



Greenhouse Gas Inventory (2019)

Related to theme Environmental Value Creation

The Greenhouse Gas Inventory (GHG) consists of the measurement and publication of Banco do Brasil's (BB) GHG emissions. The Inventory is based on the GHG Protocol Program methodology, adapted to the Brazilian context by Fundação Getúlio Vargas's (FGV) Center for Sustainability Studies (GVces), part of its Business Administration School of São Paulo (FGV-EAESP), with support from the Brazilian Business Council for Sustainable Development (CEBDS), the Ministry of the Environment (MMA), the World Resources Institute (WRI), the World Business Council for Sustainable Development (WBCSD) and 27 founding companies, including BB.

We have carried out and published our Inventory since 2008 on the Public Emissions Register website (www.registropublicodeemissoes.com.br). The current Inventory is for base year 2019. Emissions management is conducted in accordance with our General Policy and Socio-environmental Responsibility Policy, through which we strengthen our performance, which takes into account the interests of our stakeholders in promoting initiatives aimed at reducing risks and taking advantage of opportunities related to socio-environmental issues, including climate change.

The Inventory follows the principle of continuous improvement of our Environmental Management System (EMS) and has been advancing over the last few years. To ensure its reliability, we have hired a company specialized in environmental audits to perform the external verification of the Inventory, according to the specifications of NBR ISO 14064:3-2007 and the GHG Protocol methodology. The basic data for the Inventory's GHG emissions calculations are obtained primarily from our systems, especially from the applications for controlling administrative expenses and human resources management, and requested directly from the responsible areas.

It is worth emphasizing that we are founding members of the Empresas pelo Clima (EPC - Companies for the Climate) initiative and of the Brazilian GHG Protocol Program, both of which were designed to reflect on and propose actions to combat climate change. We are also members of the Thematic Chamber on Climate Change (CT Clima), an initiative coordinated by CEBDS with the purpose of helping companies to adopt strategies to take advantage of opportunities and minimize risks and restrictions from GHG emissions.

METHODOLOGY AND RESULTS

Our Greenhouse Gas Emissions Inventory follows the Operational Control approach and represents our more than 4,000 facilities nationwide, including retail, wholesale and government branches, regional units and strategic units. It accounts for GHG emissions from the three Scopes, with its sources defined as follows:

- Scope 1 - we account for the tons of CO₂ equivalent (tCO₂e) emitted by our direct fuel consumption activities (mobile combustion - vehicle fleet, stationary combustion - fuel for electric power generators) and fugitive emissions (refrigerant gases and fire extinguishers);
- Scope 2 - we account for the tons of CO₂ equivalent (tCO₂e) emitted by our electricity consumption. We use in our facilities the electricity purchased from the National Interconnected System (SIN), which supplies electricity from different sources, from hydroelectric to thermoelectric plants (non-renewable), a situation that significantly interferes in the annual carbon equivalent conversion factor (SIN emission factor); and



- Scope 3 - we account for the tons of CO₂ equivalent (tCO₂e) emitted by transportation and distribution - upstream (shared transportation of mailbags and cash), solid waste from our operations (paper purchased), effluents generated by our operations (water consumption), business travels (air and land travels), transportation and distribution - downstream (various transportations) and employees commuting (home-work).

GHG Emissions Inventory - BB					
Scope	Emission source	2016	2017	2018	2019 ⁽¹⁾
Scope 1	TOTAL (tCO₂e)	10,832.681	11,784.097	22,347.623	24,382.317
	Mobile Combustion (vehicle fleet)	3,938.721	3,693.348	3,296.267	3,091.991
	Stationary Combustion (fuel for electricity generators)	975.454	857.684	674.456	912.243
	Fugitive Emissions (refrigerant gases and gases from fire extinguishers)	5,918.506	7,233.065	18,376.900 ⁽²⁾	20,378.083 ⁽³⁾
	Biogenic	1,764.575	1,554.531	1,686.395	2,163.329
Scope 2	TOTAL (tCO₂e)	57,558.921	55,561.605	43,721.788	42,848.792
	Electricity	57,558.921	55,561.605	43,721.788	42,848.792
Scope 3	TOTAL (tCO₂e)	85,236.769	71,841.028	66,313.932	54,539.411
	Transportation and Distribution (upstream)	47,602,890	42,706,917	31,943,119	27,903,160
	Waste from Operations (solid and effluents)	26,415.330	16,995.850	20,932.800	13,101.850
	Business Travels	6,938.023	6,369.205	5,618.230	6,421.180
	Transportation and Distribution (downstream)	351.631	500.074	356.196	259.234
	Employees Commuting (home-work)	3,928.895	5,268.982	7,463.587	6,853.987
	Biogenic	5,379.560	5,852.695	6,451.247	5,113.469

(1) The 2019 GHG Inventory data were verified by Green Domus Desenvolvimento Sustentável Ltda.

(2) The increase is due to the change in methodology to include fire extinguishers and expand the mapping of refrigerant gases.

(3) The increase is due to the continued expansion of the mapping of refrigerant gases.

We calculate a Carbon Emission Intensity Indicator, expressed by the quotient of total GHG emissions (Scopes 1 and 2) by the number of employees, as shown in the table below.

BB's Carbon Emission Intensity - Employees	2016	2017	2018	2019
GHG Emissions (Scope 1 and 2) (tCO ₂ e)	68,392	67,346	66,069	67,231
Number of Employees	100,659 ⁽¹⁾	99,161 ⁽²⁾	96,889 ⁽²⁾	93,190 ⁽²⁾
Carbon Emission Intensity (tCO ₂ e/employee)	0.679	0.679	0.682	0.721

(1) The number of employees considers those contracted under the CLT labor laws (100,622) and statutory employees (37).

(2) Only the number of employees contracted under the CLT labor laws was considered.

According to the GHG methodology, for the purpose of emissions calculations, we considered the gases according to the table below:



Gases Included in GHG Emissions Calculations	Global Warming Potential (GWP) ⁽¹⁾
CO ₂	1
CH ₄	25
N ₂ O	298
HFCs	12 - 14,800
PFCs	7,390 - 12,200
SF ₆	22,800
NF ₃	17,200

(1) Source: IPCC (2007)

The sources of GWP factors used in the Inventory are based on those indicated by the GHG Protocol methodology.

EMISSION TARGETS

By the end of 2019, GHG reduction targets for Scopes 1 and 2 were set at 30% by 2030, in line with and contributing to the Brazilian targets (NDC - Nationally Determined Contributions) for reduction stipulated in the Paris Agreement, and the UN's Sustainable Development Goals (SDG).

The target-setting process was based on the Science-Based Targets initiative (SBTi) methodology, and used the initiative's own tool, calculating the targets using the metrics for the well-below 2 degrees temperature scenario (WB2C). The reduction target of 30% by 2030 is based on the emissions reported in the BB's Emissions Inventory (GHG Protocol) for the year 2018, and encompasses the Scopes 1 and 2.

ANALYSIS

When comparing our 2019 GHG emissions with the previous year we found a 9.10% increase in Scope 1 emissions, from 22,347.62 tCO₂e to 24,382.32 tCO₂e. In Scope 2 we reduced 2%, from 43,721.79 tCO₂e to 42,848.79 tCO₂e; and in Scope 3, we reduced 17.76%, from 66,313.93 tCO₂e to 54,539.41 tCO₂e.

SCOPE 1

In 2018 there was a revision in the methodology for calculating fugitive emissions, which included fire extinguisher emissions and the expansion of the mapping of types of air conditioning equipment, in compliance with the objective of continuous improvement of our Inventory. In 2019 this work was continued and, globally, fugitive emissions increased 10.89% due to the greater comprehensiveness of information on the types of air conditioning equipment, the types of refrigerant gas and the calculation of refrigerant gases volume installed in BB's air conditioning base of equipments, which caused the tons of carbon equivalent to increase from 18,376.90 tCO₂e in 2018 to 20,378.08 tCO₂e in 2019.

On the other hand, we reduced the consumption of gasoline and diesel, favouring the use of ethanol in the vehicle fleet used by BB, which represented a 6.20% reduction in mobile combustion emissions, from 3,296.27 tCO₂e in 2018 to 3,091.99 tCO₂e in 2019.

The emissions reduction in fuel consumption was achieved, among other ways, through the establishment of clauses in contracts with suppliers in our vehicle fleet, requiring eco-efficient



models, with flex-fuel engines that allow the use of ethanol, which is less polluting and comes from a renewable source. In addition, we are constantly reviewing our transportation model so that it generates cost reductions and less environmental impacts. One example is the use of taxis via apps: in addition to allowing up to four employees to share transportation, which leads to a reduction in the use of motor vehicles, the mechanism also has a system for reporting the environmental impacts of the journeys carried out and informing the number of trees to be planted to offset the impact, as well as the financial cost of this offsetting.

In 2019, a greater number of generators were activated in the Technology Directorship due to the commissioning of medium voltage works, installation of oxycatalysts, and corrective maintenance in UPS (Uninterruptible Power Supply). All these procedures need to be performed with generators assuming the IT loads, causing an increase in diesel consumption. For this reason, the consumption went from 281,998 liters in 2018 to 384,258 liters in 2019, a variation of 36.26%, making the emissions from this source to rise 35.26%, from 674.46 tCO₂e to 912.24 tCO₂e.

SCOPE 2

Scope 2 emissions were 42,848.79 tCO₂e in 2019, a 2% reduction compared to 2018 (43,721.79 tCO₂e). Our electricity consumption, in turn, was reduced by 5%, falling from 598,393 MWh in 2018 to 571,000 MWh in 2019. The 27,393 MWh saved would be enough to supply electricity to more than 12,000 households a year.

This reduction is due to the actions that integrate the Electricity Consumption Rationalization Program (Procen), such as internal awareness-raising initiatives and the adequacy of lighting and air-conditioning systems operation periods.

We also stipulated the following measures to achieve greater energy efficiency throughout the year:

- Strict observance of the times for switching on and off air-conditioning equipments, as this system is responsible for 60% of our energy consumption;
- Set the air-conditioning system to 23 °C according to current Brazilian standards;
- Replace fluorescent bulbs with LED bulbs for lighting;
- Periodically check that the lighting and air-conditioning system timers for self-service areas are functioning correctly;
- Switch off printers, stabilizers, computers and monitors at the end of the working day;
- Turn off the lights of places that are not being used and places with good natural lighting;
- On cold days, use only the ventilation system of air-conditioning equipments; and
- Communication actions through BB's internal channels for energy rationalization and campaigns for Responsible Energy Use and to eliminate the charging of fines on electricity bills (*Campanha Multa Zero - Zero Fine Campaign*).

The continued replacement of the lighting system of fluorescent bulbs with LEDs, closing 2019 with about 1.3 million light bulbs replaced in the entire project (474,000 bulbs in 2019), had an important participation.

It is worth noting that BB consumed 521,716 MWh of energy from the National Interconnected System (SIN - *Sistema Interligado Nacional*) and purchased energy in the free contracting environment (ACL - *Ambiente de Contratação Livre*), thus, in 2019, 88% of the electricity generated in the SIN and consumed by BB's units came from renewable sources. For further information on the energy theme, please see the [BB's Annual Report 2019](#).

SCOPE 3

In 2019 there was a 17.76% reduction in Scope 3 emissions, from 66,313.93 tCO₂e in 2018 to 54,539.41 tCO₂e in 2019.



This decrease was mainly due to the reduction in transportation and distribution - upstream, which includes the shared transportation of mailbags (TCM) and cash transportation, which together decreased 12.65% in emissions, from 31,943.12 tCO₂e in 2018 to 27,903.16 tCO₂e in 2019 - mainly due to the optimization of transportation routes. Another source that contributed to the reduction of total Scope 3 emissions was waste from operations (solid and effluents), which decreased 37.41% from 20,932.80 tCO₂e in 2018 to 13,101.85 tCO₂e in 2019 - motivated by the reduction in paper and water consumption. The sources transportation and distribution - upstream and waste from operations, together, represented 75.18% of BB's total Scope 3 emissions in 2019.

Also contributing to the reduction of total Scope 3 emissions were the employees commuting (home-work) (reduction of 8.17%) and transportation and distribution - downstream (reduction of 27.22%).

The only Scope 3 source that showed an increase was business travels with 14.29% more emissions in 2019 due to the air part, since there was a 13.14% reduction in the distance traveled on land part.

It should be noted that the effort to rationalize air travels is a constant challenge for us. We encourage the use of our 767 audio and videoconferencing rooms distributed on the facilities of all Federation units and abroad.