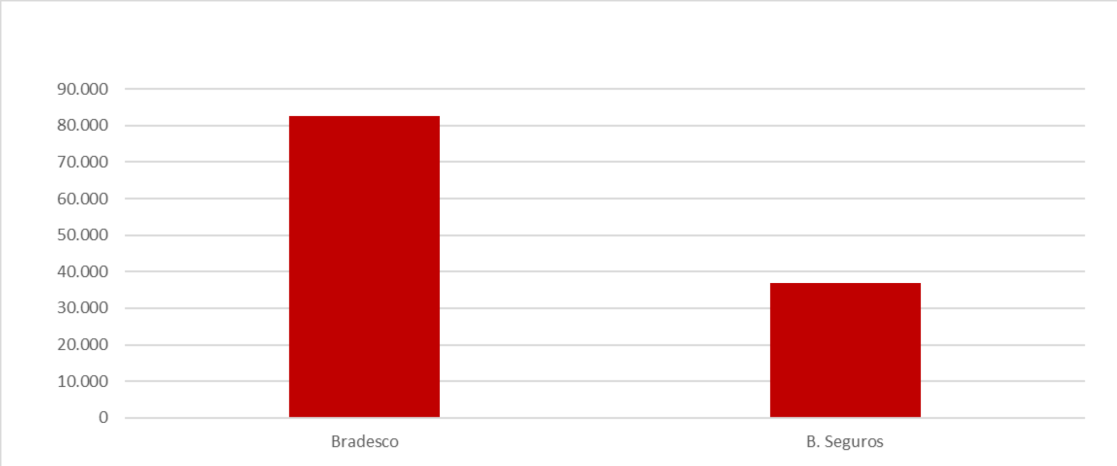


Table 18 – Scope 3 emissions per company (Kyoto-tCO_2e).

	Emissions - tCO_2e	
Scope	**Bradesco**	**B. Seguros**
Scope 3	82,515.9	36,860.9
Representation	69.1%	30.9%

As shown in the chart above, Banco Bradesco was responsible for 69.1% of the Organization's Scope 3 emissions in 2024. Due to emergency care transport, emissions related to Bradesco Seguros are a significant 30.9% of the total.

5 Uncertainty analysis

Preparing an emissions inventory involves the use of several calculation tools including forecasts, parameters and standard emission factors. The use of these tools generates certain levels of uncertainty in inventory calculations.

To minimize such uncertainties, whenever possible, values based on official sources were used, such as the methodologies queried or market standards, always taking into account the principles of conservatism, accuracy and transparency.

The uncertainties associated with inventories can be classified according to two criteria:

- **Scientific uncertainty**: science of the actual emission and/or removal process was not fully understood. One example is the significant involvement of scientific uncertainty in the use of direct and indirect factors associated with global warming to estimate emissions of various GHGs. Most of the factors covered in this work are from IPCC.

- **Estimated uncertainty**: uncertainty that arises whenever GHG emissions are quantified. These are still classified as uncertainty models, when associated with the mathematical equations used to characterize relationships between various parameters and emission processes; and parameter uncertainties introduced in estimation models used as input data in the estimated models.

According to the recommendations of the IPCC Good Practice Guidance, inventories must not reveal emissions with biases that could be identified and eliminated, and uncertainties must be minimized considering all existing scientific knowledge and available resources.

These recommendations were followed at all stages of the inventory construction, as there was great concern in using the most recent calculation methodologies and emission factors from organizations with great credibility regarding emission calculations. In relation to the data used, special attention was given to their truthfulness (checking of company records and analysis of data received), and the search for data in measurement units that would reduce the uncertainties associated with emissions.

The procedures used to calculate uncertainties are presented in ANNEX C – Calculation of Uncertainties. For the 2024 GHG inventory of Banco Bradesco S/A, uncertainties were also calculated and the results are presented in Table 19.

Table 19 – Results of uncertainties in the Banco Bradesco S/A Inventory.

Scope	Category	Lower uncertainty	Uncertainty Higher
Scope 1	Stationary combustion Mobile combustion Fugitive	2.15% 1.32% 1.56%	0.58% 1.06% 0.31%
	Total - Scope 1	**1.50%**	**0.30%**
Scope 2 - LB	Acquisition of electricity	**1.65%**	**0.33%**
Scope 2 - MB	Acquisition of electricity	**1.65%**	**0.33%**
Scope 3	Upstream Transport and Distribution Waste generated in operations Business travel Employee commute (home-workplace)	5.20% 16.90% 5.32% 8.60%	5.23% 17.38% 4.42% 5.35%
	Total - Scope 3	**4.77%**	**3.52%**
TOTAL - LB		**3.36%**	**2.47%**
TOTAL - MB		**3.36%**	**2.47%**

6 Recommendations

A virtuous cycle of analysis and process improvements must be developed for companies to adapt to the low-carbon economy. This set of activities, when detailed and organized, comprises the corporate plan for managing Greenhouse Gas (GHG) emissions.

The GHG inventory is the first step in the diagnosis and must be continuously improved. The recommendations for improvement are:

- Expansion of monitored emission sources, calculating emissions from other scope 3 categories such as investments (financed emissions), treatment of effluents sent to the municipal waste network, emissions related to goods and services purchased by the organization
- The company may structure an information system and monitor the monthly impact on Climate Change as a form of environmental management.

7 References:

ABNT. NBR ISO 14064-1. Greenhouse Gases - Part 1: Specification and guidance to organizations for quantifying and reporting greenhouse gas emissions and removals. Brazilian Association of Technical Standards, 2007.

BRADESCO. Climatic policies and commitments. 2025. Available at https://banco.bradesco/html/classic/sobre/sustentabilidade/internas/mudancas-climaticas.shtm. Accessed on May 20, 2025.

EPA. United States Environmental Protection Agency, Centro EPA para liderança climática corporativa, Centro de Fatores de Emissão, available at < https://www.epa.gov/climateleadership/ghg-emission-factors-hub>.

FGV/GVCES; WRI. Specifications of the Brazilian GHG Protocol Program: Accounting, Quantification and Publication of Corporate Greenhouse Gas Emissions Inventories, 2011. Available at: https://repositorio.fgv.br/server/api/core/bitstreams/c7c1073a-44dc-489b-8c3c-da456d740592/content

FGV EAESP. Technical Annotation: Definition of Scope 1 greenhouse gas (GHG) emissions categories – version 4.0. Available at: https://repositorio.fgv.br/server/api/core/bitstreams/9174f356-eaee-46cf-a0c1-4c55969e07d9/content

FGV EAESP. Technical Annotation: Guidelines for accounting of Scope 2 emissions in organizational greenhouse gas inventories under the Brazilian GHG Protocol Program. Version 4.0. Available at: https://repositorio.fgv.br/server/api/core/bitstreams/0cdf88e0-6128-432d-ad07-f109db93478b/content

FGV EAESP. Definition of Scope 3 greenhouse gas (GHG) emissions categories – version 2.0. Available at: https://repositorio.fgv.br/server/api/core/bitstreams/53ebbde3-aa33-498d-b791-0468bf3b36c4/content

GHG Protocol. GHG Protocol guidance on uncertainty assessment in GHG inventories and calculating statistical parameter uncertainty. Annex E

IPCC. 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Japan: IGES, 2006.

GLOSSARY

Base year: historical period specified for the purpose of comparison of GHG removals and emissions, in addition to other related information.

Direct GHG emissions: GHG emissions from sources owned or controlled by the organization. To establish the organization's operational boundaries, the concepts of financial control and operational control are used.

Emission factor or **GHG removal factor**: factor that correlates activity data and GHG emissions and removals.

Equivalent carbon dioxide (CO_2e): comparison unit for radiative force (global warming potential) of a given GHG to CO_2.

GHG emissions: total mass of a GHG released into the atmosphere in a specific period.

GHG emissions inventory: document detailing GHG sources and sinks and GHG emissions and removals during a given period.

GHG removals: total mass of a GHG removed from the atmosphere in a specific period.

GHG reservoir: a physical unit or component of the biosphere, geosphere, or hydrosphere that is able to store or accumulate GHGs removed from the atmosphere by a sink or GHGs captured from a source. The total carbon mass contained in a GHG reservoir over a specific period can be referred to as the reservoir's carbon stock. A GHG reservoir can transfer its gases to another GHG reservoir. Collecting a GHG from a source before that GHG enters the atmosphere and storing it in a reservoir can be referred to as GHG capture and storage.

GHG sink: physical unit or process that removes GHGs from the atmosphere.

GHG source: physical unit or process that releases GHG into the atmosphere.

Global Warming Potential: factor that describes the impact of radiative force of a unit based on the mass of a given GHG related to a unit of equivalent carbon dioxide (CO_2) during a given period.

Greenhouse Gas (GHG): atmospheric component, of natural or anthropogenic origin, that absorbs and emits radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, atmosphere and clouds. Among GHGs, there are Carbon Dioxide (CO_2), Methane (CH_4), Nitrous Oxide (N_{2O}), Hydrofluorocarbons (HFC), Perfluorocarbons (PFC) and Sulfur Hexafluoride (SF_6).

Indirect GHG emissions related to energy consumption: GHG emissions from the generation of electricity, heat or steam, imported/consumed by the organization.

Offset: GHG emissions offset credits.

Organization: company, corporation, enterprise, authority, institution - or part or combination thereof -, whether incorporated or not, public or private, that has its own functions and administration.

Other indirect GHG emissions: GHG emissions other than those indirect emissions related to energy consumption. They are a consequence of the organization's activities, but come from sources owned or controlled by other organizations.

Scope: the concept of scope was introduced by the GHG Protocol with the purpose of assisting companies in defining their operational limits. The scopes are distinguished into 3 categories, separated into direct emissions and indirect emissions.

Scope 1: It covers the category of the organization's direct GHG emissions, in other words, those that originate from sources owned or controlled by the company within the defined limits. As an example, emissions from the burning of fossil fuels and manufacturing processes may be mentioned.

Scope 2: Covers the category of indirect GHG emissions related to external energy acquisition. An example is the consumption of electricity generated by the concessionaires supplying the National Interconnected System (SIN) and acquired thermal energy.

Scope 3: It covers the category of indirect GHG emissions from other sources, that is, emissions that occur as a result of the organization's activities, but which originate from sources not owned or controlled by it. Some examples of scope 3 sources are: transporting products in vehicles now owned the company, using third-party vehicles, transporting employees and business travel.

ANNEX A – GHG PROTOCOL TABLES

The purpose of this section is to make data reporting in the public emissions register by Banco Bradesco S/A easier. It should be noted that as the reporting of international units to the GHG Protocol is optional, such emissions are separated from emissions taking place in Brazil. Therefore, the results presented in this section are different from the others presented in the main section of the report.

A.1 EMISSIONS IN METRIC TONS, BY GHG TYPE

GHG (t)	Scope 1	Scope 2 ("location" approach)	Scope 2 (approach by "purchase choice")	Scope 3
CO_2	2,198.709	19,354.310	0.000	111,994.826
CH_4	0.391	0.000	0.000	160.442
N_2O	0.096	0.000	0.000	10.904
HFCs	9.177			-
PFCs				
SF_6				
NF_3				
Total				

A.2 EMISSIONS IN METRIC TONS, BY GHG TYPE (tCO_2e)

GHG (t)	Scope 1	Scope 2 ("location" approach)	Scope 2 (approach by "purchase choice")	Scope 3
CO_2	2,198.709	19,354.310	0.000	111,994.826
CH_4	10.960	0.000	0.000	4,492.370
N_2O	25.362	0.000	0.000	2,889.624
HFCs	17,395.694			-
PFCs				
SF_6				
NF_3				
Total	19,630.724	19,354.310	-	119,376.820

A.4 SCOPE 1 EMISSIONS

Category	tCO_2e emissions	Biogenic CO_2 emissions
Mobile combustion	1,591.331	482.128
Stationary combustion	643.699	94.482
Fugitive	17,395.694	0.000
Total	**19,630.724**	**576.610**

A.5 SCOPE 2 EMISSIONS – LOCATION-BASED APPROACH

Category	tCO_2e emissions	Biogenic CO_2 emissions
Acquisition of electricity	19,354.310	
Total	**19,354.310**	

A.6 SCOPE 2 EMISSIONS - PURCHASE CHOICE APPROACH

Category	tCO_2e emissions	Biogenic CO_2 emissions
Acquisition of electricity	0	
Total	**0**	

A.7 SCOPE 3 EMISSIONS

Category	tCO_2e emissions	Biogenic CO_2 emissions
Upstream Transport and Distribution	45,872.629	8,360.420
Waste generated in operations	4,279.097	43.093
Business travel	14,115.162	3,676.807
Employee commute (home-workplace)	55,109.932	12,299.334
Total	**119,376.820**	**24,379.653**

A.8 EMISSIONS OF OTHER GHGS NOT REGULATED BY THE KYOTO PROTOCOL

Greenhouse Gas	tCO_2e emissions
HCFC-22 (R22)	11,619.0
HCFC-141b	80.5
Total	**11,699.50**

B.1 FUEL CONSUMPTION IN MOBILE AND FIXED EQUIPMENT

The calculation of GHG emissions from the burning of fossil fuels was prepared based on the consumption in fuel volume or traveled distance, by fuel and vehicle type, in 2024. GHG emissions for this source when data are provided in fuel consumption are calculated using the following formula:

$$E_{i,g,y} = C_{i,y} \cdot PCI_{i,y} \cdot FE_{i,g,y} \cdot GWP_g$$

Where:

- i Index denoting the type of fuel;
- g Index denoting a GHG type;
- y Report reference year;
- $E_{i,g,y}$ GHG emissions or removals *g* attributable to the source *i* during the year *y*, in tCO_2e;
- $C_{i,y}$ Fuel consumption i for the year y, in the unit of measurement u, u being m^3 or kg;
- $PCI_{i,y}$ Internal Calorific Value of the fuel *i* for the year *y*, in the unit of measurement *TJ/u*;
- $FE_{i,g,y}$ GHG emission factor *g* applicable to fuel *i* in the year *y*, in t GHG g/*TJ*;
- GWP_g GHG global warming potential g, in tCO_2e/t GHG *g*.

In cases where the input data refers to the distance traveled, the calculation of emissions is performed according to the following formula:

$$E_{i,g,y} = \frac{D_{i,j,y}}{FC_{i,j,y}} \cdot PCI_{i,y} \cdot FE_{i,g,y} \cdot GWP_g$$

Where:

- i Index denoting the type of fuel;
- j Index specifying the type of vehicle;
- g Index denoting a type of GHG;
- y Report reference year;

- $E_{i,g,y}$ GHG emissions or removals *g* attributable to the source *i* during the year *y*, in tCO_2e;

- $D_{i,j,y}$ Distance traveled by vehicle j that uses fuel *i* during the year *y*, in km;

- $FC_{i,j,y}$ Autonomy of vehicle j, in the unit of measurement *u/km,* u being m^3 or *kg*;

- $PCI_{i,y}$ Internal Calorific Value of the fuel *i* for the year *y*, in the unit of measurement *TJ/u*;

- $FE_{i,g,y}$ GHG emission factor *g* applicable to fuel *i* in the year *y*, in t GHG g/*TJ*;

- GWP_g GHG global warming potential g, in tCO_2e/t GHG *g*.

The types of GHG emitted when burning fuels are CO_2, CH_4 and N_2O.

Gasoline and diesel consumption require an additional calculation step, given that in 2024 Brazilian legislation required that these fuels contain biofuels in specific proportions in their compositions. For gasoline, the requirement was 27% anhydrous ethanol. For diesel, ratios were 11% in January and February, 12% from March to August, 10% from September to October and 11% in November and December, according to ANP websites and the GHG Protocol tool. To calculate emissions from the consumption of these fuel types, biofuel percentages were multiplied by the consumption of the fuel mixture prior to using the equation described above.

The categories in this report that were calculated according to the formulas above are: fuel consumption in stationary equipment, fuel consumption in mobile equipment, outsourced transportation, commuting and business travel (taxi only).

B.2 ELECTRICITY CONSUMPTION

Calculation of GHG emissions from electricity consumption was carried out based on data on electricity consumed by operational unit in MWh in 2024. The monthly consumption value is necessary for emission calculation, due to the variation in emission factors of the national network (grid). To calculate emissions related to electricity consumption that occurred in units outside Brazil, annual emissions factors provided by the EPA were used. The GHG type considered in energy generation on the Brazilian grid is CO_2 and emissions are calculated according to the following formula:

$$E_{CO2,m,y} = C_{m,y} \cdot FE_{CO2,m,y}$$

Where:

- ***m*** Month of consumption referring to electricity consumption;

- ***y*** Report reference year;

- $E_{CO2,m,y}$ CO_2 emissions attributable to electricity consumption from the national grid in the month *m* of the year *y*, in tCO_2e;

- $C_{m,y}$ Electricity consumption from the national grid in the month *m* of the year *y*, in *MWh*;

- $FE_{i,g,y}$ CO_2 emission factor applicable to electricity from the national grid in the month *m* of the year *y*, in t CO_2/*MWh*.

The electricity consumption category of this report was calculated using the aforementioned formula.

B.3 CONSUMPTION OF COOLANT GASES

Calculation of GHG emissions from coolant gas consumption was carried out based on data on electricity consumed by operational unit in MWh in 2024. The mass of gases consumed is multiplied by their respective global warming potentials to obtain the amount of CO_2e, according to the following equation.

$$E_{CO2e,g,y} = C_{g,y} \cdot GWP_g \cdot 1000$$

Where:

- y Report reference year;

- g Index denoting a GHG type;

- $E_{CO2e,g,y}$ CO_2e emissions attributable to the consumption of coolant gas g in the year *y*, in tCO_2e;

- C_y Consumption of coolant gases in the year *y*, in *kg*;

- GWP_g GHG global warming potential g, in tCO_2e/t GHGg.

In the case of coolant gas blends, the calculation is made by multiplying the percentages of each type of coolant gas in the blend in the formula above.

Fugitive emissions category in this report was calculated using the formula above.

B.4 SOLID WASTE DESTINED TO LANDFILL

To calculate emissions from the disposal of solid waste and WWTP sludge in landfills, the amounts of waste sent to landfills per operational unit of Banco Bradesco S/A were collected.

The CH_4 is generated in landfills according to the following equations:

$$E_{CH4,y} = QR_y \cdot L_{0,y} \cdot (1 - OX_0)$$

$$L_{0,y} = MCF_0 \cdot DOC_{average} \cdot DOC_f \cdot F_{CH4} \cdot \frac{16}{12}$$

$$DOC_{average} = \sum(\%_{i,y} \cdot DOC_i)$$

Where:

- y Report reference year;
- i Type of waste;
- $E_{CH4,y}$ CH_4 emissions attributable to the decomposition of waste disposed of in landfills in the year *y*, in *tCH_4*;
- QR_y Amount of waste sent to landfill in the year *y* in *t*;
- $L_{0,y}$ Methane generation potential in the year *y* in *t CH_4/t waste*;
- OX_0 Oxidization factor, dimensionless;
- MCF_0 Landfill quality-based methane correction factor, Dimensionless;
- $DOC_{average}$ Average degradable organic carbon value (value calculated according to the average composition of urban solid waste in Latin America);
- DOC_i Waste degradable organic carbon *i*;
- $\%_{i,y}$ Fraction of amount of waste *i* in the year *y*;
- $DOC_{f,y}$ Fraction of waste that decomposes, dimensionless (default value 50%, according to IPCC 2006);
- F_{CH4} Fraction of methane in biogas, dimensionless (default value 50%, as per IPCC 2006);
- **16/12** Mass conversion of C in CH_4, 1.33;

The composition of solid waste was calculated based on the amount of paper and organic waste that exists in the organization's waste, considering the following scenario:

Waste composition	Year	Bradesco	Insurance company
A - Paper/cardboard	A/Total [%]	35.0%	35.0%
B - Textile waste	B/Total [%]		
C - Food waste	C/Total [%]	63.0%	63.0%
D - Wood	D/Total [%]		
E - Garden and park waste	E/Total [%]		
F - Diapers	F/Total [%]		
G - Rubber and leather	G/Total [%]		
H - Sewage sludge	H/Total [%]		
Other inert materials	[%]	2.00%	2.00%
DOC - Degradable Organic Carbon in the year	[tC/tMSW]	0.2345	0.2345

Regarding the location of the waste for Bradesco, the GHG tool was left blank, thus the emissions were not maximized by the tool. This option was due to conservatism and the difficulty of defining a location, due to the capillarity of Bradesco branches.

For Bradesco, the percentage of recycled waste (95% paper) that is discarded by branches in landfills was calculated, and the composition of paper that is destined for landfills was thus calculated. The composition of organic waste was calculated by adding the amount of organic waste generated by branches and administrative buildings that are not part of the zero landfill project, plus the organic waste generated by digital channels. The remainder was considered inert material.

Due to the lack of a landfill rating, this rating was defined for the quality of waste disposal.

In general, there is no methane recovery in landfills and anaerobic reactors in Brazil and, therefore, this recovery was not considered in Banco Bradesco S/A's inventory.

B.5 AIR TRAVEL

To account for GHG emissions associated with air travel, distances traveled in flights must be accounted beforehand. The flights were broken down into sections, thus allowing the use of the GHG Protocol tool.

GHG emissions from a short, medium or long distance trip are calculated according to the equations below.

$$E_{CO2e,tr,y} = Distance_{tr} \cdot pax \cdot FE_{CO2,tr,y}$$

$$E_{CH4,tr,y} = Distance_{tr} \cdot pax \cdot FE_{CH4,tr,y}$$

$$E_{N2O,tr,y} = Distance_{tr} \cdot pax \cdot FE_{N2O,tr}$$

Where:

- y Report reference year;
- tr Classification of flight route (short, medium or long distance);
- $E_{CO2,tr,y}$ CO_2 emissions from the burning of fuel from the plane that traveled the *tr* type route in the year *y*, in tCO_2;
- $E_{CH4,tr,y}$ CH_4 emissions from the burning of fuel from the plane that traveled the *tr* type route in the year *y*, in tCH_4;
- $E_{N2O,tr,y}$ N_2O emissions from the burning of fuel from the plane that traveled the *tr* type route in the year *y*, in tN_2O;
- $Distance_{tr}$ Distance in a straight line traveled on the tr type air route corrected by a factor of 8%, in km;
- pax Number of passengers who traveled the *tr* section type;
- $FE_{CO2,tr}$ CO_2 emission factor applicable to the burning of fuel from the plane that traveled the *tr* type route, in $tCO_2/pax.km$.
- $FE_{CH4,tr}$ CH_4 emission factor applicable to the burning of fuel from the plane that traveled the *tr* type route, in $tCH_4/pax.km$.
- $FE_{N2O,tr}$ N_2O emission factor applicable to the burning of fuel from the plane that traveled the *tr* type route, in $tN_2O/pax.km$.

ANNEX C – UNCERTAINTY CALCULATION

The calculations used in the combination of uncertainties are presented below, as well as estimates in confidence intervals and their corrections, when necessary, in accordance with the IPCC Good Practice Guidance (2006).

- Combination of uncertainty of (uncorrelated) components of a multiplication or division:

$$I_{total} = \sqrt{I_1^2 + I_2^2 + \cdots I_n^2}$$

Where:

- $\boldsymbol{I_{total}}$: Total percentage uncertainty of the product of quantities (half of the 95% confidence interval expressed as a percentage). For asymmetric confidence intervals, the largest percentage difference between the average and the confidence limit was considered;
- $\boldsymbol{I_i}$: Percentage uncertainty associated with each of the quantities in a multiplication.

- Combination of uncertainty of (uncorrelated) components of adding or subtracting:

$$I_{total} = \frac{\sqrt{(I_1.x_1)^2 + (I_2.x_2)^2 + \ldots + (I_n.x_n)^2}}{|x_1 + x_2 + \ldots + x_n|}$$

Where:

- $\boldsymbol{I_{total}}$: Total percentage uncertainty of the addition or subtraction of quantities (half of the 95% confidence interval expressed as a percentage). For asymmetric confidence intervals, the largest percentage difference between the mean and the confidence limit was considered;
- $\boldsymbol{x_i}$ and $\boldsymbol{I_i}$: Quantities and percentage uncertainty associated with each of the quantities of a multiplication.

Through the uncertainty propagation model described above, an estimate of half of the 95% confidence interval will be produced, expressed as a percentage of the inventory result. As inventory uncertainty increases, the propagation approach described above systematically underestimates uncertainty, except in cases where quantification models are purely additive. Therefore, in cases where the uncertainty is greater than 100% and less than 230%, it must be corrected using the procedures described below:

$$I_{\text{corrected}} = I \,.\, F_c$$

$$F_c = \left[\frac{(-0.720 + 1.0921.\,U - 1.63.10^{-3}.U^2 + 1.11.10^{-5}.U^3}{I}\right]^2$$

Where:

- $\boldsymbol{I}_{\text{corrected}}$: Corrected total uncertainty (half of the 95% confidence interval expressed as a percentage);
- $\boldsymbol{I}$: Total uncorrected uncertainty (half of the 95% confidence interval expressed as a percentage);
- $\boldsymbol{F_c}$: Uncertainty correction factor.

For the calculation of confidence intervals of the total result from the model based on the mean and half of the 95% confidence interval of the component quantities, a certain distribution must be assumed. If the model is purely additive and half of the confidence interval is less than 50%, a normal distribution is an accurate estimate. In this case a symmetric probability distribution can be assumed. For multiplicative models or in cases where uncertainty is greater than 50% for variables that are expected to be non-negative, a lognormal distribution is typically an accurate assumption. In these cases, the probability distribution is not symmetrical about the average. For these situations, the following formulas will be applied to calculate the upper and lower limits of the 95% confidence interval:

$$I_{\text{low}} = \left\{\frac{\exp[\ln(\mu_g) - 1.96.\ln(\sigma_g)] - \mu}{\mu}\right\}.100$$

$$I_{\text{high}} = \left\{\frac{\exp[\ln(\mu_g) + 1.96.\ln(\sigma_g)] - \mu}{\mu}\right\}.100$$

$$= exp.\left\{\sqrt{\ln\left(1 + \left[\frac{I}{100}\right]^2\right)}\right\}$$

$$\mu_g = exp.\left\{\ln(\mu) - \frac{1}{2}.\ln\left(1 + \left[\frac{I}{100}\right]^{-2}\right)\right\}$$

Where:

- $\boldsymbol{I}_{\text{low}}$: Lower limit of the 95% confidence interval, in %;

- I_{high}: Upper limit of the 95% confidence interval, in %;
- μ_g: Geometric average;
- μ: Arithmetic average;
- σ_g: Geometric standard deviation;
- I: Symmetric total uncertainty of the 95% confidence interval, in %;

The uncertainties associated with the calculation elements and emission factors were taken from the references from which the emission factors were obtained.

The uncertainties associated with the input data were estimated according to the recommendation of the document "GHG Protocol guidance on uncertainty assessment in GHG inventories and calculating statistical parameter uncertainty". Given the limitations in establishing uncertainty values for input data from the Banco Bradesco Inventory, the method used quantifies the uncertainties based on a qualitative analysis of the data, as shown in Table C.1:

Table C.1 Qualitative analysis of input data uncertainties.

Data accuracy	Average uncertainty interval	Higher uncertainty adopted	Lower uncertainty adopted
High	+/- 5%	1%	5%
Good	+/- 15%	5%	15%
Reasonable	+/- 30%	15%	30%
Poor	> 30%	30%	50%

The input data from Banco Bradesco were qualified according to the characteristics of the data collected (Table C.2):

Table C.2 Assessment of input data for the Banco Bradesco 2024 Inventory.

Category	Parameter	Source of information	Data accuracy
Stationary combustion	Diesel consumption	Purchase invoice	High
Mobile combustion	Alcohol consumption from medium-sized vehicle	Purchase invoice	High
	Alcohol consumption from small-sized vehicle	Purchase invoice	High
	Diesel consumption from large vehicle	Purchase invoice	High
	Gasoline consumption from large vehicle	Purchase invoice	High

Category	Parameter	Source of information	Data accuracy
	Gasoline consumption from medium vehicle	Purchase invoice	High
	Gasoline consumption from small vehicle	Purchase invoice	High
	Aviation kerosene consumption	Purchase invoice	High
	Aviation kerosene consumption (helicopters)	Purchase invoice	High
	Aviation kerosene consumption (jets)	Purchase invoice	High
Electricity	Electricity consumption	Grid metering (energy bill)	High
	Biomass consumption	Estimated calculation	Poor
Fugitive emissions	Gas consumption 39TC (HFC-134a)	Purchase invoice	High
	Gas consumption 39TC (HFC227ea)	Purchase invoice	High
	HCFC-22 gas consumption	Purchase invoice	High
	HFC-134A gas consumption	Purchase invoice	High
	R-407C gas consumption	Purchase invoice	High
	R-410A gas consumption	Purchase invoice	High
	R141B gas mass	Purchase invoice	High
	Use of coolant gases - CO_2 (Argentina, Cayman Europe and New York)	Estimated use	Poor
Business travel (air travel)	Short distance air travel	Compilation of distances of the sections flown	Reasonable
	Long distance air travel	Compilation of distances of the sections flown	Reasonable
	Medium distance air travel	Compilation of distances of the sections flown	Reasonable
Business travel	Distance traveled - gasoline refund	Measured distances	Reasonable
	Distance traveled - ethanol refund	Measured distances	Reasonable
	Gasoline expenses - taxi	Purchase Notes Average cost per liter of fuel	Reasonable
	Gasoline expenses (taxi cooperative company)	Purchase Notes Average cost per liter of fuel	Reasonable
Transportation and distribution (*upstream*)	Distance traveled by light tow truck (diesel)	Estimated distances	Poor
	Distance traveled by heavy tow truck (diesel)	Estimated distances	Poor

Category	Parameter	Source of information	Data accuracy
	Distance traveled on motorcycle (mechanical assistance)	Estimated distances	Poor
	Ethanol consumption from small-sized vehicle	Purchase Notes Average monthly cost per liter of fuel	Reasonable
	Diesel expenses	Purchase Notes Average monthly cost per liter of fuel	Reasonable
	Diesel expenses (armored car)	Purchase Notes Average monthly cost per liter of fuel	Reasonable
	Diesel expenses (FEBRABAN)	Purchase Notes Average monthly cost per liter of fuel	Reasonable
	Light vehicle gasoline costs (FEBRABAN)	Purchase Notes Average monthly cost per liter of fuel	Reasonable
	Motorcycle gas costs	Purchase Notes Average monthly cost per liter of fuel	Reasonable
	Gasoline consumption from small-sized vehicle	Purchase Notes Average monthly cost per liter of fuel	Reasonable
	Expenses of aviation kerosene (FEBRABAN)	Purchase Notes Average monthly cost per liter of fuel	Reasonable
Employee commute	Distance traveled by subway train	Estimated distances	Poor
	Distance traveled by chartered minibus	Estimated distances	Poor
	Distance traveled by chartered bus	Estimated distances	Poor
	Distance traveled by chartered van	Estimated distances	Poor
	Distance traveled in employee vehicle	Estimated distances	Poor
	Passenger transport moment	Estimated distances	Poor
Solid Waste	Waste mass sent for composting	Heavy Waste Composition	Reasonable
	Mass of solid waste generated	Heavy waste = Good	Reasonable
	Mass of solid waste generated (branches)	Heavy waste = Good	Reasonable
	Mass of solid waste generated (buildings)	Heavy waste = Good	Reasonable