



COMPANHIA ENERGÉTICA
DE MINAS GERAIS

Greenhouse Gases Emissions Inventory

Base year 2023

REPORT 2024

Corporate GHG Emissions Inventory - CEMIG 2024

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INTRODUCTION

According to the Intergovernmental Panel on Climate Change (IPCC) – one of the main organizations in charge of compiling scientific studies on climate change – the average global temperature of the Earth's surface has increased by about 1.1 °C since the end of the nineteenth century, with the period from 2011 to 2020 being the warmest on record. Also according to the agency, the current state of temperature and climate change is unprecedented in history (IPCC, 2021).

Figure 1 presents the history of the increase in the global average temperature between 1950 and the projections for 2100 (according to different emission scenarios, the result of hypotheses about different policies adopted by countries). As presented in the IPCC's sixth report (AR6) on climate change (IPCC, 2022), the global average rise in temperature may exceed 1.5°C, increasing the need to establish policies and actions to reduce GHG emissions.

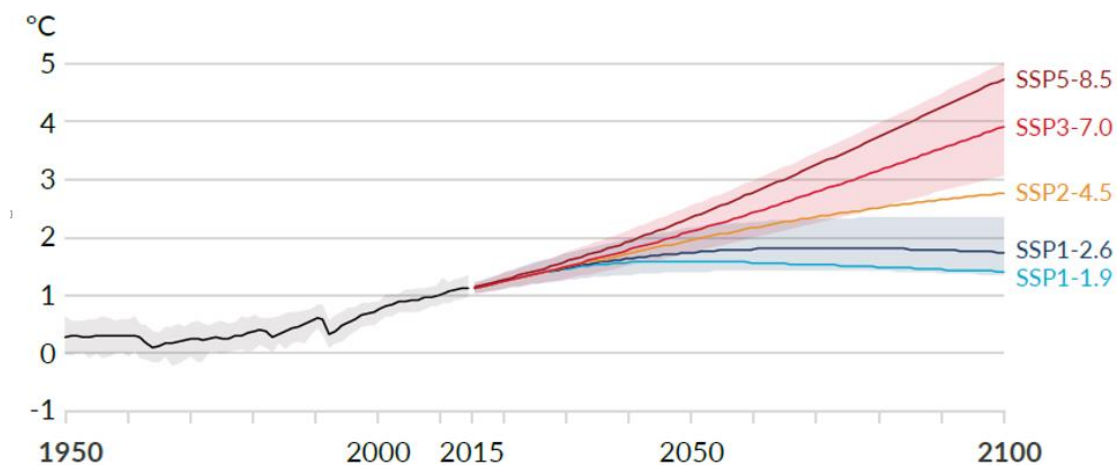


Figure 1 - Global surface temperature change relative to 1950-2100 (Source: IPCC, 2021).

According to IPCC reports, the cause of climate change is anthropic, and this information is corroborated by most international scientific research. Although there are controversies in the political environment and civil society, the scientific literature reviewed by peers since 2012 shows a consensus of more than 99% concerning this finding. (Lynas, 2021)

Reducing GHG emissions is the only way to ensure that the global average temperature does not exceed the goals set during the Paris Agreement in 2015. For this reason, Cemig records GHG emissions in all its subsidiaries and operations. The company aims to monitor the impact of its activities on the environment to devise strategies to reduce its emissions, thus contributing to the objective of limiting the increase in global temperature to 1.5 °C. This tracking allows the company to identify key sources of emissions and prioritize reduction initiatives.

About Cemig

Cemig is one of Brazil's main electric power companies and has a wide range of operations throughout the sector's production chain, from generation to transmission and distribution of electricity. It also operates in the distribution of natural gas through Gasmig.

According to the 2023 Management Report and Financial Statements, Cemig has a stake in 68 generation plants, 57 of which are hydroelectric, 9 wind and 2 solar, totaling an installed capacity of 5,190 MW. Its energy matrix is composed of 97% hydroelectric, 3% wind and 0.08% solar.

According to the report, in transmission, the company operates a transmission network with a length of 5,060.39 km, making it the second largest energy transmission group in the country. This transmission system is responsible for transporting large blocks of energy from the major generating centers to the consumer centers.

In distribution, the document highlights the performance of Cemig Distribuição S/A (or Cemig D) stands out, which is one of the largest distributors of electricity in Brazil in terms of network extension, serving approximately 97% of the State of Minas Gerais. In addition, it has the highest service rate for low-income consumers in the country, supplying electricity to 42.9% of the total residential-class consumers¹.

Cemig is also dedicated to the natural gas distribution business through Gasmig, the exclusive distributor of piped natural gas throughout the territory of Minas Gerais, serving the industrial, residential, commercial, compressed natural gas (CNG), liquefied natural gas (LNG), natural gas vehicle (NGV), and thermoelectric segments.

In 2022, Cemig's Board of Directors approved the company's Net Zero Commitment, which aims to reduce the company's emissions and achieve emissions neutrality by 2040. The company has also committed to developing a science-based GHG emissions reduction target, as recommended by the *Science Based Targets* initiative (SBTi), which establishes guidelines and methodologies for developing science-based emissions reduction targets to limit global warming to 1.5°C.

Among the goals proposed, but not yet approved by the SBT initiative, are:

- 90% reduction in Scope 1, 2, and 3 absolute GHG emissions by 2040, considering the base year 2021, reaching a residual value of 1,015,446.09 tCO₂e (Gasmig's emissions included).
- 69.4% reduction in absolute GHG emissions of Scopes 1 and 2 by 2030 (base year 2021).
- 42% reduction in Scope 3 GHG emissions by 2030 (base year 2021).
- 75.8% per MWh reduction in Scopes 1, 2, and 3 GHG emissions by 2030, considering 2021 as the base year, excluding Gasmig's emissions. For 2022, the target corresponds to 0.1 tCO₂/MWh; for 2030, the intensity target is 0.033 tCO₂/MWh.

¹ Quem Somos', Cemig, visitado em maio de 2024, <https://www.cemig.com.br/quem-somos/>.

- Increase the annual renewable electricity supply from 0% in 2021 to 100% by 2024.
- 65% reduction in the intensity (percentage of actual SF₆ loss/total installed mass of SF₆) of sulfur hexafluoride (SF₆) losses in 2019 and 2027 as the target year.

Setting targets was only possible because, since 2011, Cemig has been measuring its emissions through Emission Inventories. The company will continue to execute them, year-on-year, so in the future the company can monitor the success of its mitigation actions, assessing whether the decarbonization path is aligned with the established goals and with the necessary path to limit the increase in global temperature to 1.5°C. In this sense, the company has also been preparing its Climate Transition Plan.

METHODOLOGY

GHG Protocol

The GHG Protocol method was adopted to prepare Cemig's GHG Emissions Inventory. This Protocol is a set of standards, guidelines, and tools created for companies and governments to measure and manage their greenhouse gas (GHG) emissions. This program was created in partnership between the *World Resource Institute (WRI)* and the *World Business Council for Sustainable Development (WBCSD)* and includes standards for accounting for GHG emissions and removals for various sectors, such as cities, the corporate sector, the value chain, agriculture, and the product life cycle, among others.

Through the global standardization provided by the *GHG Protocol*, it is possible for public and private actors to reliably measure and report the climate impact of their activities in terms of GHG emissions. The *GHG Protocol* provides specifications for accounting, quantifying, and publishing corporate inventories of greenhouse gas emissions, allowing companies to understand their environmental impact and plan more effective mitigation actions.

Inventory Limits

The perimeter or limit of the GHG Inventory defines the emission sources, gases, geographic area, and period that will be considered in the accounting. The main objective in setting the perimeter is to provide an overview of GHG emissions in the inventoried organization, identifying emitting sectors and their nature in order to plan actions that generate substantive changes. By defining the perimeter, it is possible to get a more accurate view of the origins of the emissions, excluding sources that are irrelevant to the study.

Organization Boundaries

The organization's limit for Cemig's GHG Inventory was established encompassing companies in which Cemig has more than 99% shareholding and its operational control. These companies are an integral part of Cemig, thus their GHG emissions are accounted for in the organization's Inventory.

By establishing this limit, Cemig seeks to provide a comprehensive and accurate view of the GHG emissions of its operation, considering the activities of its subsidiaries that have a significant impact on the climate. This way, the company can identify critical areas in its operations and implement mitigation actions to reduce GHG emissions.

Time limits

The time limit of a GHG Inventory refers to the period in which a company's or organization's GHG emissions are reported. The goal is to define a consistent reporting period and allow comparisons of GHG emissions between companies and the previous years inventoried.

The time limit of this Inventory comprises the year 2023 (January 1, 2023 – December 31, 2023).

Greenhouse Gases

In the context of the study of Cemig's Inventory of Greenhouse Gas (GHG) emissions, it is necessary to establish which gases will be included in the emissions calculation. To this end, the GHGs covered by the Kyoto Protocol were taken into account:

- Carbon dioxide (CO₂): released from the burning of fossil fuels, such as coal, oil, natural gas, and derivatives, or from mobile and stationary sources, or deforestation;
- Methane (CH₄): released by the burning of mobile and stationary sources, in solid waste and effluent treatment processes, by enteric fermentation and management of animal waste, among others;
- Nitrous oxide (N₂O): released by the burning of mobile and stationary sources and by the treatment of effluent processes;
- Hydrofluorocarbons (HFCs): released by refrigeration equipment such as air conditioners and refrigerators, such as the refrigerant gases R-134a, R-404A, R-407C, R-410, used in power distribution equipment;
- Perfluorocarbons (PFCs): generic name for organofluoride compounds composed only of carbon and fluorine, originated globally in the production of aluminum, i.e., it is not generated by Cemig's activities;
- Sulfur hexafluoride (SF₆): generated by electricity and power equipment;
- Nitrogen trifluoride (NF₃): generated in the manufacture of screens, photovoltaic panels, LED lamps, and other microelectronics, i.e., it is not generated by Cemig's activities.

For all gases to be placed in the same notation, in tonnes equivalent of carbon dioxide or tCO₂e, the Global Warming Potential (GWP) or *Global Warming Potential (GWP)* in English, of each gas. The GWP is an indicator that quantifies the contribution of each Greenhouse Gas to global warming, that is, it indicates the amount of warming generated by a gas in relation to the same amount of carbon dioxide. The corresponding values of each gas in terms of carbon dioxide equivalent can be found in the Table .

Table 1 - Global warming potentials by gas (Source: IPCC, 2013).

Greenhouse Gas (GHG)	Global Warming Potential (GWP)
CO ₂	1
CH ₄	28
N ₂ O	265
NF ₃	12,400
SF ₆	23,500
PFCs	6,630 – 17,400
HFCs	4 – 12,400

Sectors of activity

The GHG Protocol establishes three scopes for measuring GHG emissions. Scope 1 covers direct emissions from activities such as fossil fuel burning in vehicles and equipment, industrial processes, waste treatment, and exhaust gas emissions, among others.

According to the document "Emission Categories - Scope 1", published by the Brazilian GHG Protocol Program, the emission categories of this scope are:

- Stationary combustion sources: emissions from the combustion of fossil fuels from stationary sources, such as electric power generators, boilers, furnaces, and heaters;
- Mobile combustion: emissions from the burning of fuels in land, air, and sea vehicles, including also losses from the storage and distribution of fuels;
- Industrial processes: emissions from chemical, physical, and biological processes in industrial sectors such as cement production, steel, chemicals, and petrochemicals;
- Waste treatment: emissions from waste treatment processes such as landfills, biological waste treatment, methane emissions from landfills, and CO₂ emissions from the thermal treatment of waste;
- Fugitive emissions: Emissions from unintentional greenhouse gas leaks and exhausts, such as natural gas leaks and exhaust gases from refrigeration and air conditioning systems.

Scope 2 emission categories, according to the GHG Protocol, are indirect greenhouse gas emissions resulting from electricity consumption, heat, or steam purchased by an organization. These emissions are related to third-party electricity, heat, or steam production,

which are accounted for separately in their Emissions Inventories. Scope 2 emission categories include:

- Emissions related to the purchase of electricity, heat, or steam;
- Emissions related to technical and non-technical losses in power generation, transmission, and distribution systems.

Scope 3 includes an organization's indirect emissions, i.e., those that are generated along the value chain in which the organization operates. These emissions can be divided into 15 categories, as described below:

- Purchases of goods and services: emissions resulting from the production of goods and services purchased by the organization;
- Capital goods: emissions generated throughout the life cycle of capital goods acquired or purchased, from resource extraction, production, and transportation to the moment the organization receives them;
- Energy use: emissions resulting from the use of electrical, thermal, and fossil fuel energy by the organization, not included in scope 1 and 2;
- Transportation and distribution (*upstream*): includes emissions arising from the transportation of goods in vehicles and facilities that are not owned or operated by the organization, as well as third-party transportation and distribution services, including inbound and outbound logistics;
- Waste generated from operation: includes emissions related to the treatment and/or final disposal of solid waste and liquid effluents from the operations of the organization in the inventoried year, carried out in facilities owned or controlled by third parties;
- Business travel: emissions resulting from business trips made by the organization's employees;
- Employee commuting: emissions resulting from the daily commute of the organization's employees;
- Leased property (the organization as the lessee): includes emissions arising from the operation of assets leased by the organization but that were not accounted for in Scopes 1 and 2;
- Transportation and distribution (*downstream*): includes emissions from the transportation and distribution of products sold by the organization (if it is not responsible for payment) from its operations to the final consumer, including retail and storage, carried out in third-party vehicles and facilities;
- Processing of sold products: includes emissions resulting from the processing of intermediate products, which occur after the sale of those products by the organization and are carried out by another organization;
- Use of goods and services sold: includes emissions from the end-use of goods and services sold by the inventory organization in the inventoried year are accounted for. These emissions include all emissions over the lifetime of the products and services sold, from the time of purchase to disposal by the end consumer;

- End-of-life treatment of products sold: includes emissions from the final disposal and treatment of products sold by the organization at the end of their useful life in the year inventoried;
- Leased assets (the organization as the lessor): includes the emissions arising from the operation of the assets owned by the organization (lessor) and leased to other entities in the inventoried year;
- Franchises: includes emissions resulting from the activities of the organization's franchises;
- Investments: includes emissions resulting from the organization's financial investments.

It is important to note that Scope 3 emissions are considered indirect, but they can have a significant impact on an organization's total emissions, so they must be taken into account in a Greenhouse Gas Emissions Inventory.

Data collection

The data collection method started with a *kick-off* meeting in which the methodology and the reporting tool – file in Excel format – developed for the emitting activities were presented. The data collection process was improved by considering the feedback from Cemig employees, based on their previous experiences with the construction of the GHG Inventory. The issues were addressed in the data collection process and the tool used. The collection tool was sent to Cemig's focal points, which control different data. The work comprised a series of bilateral contacts, by e-mail and meetings, to support the respondents in reporting activity data.

The spreadsheet provided contains all the emission categories related to each Scope and the respondent was responsible for the data entry for the activities related to the emission sources. This tool allows for an organized history of the company's activity and emissions data.

In addition, the spreadsheet uses the following key notations to help understand the data filled in: 'Does not occur', 'Not accounted for', 'Confidential', 'Accounted for in another source' and 'Accounted for', detailed in the Figure 2. These notations contribute to the clarification of the nature of the data, increasing the reliability of the data used for emissions calculations.

Flowchart: Use of Key Notations

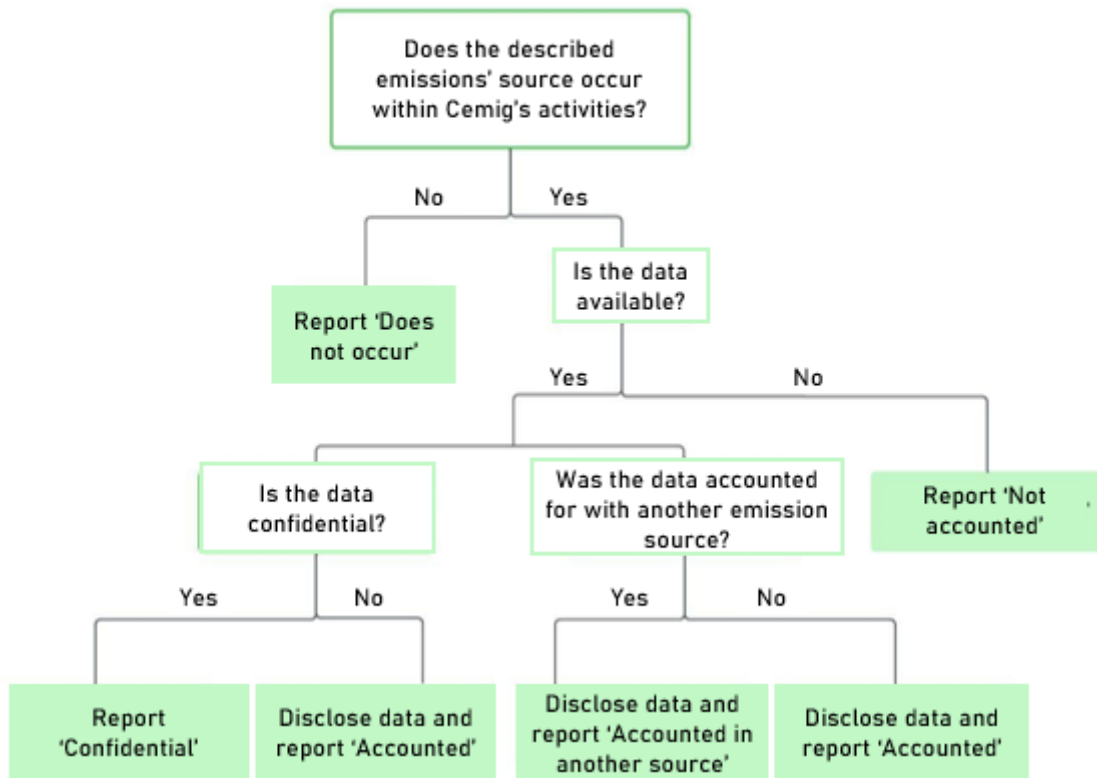


Figure 2 - Flowchart of Key Notations.

Emission Sources

The Table 2 - Sources of emissions and notation related to Cemig's activities. 2 below is a summary of the emission sources accounted for in the 2023 Base Year Inventory, using the key ratings presented above.

Table 2 - Sources of emissions and notation related to Cemig's activities. 2

Scope	Emission's category	Emissions (tCO ₂ e)	Notation
Scope 1	Stationary direct combustion emissions	249.26	Accounted
	Direct emissions from mobile combustion	7,600.77	Accounted
	Agriculture and Land use	7,387.96	Accounted
	Direct fugitive emissions	5,392.57	Accounted
Scope 2	Electricity	2,382.64	Accounted

Scope	Emission's category	Emissions (tCO ₂ e)	Notation
	T&D Losses	303,131.06	Accounted
	Thermal energy	-	Does not occur
Scope 3	Purchased goods and services	428,030.22	Accounted
	Capital goods	111,631.07	Accounted
	Activities related to fuel and energy not included in scopes 1 and 2	2,585,631.36	Accounted
	Upstream Leased Assets	-	Does not occur
	Waste generated in operations	204.60	Accounted
	Business travel	788.26	Accounted
	Commuting to work for employees	44.80	Accounted
	Upstream transportation and distribution	-	Does not occur
	Downstream transportation and distribution	-	Does not occur
	Processing of sold products	-	Does not occur
	Use of goods and products sold	1,907,211.02	Accounted
	Final disposition of sold products	-	Does not occur
	Downstream Leased Assets	-	Does not occur
	Franchises	-	Does not occur
	Investments	72,581.17	Accounted
Scope 3 emissions not classifiable in categories 1 to 15	-	Does not occur	

Updates to Cemig GHG inventories for base years 2021, 2022 and 2023

Cemig, in its commitment to reducing GHG emissions, is submitting science-based targets per the Science Based Targets (SBT) guidelines. The second stage of the target validation process consists of the validation of the inventory by the SBT initiative, following the guidelines of the GHG Protocol Corporate Standards and the Brazilian GHG Protocol Program. In order to adapt the emissions report to the changes required for the submission of the SBT target, some updates were made to the calculations and new emitting activities were included. Adjustments have been made for some scope 3 issuance activities,

In the category of Goods and Services Purchased, the calculation included emissions from the extraction, manufacture, and transportation of the fuels used in the operation, emissions related to the supply chain of services and equipment, and emissions from the use of fuels by contractors for the construction of transmission and distribution lines.

Another change was the segregation of emissions related to the sale of electricity and gas into two distinct categories. The sale of electricity was assigned to the scope 3 category 'Activities related to fuel and energy not included in scopes 1 and 2', while the sale of gas was maintained in category 11 of scope 3, Use of goods and services sold.

Emissions related to category 2 of scope 3 (Capital Goods) and emissions related to investments made by the company, i.e., category 15 of scope 3 (Investments) were also included in the calculations.

RESULTS

General

Cemig's total emissions in 2023 were approximately **5,432,267 tCO₂e**, with scope 3 being the main culprit, corresponding to approximately **94%** of total emissions or **5,106.122 tCO₂e**. Scope 2 totaled **305,513 tCO₂e** or approximately **6%** share of total emissions. Finally, scope 1, totaled **20,631 tCO₂e** and approximately **0,4%** share of total emissions (Table 3).

The total intensity of Cemig's emissions in terms of tCO₂eq per GWh generated (15,428.29) was 350.08 tCO₂eq/GWh.

The emissions intensity in terms of scope 1 emissions per GWh generated was 0.00379 tCO₂eq/GWh.

The intensity of Cemig's emissions (considering total emissions) in terms of tCO₂eq per MWh sold (67,159,255.99) was 0.08088 tCO₂eq/MWh.

Table 3 - Summary table of emissions by category.

Scope	Emissions' category	Emissions (tCO ₂ e)	Share (%)
Scope 1	Stationary direct combustion emissions	249.26	1%
	Direct emissions from mobile combustion	7,600.77	37%
	Agriculture and Land Use Change	7,387.96	36%
	Direct fugitive emissions	5,382.71	26%
	TOTAL SCOPE 1	20.630.56	100%
Scope 2	Electricity	2,382.64	1%
	T&D Losses	303,131.06	99%
	TOTAL SCOPE 2	305,513.70	100%
Scope 3	Purchased goods and services	428,030.22	8%
	Capital goods	111,631.07	2%

Scope	Emissions' category	Emissions (tCO ₂ e)	Share (%)
	Activities related to fuel and energy not included in scopes 1 and 2	2,585,631.36	51%
	Waste generated in operations	204.59	0.004%
	Business travel	788.26	0.02%
	Commuting to work for employees	44.80	0.001%
	Use of goods and products sold	1,907,211.02	37%
	Investments	72,581.17	1%
	TOTAL SCOPE 3	5,106,122.50	100%
TOTAL SCOPES 1 + 2 + 3		5,432,266.76	

Scope 1

Scope 1 aggregated direct emissions from the categories 'Stationary Combustion', 'Mobile Combustion', 'Fugitive Emissions', and 'Agricultural Activities and Land Use Change'. In 2023, Cemig's emissions from this scope represented **20,631 tCO₂e** or **0,4%** of total emissions. Among the scope 1 emissions, emissions related to 'Mobile Combustion' were responsible for the highest scope emissions, with **7,601 tCO₂e** Representing **37%** of total emissions. Next, the 'Agriculture and Land Use Change' category accounted for the second largest share of emissions, totaling **7,388 tCO₂e** or **36%** of total scope 1 emissions. Emissions related to 'Fugitive Emissions' accounted for the third largest volume of scope 1 emissions, amounting to **5,383 tCO₂e** or **26%** of scope 1 emissions. Scope 1 emissions, broken down by emission source, are presented in the Figure 3.

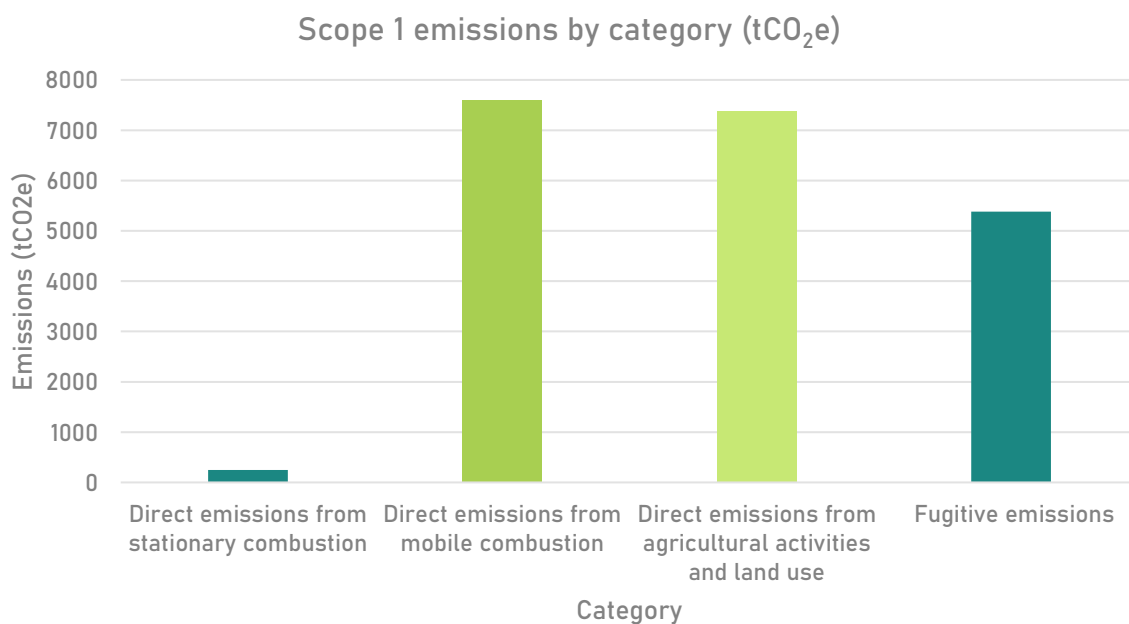


Figure 3 - Cemig's scope 1 emissions by emission category.

Cemig D presented the highest emission for this scope, totaling **17,879 tCO₂e**, approximately **87%** of scope 1, followed by Cemig GT, which emitted **2,514 tCO₂e**, about **12%** of scope 1 emissions. The Gasmig operating unit totaled 112 tCO₂e, representing **0.1%** of the company's emissions. Cemig SIM accounted for **0.02%** of scope 1 emissions, totaling **4 tCO₂e**. Trading totaled only **0.004 tCO₂e** and emissions for these categories did not occur for Cemig H.

Table 4 shows scope 1 emissions by precursor. Vegetation suppression was responsible for the highest precursor emissions, representing **36%** or **7,329 tCO₂e**, followed by diesel fuel consumption, which totaled **6,612 tCO₂e** or **32%**. Finally, the use of SF₆ was responsible for the third largest emission of the scope in question, which totaled **3,509 tCO₂e** or **17%**.

Table 4 – Scope 1 emissions by precursor.

Source	Emissions (tCO ₂ e)	Representativeness (%)
Natural gas	8.25	0.04%
Argon	-	-
Corgon 20 Gas	-	-
Diesel	6,612.35	32,05%
Liquefied petroleum gas (LPG)	9.67	0.05%
Gasoline	1,054.91	5,11%
Ethanol	1.46	0.01%

Source	Emissions (tCO ₂ e)	Representativeness (%)
CNG	19.78	0.10%
Kerosene	144.36	0,70%
Nitrogen fertilizer	57.23	0.28%
Vegetal supression	7,329.19	35,53%
Wood cutting	-	-
SF ₆	3,509	17,01%
Limestone	1.53	0.01%
Losses in natural gas distribution	-	-
R-407C	17.87	0.09%
R-410A	1,457.57	7,07%
Methane	62.04	0.30%
HFC-134a	353.60	1,71%

Stationary Combustion

'Stationary Combustion' aggregates emissions from the burning of fossil fuels to produce heat and electricity, such as the use of diesel in power generators. This category accounted for **1%** of total scope 1 emissions, totaling **249 tCO₂e**, in the year studied.

Cemig D had the highest emissions related to stationary combustion, totaling **214 tCO₂e**, or **86%** of the category, of which **189 tCO₂e** are related to the consumption of diesel oil in generators for distribution, **11 tCO₂e** to the use of diesel oil in generators (headquarters), **7 tCO₂e** to the use of natural gas in the organization's kitchens and about **6 tCO₂e** related to the consumption of natural gas in an autoclave.

Cemig GT emitted **35 tCO₂e**, the second highest for this category, of which **27 tCO₂e** were from the consumption of diesel in generators for transmission and **4 tCO₂e** from the consumption of diesel oil in generators for generation.

Gasmig, Trading and Cemig SIM operating units had a very small contribution in emissions for the stationary combustion category, totaling **0.04%** of the total.

The emissions have been broken down by operational unit and are presented in the Figure 4.

Stationary combustion emissions per operating unit
(tCO₂e)

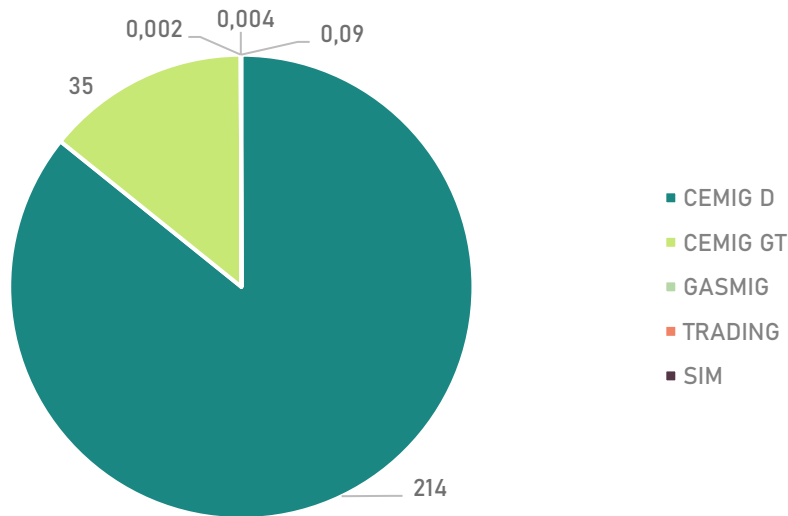


Figure 4 - Direct emissions from stationary combustion by Cemig operating unit.

Mobile Combustion

The 'Mobile Combustion' category comprises direct emissions related to the use of fossil fuels in transportation. Among Cemig's activities were emissions from burning fuels related to roads, waterways, and air transport. In 2023, total mobile combustion emissions were **7,601 tCO₂e**, representing **37%** of scope 1 emissions.

Cemig D operating unit was responsible for the largest share of emissions in this category, totaling **6,285 tCO₂e**, i.e., **83%** of emissions from mobile combustion. At Cemig D, diesel consumption in road transportation accounted for the largest share of emissions in this category, totaling **88%** of mobile combustion emissions or **5,500 tCO₂e**. The direct emissions from air transport from this operational unit accounted for **1%** of mobile combustion, totaling **69.44 tCO₂e**.

Cemig GT was responsible for the second-highest emission in the category in the category, totaling **1,262 tCO₂e**, which corresponds to **17%** of the company's mobile combustion emissions. The consumption of diesel fuel in road transport accounted for almost all emissions in this category, totaling **1,183.00 tCO₂e**, or **94%**. A small portion of the operational unit's emissions are related to waterway transport, which corresponds to **4.14 tCO₂e**.

Gasmig emitted **50.31 tCO₂e** related to the burning of fuels for road transport, while Cemig SIM emitted **4.03 tCO₂e**. Cemig H and Trading did not submit emissions for this sector.

The emissions have been broken down by operational unit and are presented in the Figure 5.

Mobile combustion emissions per operating unit (tCO₂e)

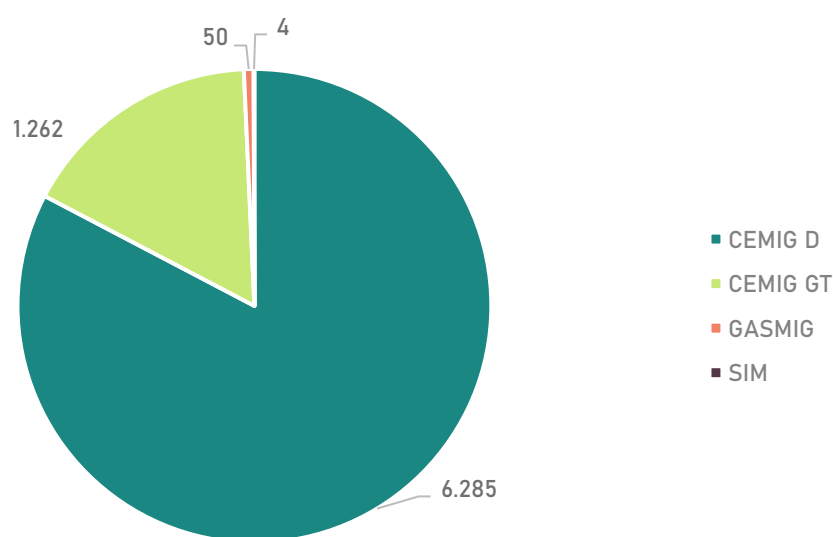


Figure 5 - Cemig's direct emissions from mobile combustion.

Agriculture

'Agriculture' comprises emissions from the use of fertilizers, either from the consumption of nitrogen in fertilizers or from the use of limestone. In 2023, the total emissions related to agricultural activities accounted for **59 tCO₂e**, corresponding to **0.3%** of total scope 1 emissions. The largest portion of the emissions came from Cemig D's operations, which represented **99%** emissions or **57 tCO₂e**. The rest of the emissions in this category are allocated to Cemig GT, representing **tCO₂e**, or 1% of these emissions (Figure 6).

Emissions from agricultural activities by operational unit (tCO₂e)

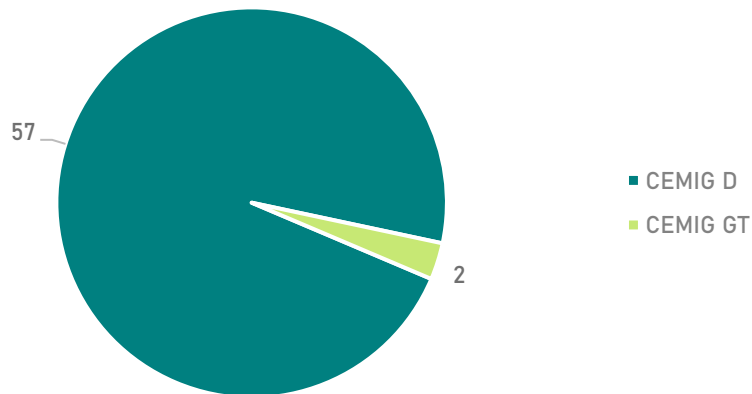


Figure 6 - Direct emissions from Agriculture by operating unit.

Land Use Change

Emissions related to 'Land Use Change' come from plant suppression and recomposition. In 2023, land use change-related emissions accounted for **7,329 tCO₂e**, **36%** of scope 1. All emissions related to this category are attributed to Cemig D operations, and the separation of emissions by activity can be seen in the Figure 7.

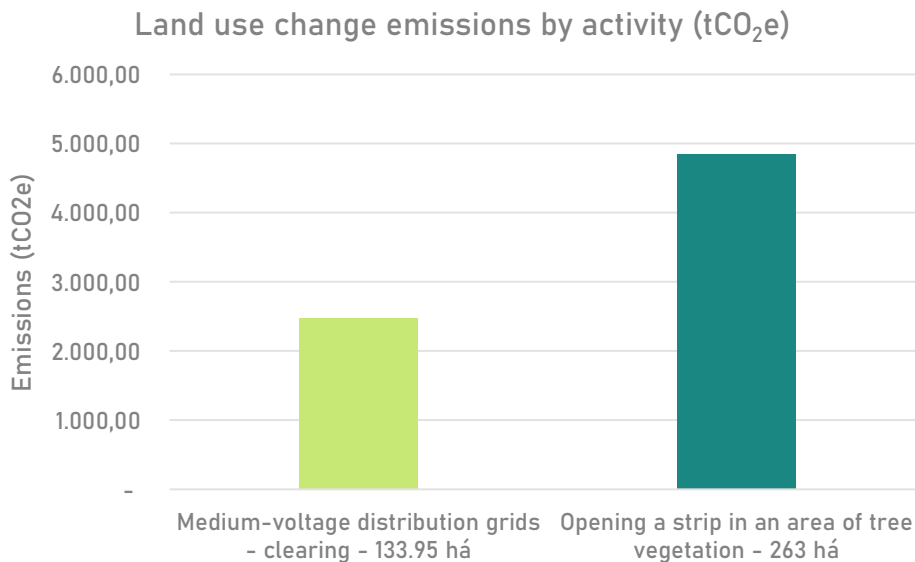


Figure 7 - Direct emissions from Land Use Change by Cemig D.

In 2023, CEMIG accounted for a total of **74,707 tCO₂e** removed from planting and restoring vegetation in Cerrado and Atlantic Forest areas. Vegetation recovery in the Atlantic Forest

biome accounted just over **22%** of removals, or **15,291 tCO₂e**. Vegetation recovery in the Cerrado was responsible for carbon sequestration of **58,415 tCO₂e** or approximately **78%**, as shown in Table 5.

Table 5 - Share of emissions removed by biome

Unit - Biome	Area (ha)	Remotion (tCO ₂ e)	Share (%)
Cemig D – Cerrado	146.05	57,498.33	76.96%
Cemig D – Atlantic Forest	39.76	15,653.77	20.95%
Cemig GT – Cerrado	2.33	917.29	1.23%
Cemig GT – Atlantic Forest	1.62	637.77	0.85%
Cerrado – TOTAL	148.38	58,415.62	78.19%
Atlantic Forest – TOTAL	41.38	16,291.54	21.81%
TOTAL	189.76	74,707.16	100%

Fugitive Emissions

The 'Fugitive Emissions' category comprises emissions from the exhaust of refrigerant gases (HFCs and PFCs), SF₆ or natural gas during Cemig's operations. In 2023, total emissions were **5,392 tCO₂e**, accounting for **26%** of scope 1 emissions.

Cemig D was responsible for most of the fugitive emissions, with **3,988 tCO₂e** or **74%** of the total. Cemig D's emissions in this category, **54%** are related to the use of SF₆, **37%** to the use of R-410 refrigerant gas, **9%** to HFC-134a and only **0.4%** are linked to the use of R-407C.

Cemig GT had the second largest share of fugitive emissions, totaling **1,332 tCO₂e**, which comprises **25%** of Cemig's emissions in this category. All fugitive emissions from the operating unit are linked to the exhaust of SF₆ refrigerant gases.

Gasmig had the third largest share of emissions, **62 tCO₂e**, which represents **1%** of emissions in this category, in its entirety from the exhaust of methane gas (CH₄).

Table 6 presents the history of SF₆ emissions at Cemig over the years 2019 and 2023.

Table 6 - History of SF₆ emissions.

SF ₆ (emissions)	2019	2020	2021	2022	2023
SF ₆ (tons)	0.217	0.141	0.155	0.172	0.149
SF ₆ (tCO ₂ e)	4,959	3,215	3,541	4,042	3,501
Loss percentage (SF ₆ loss (t)/total installed SF ₆ mass (t))	0.6	0.37	0.37	0.33	0.24

The emissions have been broken down by operational unit and are presented in Figure 8.

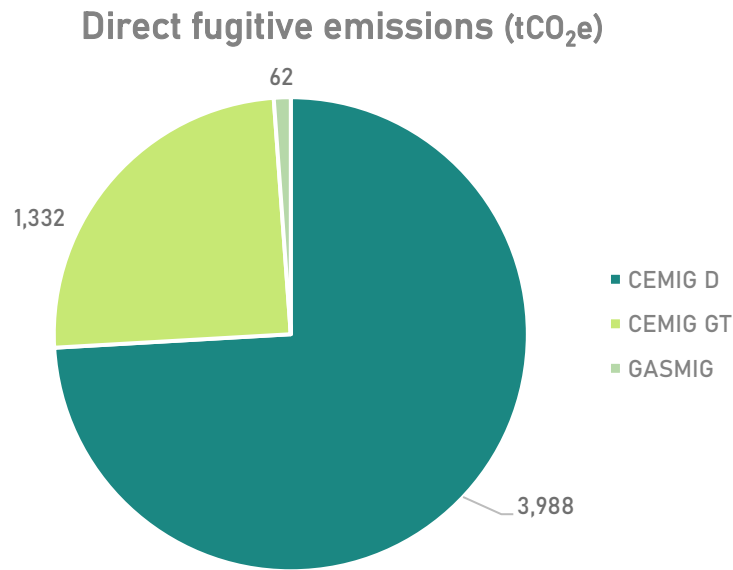


Figure 8 - Direct fugitive emissions by Cemig operating unit.

Scope 2

Scope 2 aggregates indirect emissions related to 'Electricity Consumption', 'Losses in Generation, Transmission and Distribution Systems' and 'Thermal Energy Consumption'. In 2023, scope 2-related emissions were **305,514 tCO₂e**, representing **6%** of total emissions.

Among scope 2 emission categories, Losses in Transmission and Distribution Systems were responsible for most of the emissions, totaling **303,131 tCO₂e** or **99%** scope 2, followed by emissions due to Electricity Consumption, which contributed to **2,383 tCO₂e** or **1%** of scope emissions. No thermal energy consumption was reported by Cemig (Figure 9).

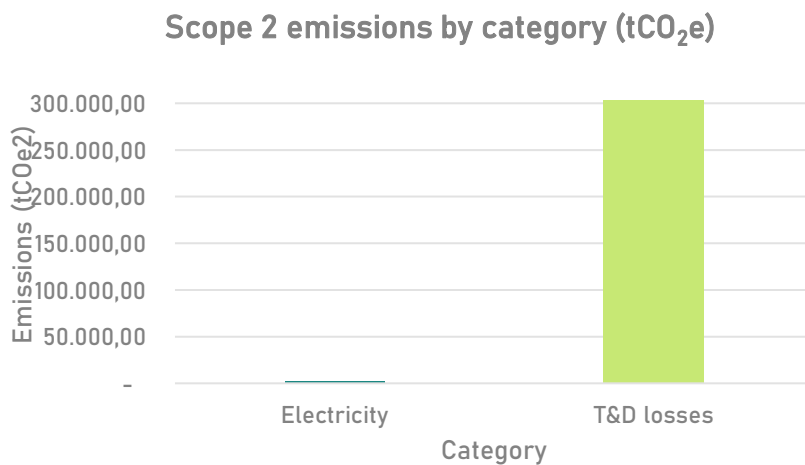


Figure 9 - Scope 2 indirect emissions by emission category.

Electricity Consumption

In 2023, Cemig's emissions related to electricity consumption were **2,383 tCO₂e**, which adds up to **1%** of scope 2 emissions. Cemig D was responsible for the highest emissions in this category, totaling **1,374 tCO₂e** or **58%** of emissions from electricity consumption, followed by Cemig GT, amounting to **980 tCO₂e** or **41%** of emissions, and Gasmig, which emitted **23 tCO₂e** and represented **1%** of the total.

The lowest contributions were from Cemig SIM, Trading and Centroeste, which together totaled **6 tCO₂e**, or **0.2%** of emissions from electricity consumption. Cemig H did not present emissions in the category.

It is important to highlight that 100% of emissions related to Cemig's electricity consumption were offset through Renewable Energy Certificates (Cemig REC). However, the accounting for this reduction was allocated to Scope 3, in the category "Activities related to fuel and energy not included in scopes 1 and 2."

The emissions have been broken down by operational unit and are presented in the Figure 10.

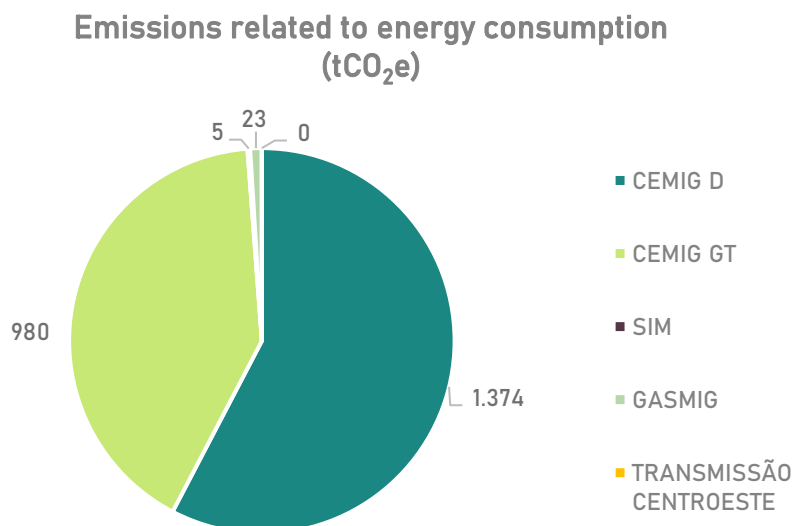


Figure 10 - Emissions from electricity consumption by Cemig operating unit.

Transmission, Generation and Distribution System Losses

Technical losses in transmission, generation and distribution systems accounted for the second share of scope 2 emissions, totaling **303,131 tCO₂e**, or **99%** of scope emissions. Losses in Cemig D's distribution system accounted for all emissions for this category.

Scope 3

Scope 3 emissions are indirect and result from activities that are not directly controlled by Cemig. Cemig presented **5,106,122 tCO₂e**, which represents **94%** of total emissions.

Fuel and energy-related activities not included in scopes 1 and 2 are the ones with the highest emissions, with **2,585,631 tCO₂e**, which represents **51%** of scope emissions. Next, we have the use of goods and services sold, responsible for **1,907,211 tCO₂e** or **37%** of total scope 3 emissions. The goods and services purchased were responsible for **428,030 tCO₂e**, which represents **8%** of scope 3. Capital goods were responsible for **111,631 tCO₂e** of scope emissions, or **2%**. The investments resulted in **72,581 tCO₂e**, which represents **1%** of scope emissions. Waste emissions generated from operations, business travel, and employee commuting account for a very small share of total emissions, with **0.004%**, **0.02%** and **0.001%** respectively (Tabel 7).

Tabel 7 - Scope 3 emissions by emission category.

Scope	Category	Emissions (tCO ₂ e)	Representativeness (%)
Scope 3	Purchased goods and services	428,030.22	8,37%
	Capital goods	111,631.07	2,19%
	Activities related to fuel and energy not included in scopes 1 and 2	2,585,631.36	50,64%
	Waste generated in operations	204.60	0.004%
	Business travel	788.26	0.02%
	Commuting to work for employees	44.80	0.001%
	Use of goods and services sold	1,907,211.02	37,35%
	Investments	72,581.17	1,42%
	TOTAL SCOPE 3	5,106,122.50	100%

Use of goods and services sold

The GHG scope 3 'Use of Goods and Services Sold' category refers to indirect emissions generated by the end-use of goods and services sold by the organization. At Cemig, the goods and services sold consist of the sale of natural gas by Gasmig.

In 2023, Cemig had a total of **1,907,211 tCO₂e** of emissions in the category, which represents a significant percentage of the company's scope 3, amounting to **37%**.

Gasmig, which is responsible for the commercialization of natural gas in the state of Minas Gerais, presented the total emissions for the category by operating unit.

Purchased goods and services

The category 'Purchased Goods and Services' refers to indirect emissions related to the products and services that the company purchases from third parties. The category had a total emission of **428,030 tCO₂e** in 2023, representing **8%** of scope 3.

The calculation for purchased goods and services incorporated several emission sources. These include fuels used by contractors in the construction of transmission lines, which in previous inventories were calculated in the upstream transport and distribution category (scope 3). Furthermore, emissions related to the extraction, manufacture and transportation of fuels including natural gas sold by Gasmig, known as WTT emissions, were added at the request of SBT. Finally, the use of LPG in forklifts by outsourced companies was also taken into account, although only the amount of LPG in forklifts was considered in this category in previous inventories.

Gasmig was responsible for the largest share of emissions, totaling **323,446 tCO₂e**, which represents **75%** of the category. The operating unit with the second highest emissions was Cemig D, with **45,032 tCO₂e (11%)**. Emissions from suppliers of products and services amounted to **58,696 tCO₂e**, or **13%** of emissions in this category, and were not allocated to any operating unit but to Cemig as a whole.

Capital goods

In 2023, Cemig added new plants to its portfolio. The total capacity of the plants acquired was 58.17 MW, a value calculated based on the shareholding ratio that Cemig holds in each plant. Thus, adoption was accounted for in the capital goods category. Within this source, Cemig was responsible for the emission of **111,631 tCO₂e** in 2023.

Fuel and energy-related activities not included in scopes 1 and 2

The category of 'Fuel and energy-related activities not included in GHG scope 1 and 2' refers to indirect emissions generated by the end-use of goods and services sold by the organization. At Cemig, the goods and services sold consist of the sale of electricity.

In 2023, Cemig had a total of **2,585,631 tCO₂e** of emissions in the category, which represents more than half of the company's scope 3 emissions, totaling **51%**.

Cemig D had the highest emissions for the category per operating unit, amounting to **1,149,871 tCO₂e**, which represents **44%**. Subsequently, Cemig GT was responsible for **835,190 tCO₂e**, or **32%** of emissions related to the sale of electricity. Cemig H was responsible for the third largest volume of emissions in this category, totaling **601,004 tCO₂e** or **23%**.

Emissions were broken down by operating unit and are shown in Table 8.

Tabel 8 - Electricity trading emissions by subsidiary

Electricity trading			
Category	Units/Subsidiaries	Electricity (MWh)	Emissions
Electricity trading	Cemig D	29,859,372.20	1,149,585.83
	Cemig GT	20,131,523.66	775,063.66
	Rosal	219,187.69	8,438.73
	Três Marias	252,294.96	9,713.36
	Camargos	44,056.93	1,696.19
	Horizontes	81,481.68	3,137.04
	Itutinga	41,707.15	1,605.73
	Leste	40,080.31	1,543.09
	Oeste	20,035.49	771.37
	Parajuru		-
	PCH	121,277.07	4,669.17
	Poço Fundo	148,791.60	5,728.48
	Sa Carvalho	471,851.19	18,166.27

Electricity trading			
Category	Units/Subsidiaries	Electricity (MWh)	Emissions
	Salto Grande	54,399.94	2,094.40
	Sul	66,576.00	2,563.18
	Volta do Rio		-
	SIM		-
	Cemig H	15,606,620.12	600,854.86
	Centroeste		-
	Gasmig		-
	Trading		-
Total category		67,159,255.99	2,585,631.36

In addition, Cemig sold renewable electricity that does not have emissions, with **2.355.166 MWh** from Cemig REC and **1.518.154 MWh** from I-REC.

Waste generated in the operation

The Scope 3 emission category 'Waste generated in operation' refers to indirect emissions arising from the management of waste generated during the organization's activities. Waste generated in the operation totaled **204 tCO_{2e}** or **0.004%** of scope 3 emissions.

Business travel

The 'Business Travel' emission category comprises GHG emissions from trips undertaken by employees of the organization for business purposes. Travel emissions were **788 tCO_{2e}**, which is a very small share of total **0.02% scope emissions**.

Cemig D was responsible for the highest emissions in the category, totaling **321 tCO_{2e}**, which represents **41%** of emissions related to business travel, followed by Cemig GT, responsible for **236 tCO_{2e}**, or **30%** of the total. Cemig H was responsible for **219 tCO_{2e}**, accounting for **28%** of emissions derived from business travel, being the third largest emitter for the category in question. Gasmig was responsible for **8 tCO_{2e}** or **1%** of the

emissions, while Cemig SIM emitted 4 tCO₂e, which represents 0.5% of the category's emissions.

The emissions have been broken down by operational unit and are presented in the Figure 11.

Emissions from business travel by operating unit (tCO₂e)

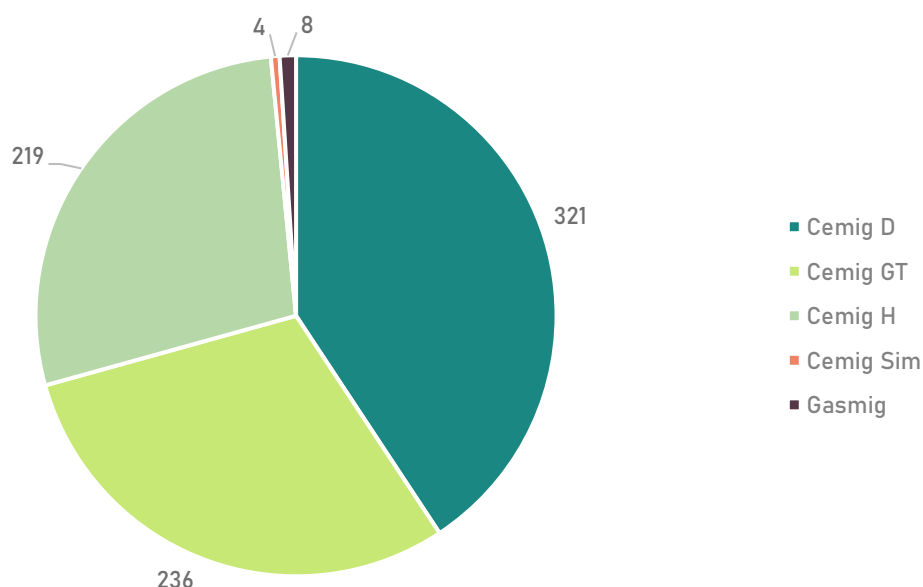


Figure 11 - Indirect emissions from the business travel category by operating unit.

Employee commuting

The emission category of 'Employee Commuting' includes the GHG emissions associated with the daily commute of the organization's employees between their homes and workplaces.

In 2023, the total commuting emissions of employees was 45 tCO₂e, which represents a very low percentage of scope 3, amounting to 0.001%.

The emissions have been broken down by operational unit and are presented in the Figure 12.

Emissions from employee home-work commuting by operational unit (tCO₂e)

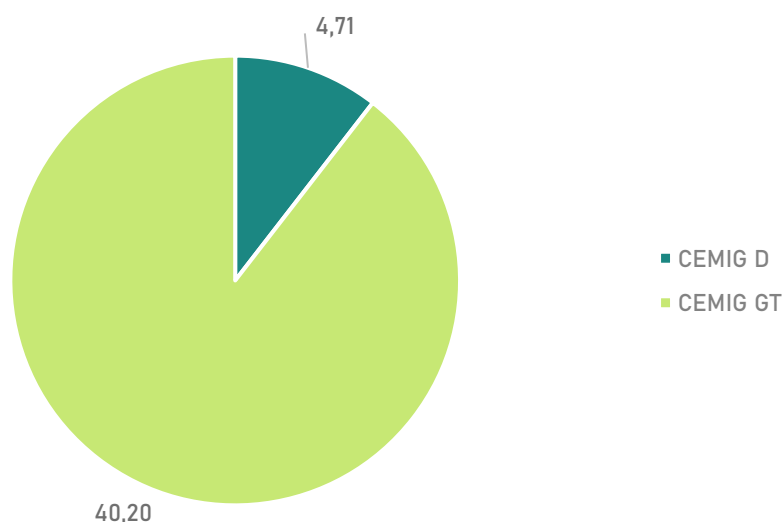


Figure 12 - Indirect emissions from the commuting category by Cemig operating unit.

Investments

The investments category refers to the calculation of emissions resulting from the operation of investments. These emissions were evaluated according to Cemig's shareholding in the companies in which it does not have operational control, taking into account the scope 1 and 2 emissions of these companies. This emission category totaled **72,581 tCO₂e**, which represents 1% of scope 3 emissions.

Cemig's 45% shareholding in Aliança Geração de Energia resulted in proportional emissions of **73 tCO₂e** due to the operation of this investment. Cemig has a 21% stake in Taesa, a company in the energy transmission segment, resulting in proportional emissions of **72,029 tCO₂e** due to the operation of this investment. Cemig, with a 12% shareholding in Norte Energia, is responsible for proportional emissions of **477 tCO₂e**. Cemig holds a 49% stake in the Guanhães, PCH Pipoca, PCH Cachoeirão and Piracambi hydroelectric plants, which did not have emissions data. Using data from HPP Salto Grande, controlled by Cemig, emissions were extrapolated, resulting in 0.7 tCO₂e for each plant (Figure 13).

Emissions proportional to investments (tCO2e)

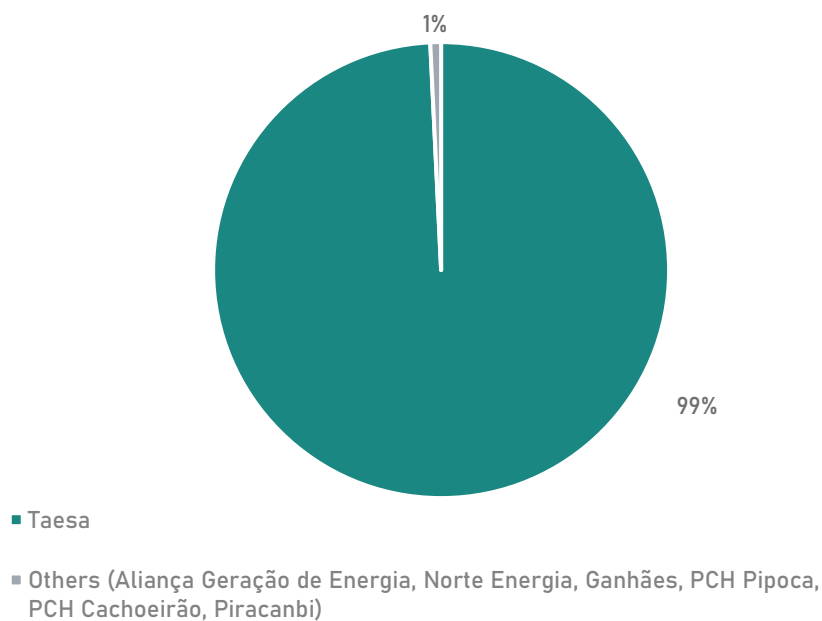


Figure 13 - Emissions proportional to investments (tCO2e)

COMPARATIVE ANALYSIS YEARS 2020-2023

This section presents a comparative analysis of GHG emissions between 2020 and 2023. By comparing data collected over a four-year period, it is possible to identify trends, patterns and variations in the company's emissions, allowing it to monitor its emissions and draw up reduction strategies. In addition, a comparative analysis for this period can help identify the impact of external factors, such as changes in the economy, politics, technology, climate and other variables that can affect a company's performance.

Between 2020 and 2021, Cemig's emissions grew by around 86%, jumping from **5,706,171 tCO₂e** in 2020 to **10,624,362 tCO₂e** in 2021. In 2021, emissions were **10,624,362 tCO₂e**, falling in 2022 to **5,666,871 tCO₂e**, meaning a drop of **47%**. Between 2022 and 2023, Cemig showed an increase in its emissions and a reduction of **4%**, from **5,666,871 tCO₂e** to **5,432,267 tCO₂e** in 2023.

The decrease in emissions in 2021 and 2022 is mainly related to the decrease in the emission factor of the National Interconnected System network, which peaked in 2021 (0.1264 tCO₂e/MWh) and decreased in 2022 (0.0426 tCO₂e/MWh). The variation between emission factors is related to changes in the rainfall regime, since in years with less rainfall (total precipitation volume) hydroelectric plants lose their capacity to produce electricity and the National Electricity System Operator (ONS) has to “activate” thermoelectric plants, which generate higher emissions given the use of fossil sources. The history of emissions, from 2020 to 2023, is highlighted in Figure 14.

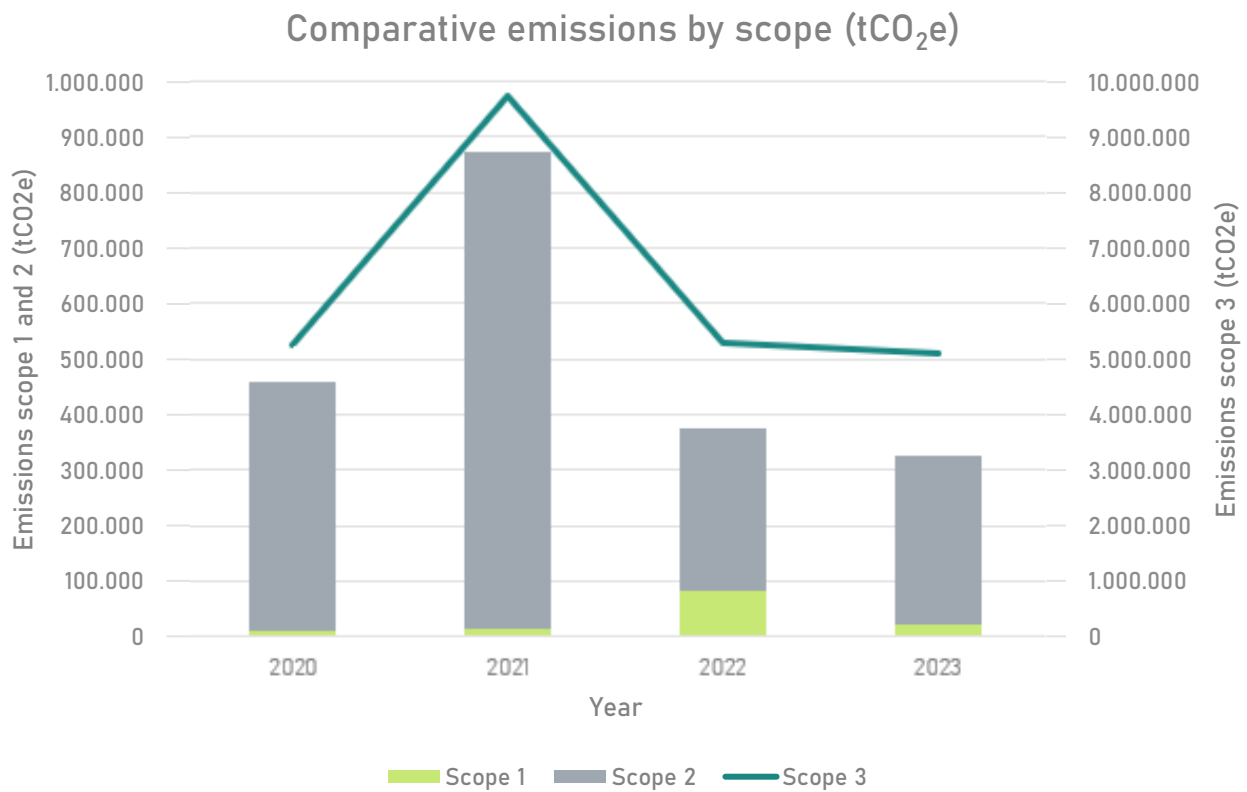


Figure 14 - Historical series of Cemig's emissions.

Regarding Scope 1, between 2020 and 2021 there was an increase of **13%** or **1.4 thousand tCO₂e**. Between 2021 and 2022, there was an increase in emissions of approximately **70,000 tCO₂e**, which is explained by the increase in the company's vegetation suppression due to energy distribution network expansion works. Between 2022 and 2023, emissions fell by **75%** or **62,000 tCO₂e**. The results for scope 1 emissions from 2020 to 2023 are highlighted in Figure 15 and are further detailed in Table 9.

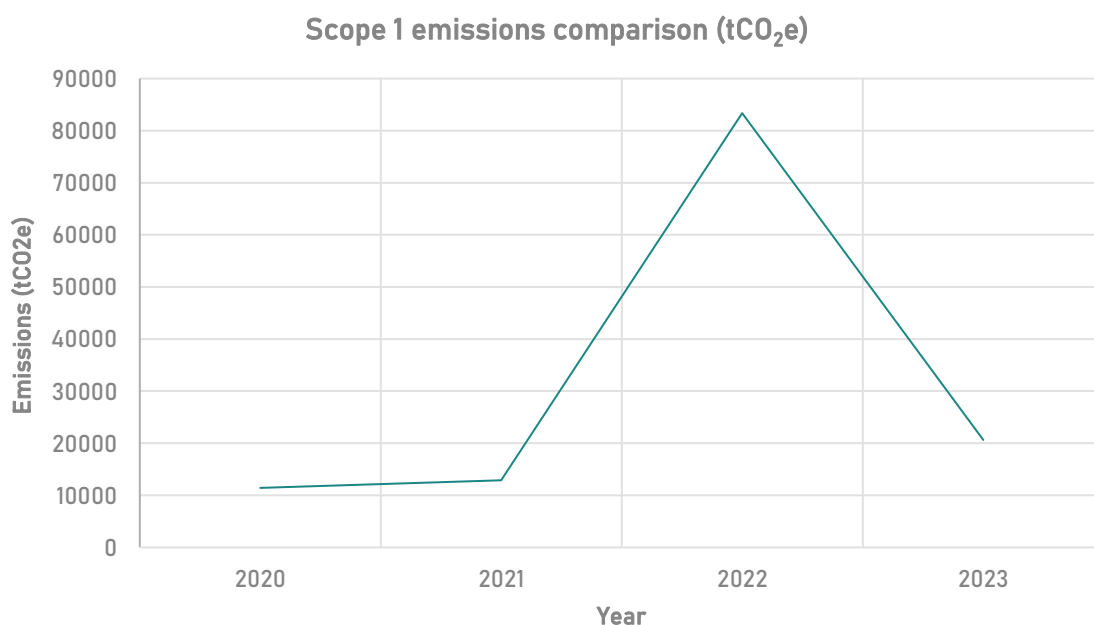


Figure 15 - Historical series of Cemig's Scope 1 emissions.

Table 9 - Distribution of historical emissions in Scope 1 and variation in the period 2022-2023.

Scope 1						
CATEGORY	Source	2020	2021	2022	2023	V (2022-2023)
Stationary combustion	Natural Gas	13,64	9,3	7,47	8,25	10%
	Diesel Oil	184,79	104,96	133,08	232,01	74%
	Liquefied Petroleum Gas (LPG)	0	0	0	8,06	0%
	Gasoline	0	0	0	0,98	0%
	Total	198,43	114,27	140,79	249,29	77%
Mobile combustion	Liquefied Petroleum Gas (LPG)	1,35	1,33	72,38	0,90	-99%
	Diesel Oil	6.834,52	7.189,22	6.085,23	6.380,35	5%
	Hydrated Ethanol	3,26	2,39	0,96	1,46	52%
	Gasoline	1.022,38	1.586,24	1.107,55	1.053,93	-5%
	Aviation Kerosene	197,64	143,32	131	144,36	10%
	Natural gas (CNG)	53,46	34,35	-	19,78	-
	Total	7.927,83	8.956,83	7.307,85	7.600,78	4%
Fugitive emissions	Carbon dioxide (CO ₂)		-	-	-	-

Scope 1						
CATEGORY	Source	2020	2021	2022	2023	V (2022-2023)
	R-22	0	98,56	927,8	0%	-100%
	R-407c	0	15,43	0	17,87	0%
	R-410a	0	17,31	381,66	1.457,57	282%
	SF6	2.953,51	3.542,46	4.042,00	3.491,63	-14%
	HFC-134a	0	14,3	216,4	353,60	63%
	Methane	0	0	0	62,04	0%
	Total		3.262,22	3.688,06	6.314,00	5.382,71
Agriculture	Limestone	1,44	1,77	0,0012	1,53	124.700%
	Synthetic fertilizers	2,73	45,21	5.852,00	57,23	-99%
	Total	4,17	46,98	5.852,00	58,76	-99%
Land use change	Vegetation suppression	30,88	41,5	63.836,50	7.329,19	-89%
	Total	30,88	41,5	63.836,50	7.329,19	-89%
TOTAL		11.419,36	12.847,64	83.451,14	20.630,56	-75%

In scope 2, between 2020 and 2021, emissions grew by **92%**, or **413,149 tCO₂e** following the increase in the emission factor. Between 2021 and 2022, there was a reduction of around **570,000 tCO₂e** in emissions, also caused by the change in the emission factor (Table 10). In 2023, emissions increased by 5% compared to the previous year. The results for scope 2 emissions from 2020 to 2023 are highlighted in Figure 16 and Table 11.

Table 10 – Average grid emission factor (tCO₂/MWh)

Year	Average grid emission factor (tCO ₂ /MWh)
2020	0,0617
2021	0,1264
2022	0,0425
2023	0,0385

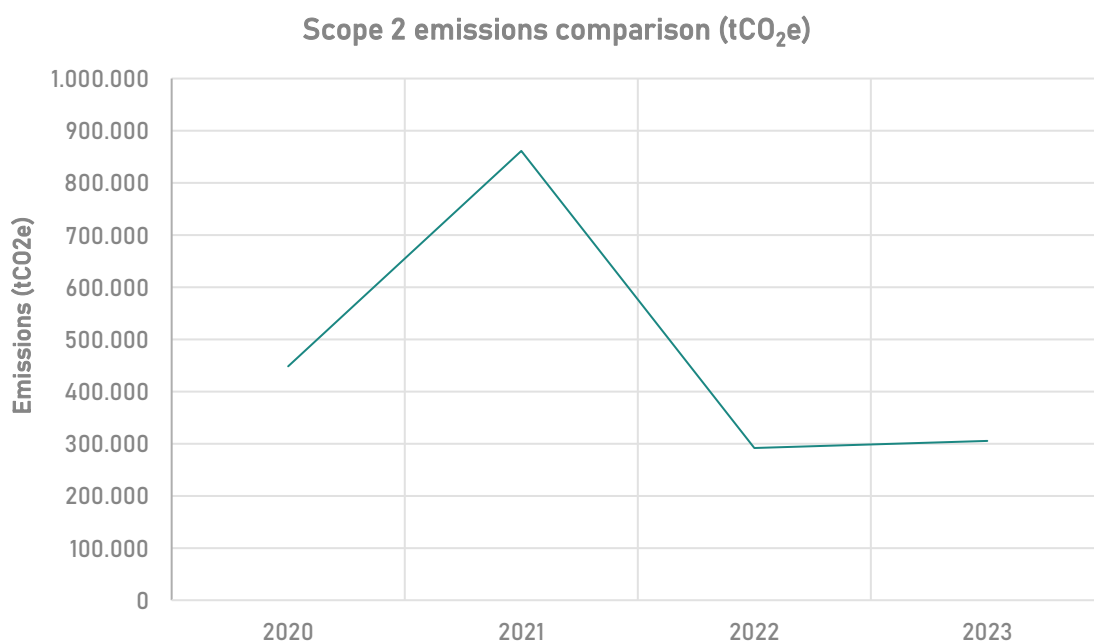


Figure 16 - Historical series of Cemig's Scope 2 emissions.

Table 11 - Historical series of Scope 2 emissions.

SCOPE 2						
CATEGORY	Fonte	2020	2021	2022	2023	Varição (2022-2023)
Electricity (location-based)	Energy consumption	2.386,00	4,707.95	1,734.83	2,382.64	37%
T&D losses (location-based)	Energy Losses	445.698,00	856,525.09	290,031.42	303,131.06	5%
TOTAL		448.084,00	861.233,04	291,766.24	305,513.70	5%

In scope 3, there was a **86%** increase in emissions related to electricity trading between 2020 and 2021. One factor that may have contributed to this increase is the resumption of activities after the lockdown related to the COVID-19 pandemic in 2020, where businesses and industry had their activities reduced and consequently reduced their energy consumption. Between 2021 and 2022, there was a drop of **4,458,653 tCO₂e**, or **46%**. One factor that may have contributed to this change is the significant drop in the average annual emissions factor for electricity production in Brazil from 2021 to 2022. In 2023, total scope 3 emissions rose by **4%** compared to the previous year, or a difference of **185,000 tCO₂e**. The results for scope 3 emissions from 2020 to 2023 are highlighted in Figure 17 and Table 12.

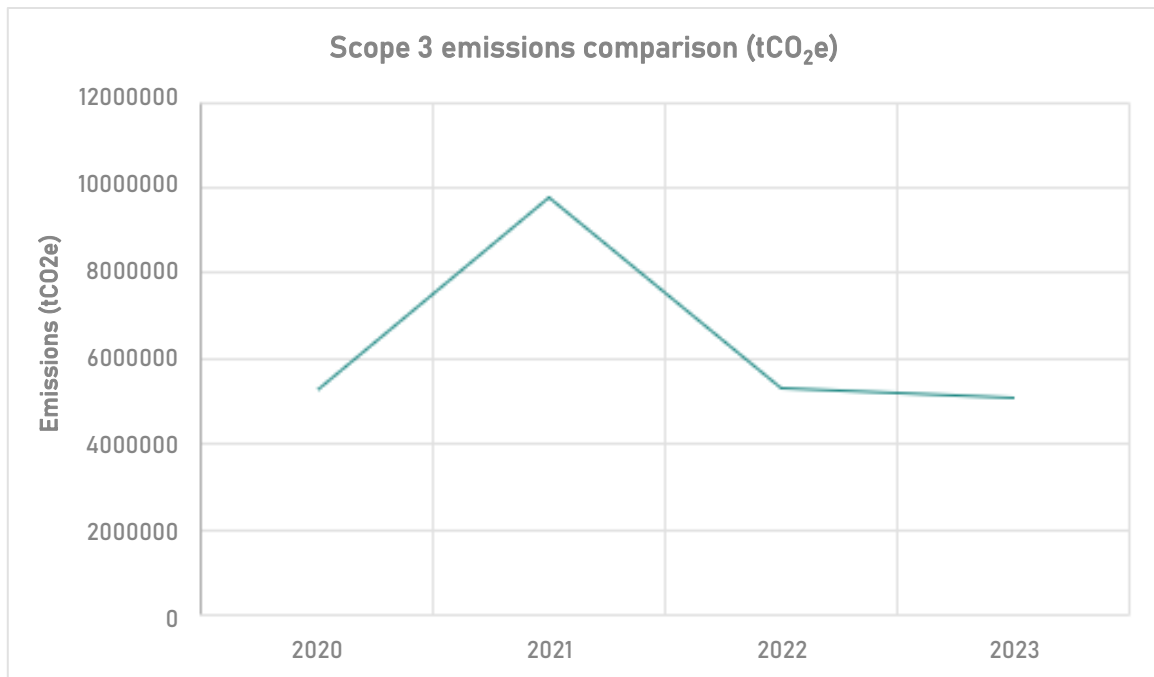


Figure 17 - Historical series of Cemig's Scope 3 emissions.

Table 12 - Historical series of Scope 3 emissions.

SCOPE 3					
CATEGORY	2020	2021	2022	2023	Variation (2022-2023)
Purchased goods and services	21.841	473,101.54	385,513.22	428.030,22	11%
Capital goods	0	-	-	111,631.07	-
Activities related to fuel and energy not included in Scopes 1 and 2	0	6,403,634.86	2,209,346.76	2,585,631.36	17%
Solid waste	1.004	558.17	582.98	204.59	-65%
Business trips	99	96.52	328.91	788.00	140%
Employee commuting	174	533.58	141.10	44.80	-68%
Goods and services sold	9.276.221,56	2,872,586.69	2,695,945.19	1,907,211.02	-29%
Investments	0	-	-	72,581.17	-
TOTAL	5.246.668,00	9,750,511.36	5,291,858.15	5,106.122,50	4%

ANNEX I – TOTAL EMISSIONS IN TONNES OF GAS AND TONNES OF CO₂ EQUIVALENT – 2023

The following are a series of tables detailing the results.

Table 13 - Cemig - Emissions in metric tons, by type of GHG.

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	15,030.44	305,513.70	5,105,598.53
CH ₄	3.15	-	7.27
N ₂ O	0.69	-	0.03
HFCs	1.04		-
PFCs	-		-
SF ₆	0.15		-
NF ₃	-		-

Table 14 - Cemig - Emissions in metric tons of CO₂ equivalent (tCO_{2e}).

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	15,030.44	305,513.70	5,105,598.53
CH ₄	88.06	-	203.42
N ₂ O	181.53	-	8.74
HFCs	1,829.04		-
PFCs	-		-
SF ₆	3,501.50		-
NF ₃	-		-
TOTAL	20,630.56	305,513.70	5,106,122.50

Table 15 - Cemig - Biogenic emissions (tCO_{2e}).

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	38,622.60	-	7.42
CH ₄			
N ₂ O			
HFCs			
PFCs			
SF ₆			
NF ₃			
TOTAL	38,622.60	-	7.42

Table 16 - Emissions of other GHGs not regulated by the Kyoto Protocol.

	CATEGORY	Source
CFC-11	-	-
CFC-12	-	-
CFC-13	-	-
CFC-113	-	-
CFC-114	-	-
CFC-115	-	-
Halon-1301	-	-
Halon-1211	-	-
Halon-2402	-	-
Tetracloroto de carbono (CCl ₄)	-	-
Bromometano (CH ₃ Br)	-	-
Methyl chloroform (CH ₃ CCl ₃)	-	-
R-407c	0.011	17.87
R-410a	0.757	1,457.57
HCFC-21	-	-
HCFC-22 (R22)	-	-
HCFC-123	-	-
HCFC-124	-	-
HCFC-134a	0.272	353.60
HCFC-141b	-	-
HCFC-142b	-	-
HCFC-225ca	-	-
HCFC-225cb	-	-

Table 17 - Emissions per operating unit.

Operational Unit	Scope 1 (tCO ₂ e)	Scope 2 (tCO ₂ e)	Scope 3 (tCO ₂ e)	Total	Representativeness (%)
Cemig D	17,879.25	304,504.89	1,204.902,79	1,527,286.84	28%
Cemig GT	2,560.17	166.78	629,016.20	777,744.61	14%
Três Marias	0.002	1.26	9,715.77	9,717.03	0.18%
Camargos	8.36	0.20	1,714.68	1,723.24	0.03%
Horizontes	0.002	0.33	3,137.82	3,138.15	0.06%
Itutinga	8.54	0.54	1,608.89	1,617.97	0.03%
Leste	0.44	2.27	1,543.58	1,546.29	0.03%
Oeste	5.50	2.21	6,590.26	6,597.97	0.12%
Parajuru	54.34	-	1.32	55.66	0.00%
PCH	1.04	0.79	4,670.57	4,672.40	0.09%
Poço Fundo	0.56	0.37	5,729.96	5,730.89	0.11%
Rosal	7.44	794.67	8,456.37	9,259.48	0.17%
Sa Carvalho	21.32	3.03	18,177.10	14,819.62	0.27%
Salto Grande	0.002	1.43	2,094.92	2,096.35	0.04%
Sul	6.09	6.13	2,565.07	2,577.29	0.05%
Volta do Rio	7.05	-	2.285	9.34	0.00%
SIM	3.99	5.30	7.51	16.80	0.00%
Cemig H	-	-	601,222.89	601,222.89	11.07%
Centroeste	-	0.14	771.56	771.70	0.01%
Gasmig	112.46	23.10	2,217,526.32	2,217,661.88	40.82%
Trading	0.004	-	-	0.26	0.00%
Cemig (other)	-	-	244,001.09	244,001.10	4.49%
TOTAL	20.630,56	305,513.70	5,106.122,50	5,432,266.76	100%

Cemig D

Table 18 - Cemig D - Emissions in metric tons, by type of GHG.

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	13,707.66	304,504.89	1,204,897.29
CH ₄	0.684	-	0.099
N ₂ O	0.595	-	0.010
HFCs	1.041		-

GHG (t)	Scope 1	Scope 2	Scope 3
PFCs	-		-
SF ₆	0.092		-
NF ₃	-		-

Table 19 - Cemig D - Emissions in metric tons, by type of GHG (tCO_{2e}).

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	13,707.66	304,504.89	1,204,897.29
CH ₄	19.15	-	2.77
N ₂ O	157.68	-	2.65
HFCs	1,829.04		-
PFCs	-		-
SF ₆	2,166.00		-
NF ₃	-		-
TOTAL	17,879.52	304,504.89	1,204,902.71

Cemig GT

Table 20 - Cemig GT - Emissions in metric tons, by type of GHG.

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	1,194.03	166.78	629,016.20
CH ₄	0.18	-	0.42
N ₂ O	0.08	-	0.01
HFCs	-		-
PFCs	-		-
SF ₆	0.055		-
NF ₃	-		-

Table 21 - Cemig GT - Emissions in metric tons, by type of GHG (tCO_{2e}).

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	1,194.03	166.78	629,002.17
CH ₄	5.18	-	11.65
N ₂ O	21.46	-	2.38
HFCs	-		-
PFCs	-		-
SF ₆	1,293.50		-
NF ₃	-		-
TOTAL	2,514.17	166.78	629,016.20

Gasmig

Table 22 - Gasmig - Emissions in metric tons, by type of GHG.

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	48.08	23.10	2,217,526.32
CH ₄	2.26	-	-
N ₂ O	0.004	-	-
HFCs	-		-
PFCs	-		-
SF ₆	-		-
NF ₃	-		-
TOTAL			

Table 23 - Gasmig - Emissions in metric tons, by type of GHG (tCO_{2e}).

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	48.08	23.10	2,217,526.32
CH ₄	63.34	-	-
N ₂ O	1.06	-	-
HFCs	-		-
PFCs	-		-
SF ₆	-		-
NF ₃	-		-
TOTAL	112.47	23.10	2,217,526.32

Centroeste

Table 24 - Centroeste - Emissions in metric tons, by type of GHG.

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	-	0.14	771.56
CH ₄	-	-	-
N ₂ O	-	-	-
HFCs	-		-
PFCs	-		-
SF ₆	-		-
NF ₃	-		-

Table 25 - Centroeste - Emissions in metric tons, by type of GHG (tCO_{2e}).

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	-	0.14	771.56
CH ₄	-	-	-
N ₂ O	-	-	-
HFCs	-		-
PFCs	-		-
SF ₆	-		-
NF ₃	-		-
TOTAL	-	0.14	771.56

Cemig SIM

Table 26 - Cemig SIM - Emissions in metric tons, by type of GHG.

GEE (t)	Escopo 1	Escopo 2	Escopo 3
CO ₂	3.91	5.31	7.51
CH ₄	0.003	-	-
N ₂ O	-	-	-
HFCs	-		-
PFCs	-		-
SF ₆	-		-
NF ₃	-		-

Table 27 - Cemig SIM - Emissions in metric tons, by type of GHG (tCO₂e).

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	3.91	5.30	7.51
CH ₄	0.084	-	-
N ₂ O	-	-	-
HFCs	-		-
PFCs	-		-
SF ₆	-		-
NF ₃	-		-
TOTAL	3.99	5.30	7.51

Cemig H

Table 28 - Cemig H - Emissions in metric tons, by type of GHG.

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	-	-	601,220.98
CH ₄	-	-	0.002
N ₂ O	-	-	0.007
HFCs	-		-
PFCs	-		-
SF ₆	-		-

NF ₃	-		-
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Table 29 - Cemig H - Emissions in metric tons, by type of GHG (tCO_{2e}).

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	-	-	601,220.98
CH ₄	-	-	0.06
N ₂ O	-	-	1.85
HFCs	-		
PFCs	-		
SF ₆	-		
NF ₃	-		
TOTAL	-	-	601,222.89

Cemig Trading

Table 30 - Cemig Trading - Emissions in metric tons, by type of GHG.

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	0.004	0.26	0.001
CH ₄	-	-	-
N ₂ O	-	-	-
HFCs	-		-
PFCs	-		-
SF ₆	-		-
NF ₃	-		-

Table 31 - Cemig Trading - Emissions in metric tons, by type of GHG (tCO_{2e}).

GHG (t)	Scope 1	Scope 2	Scope 3
CO ₂	0.004	0.26	0.001
CH ₄	-	-	-
N ₂ O	-	-	-
HFCs	-		-
PFCs	-		-
SF ₆	-		-
NF ₃	-		-
TOTAL	0.004	0.26	0.001

ANNEX – DECLARATION OF VERIFICATION

BUREAU VERITAS
Certification



Verification Statement No 071/2024

This Verification Statement documents that **BVQI DO BRASIL SOCIEDADE CERTIFICADORA LTDA** has carried out the verification activities in accordance with the Verification Specifications of the Brazilian GHG Protocol Program and the ABNT NBR ISO 14064-3:2019 standard.

Organização Inventariante:	COMPANHIA ENERGÉTICA DE MINAS GERAIS, GERAÇÃO E TRANSMISSÃO S.A. / CEMIG DISTRIBUIÇÃO S.A.
CNPJ:	06.981.180/0001-16
Endereço:	Avenida Barbacena, 1200, Bairro Santo Agostinho - Belo Horizonte/MG
Responsável:	Érika Silveira Torres
E-mail:	estorres@cemig.com.br

The greenhouse gas (GHG) emissions reported by the Inventorying Organization in its emissions inventory, from January 1st to December 31st, 2023, are verifiable and comply with the requirements of the Brazilian GHG Protocol Program, as detailed in the Brazilian GHG Protocol Program Specifications for Accounting, Quantification, and Disclosure of Corporate Greenhouse Gas Emissions Inventories (EPB).

Confidence Level

The Verification Body (VB) has assigned the following level of confidence to the verification process:

<input checked="" type="checkbox"/>	Verification with confidence level limited
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"The greenhouse gas inventory of the inventorying organization for the period of January 1st to December 31st, 2023 is materially correct, is a fair representation of GHG data and information, and has been prepared in accordance with the EPB."

Scope of Verification

The inventory for the period of 2023 of the inventory organization was checked within the following scope:

Organizational Boundaries		Operational Boundaries	
<input checked="" type="checkbox"/>	Operational control	<input checked="" type="checkbox"/>	Scope 1
		<input checked="" type="checkbox"/>	Scope 2 – Location-based approach
	Shareholding		Scope 2 – Approach based on purchasing choice
		<input checked="" type="checkbox"/>	Scope 3
They were excluded from the verification: not applicable.			





Facilities Visited

Installation	Relationship with the Holding Company	Address	Date of visit
CEMIG ESCRITÓRIO CENTRAL	Company Headquarters	Av. Barbacena, 1200, 20º andar, A2, Belo Horizonte – MG	04/18/2024
ENCEL	Contractor	Rua Rio Elba, 150, Novo Riacho, Contagem - MG	04/18/2024
TS INFRA	Contractor	Rua Pico do Rola Moça, 100, Distrito Industrial do Jatobá, Belo Horizonte – MG	04/18/2024

Total emissions verified throughout the organization – Operational Control Approach

GHG emissions in tons of CO ₂ equivalent (tCO ₂ e)				
GHG (*)	Scope 1	Scope 2 Location-based approach	Scope 2 Approach based on purchasing choice	Scope 3 (if applicable)
CO ₂	15,030.441	305,513.700	-	5,105,910.330
CH ₄	88.06	-	-	203.42
N ₂ O	181.525	-	-	8.745
HFCs	1,829.037	-	-	-
PFCs	-	-	-	-
SF ₆	3,051.500	-	-	-
NF ₃	-	-	-	-
TOTAL	20,630.563	305,513.700	-	5,106,122.50
Biogenic CO ₂	38,622.597	-	-	7.421

[* Gases regulated by Kyoto Protocol/ GWP of AR 5th IPCC]

Total removals verified throughout the organization – Operational Control Approach

Biogenic CO ₂ Removal (tCO ₂ e)				
GHG	Scope 1	Scope 2 Location-based Approach	Scope 2 Approach based on purchasing choice	Scope 3 (if applicable)
Biogenic CO ₂	N/A	N/A	N/A	N/A



BUREAU VERITAS
Certification



Other greenhouse gases not covered by the Kyoto Protocol (tCO₂e)

GHG	tCO ₂ e emissions
HCFC-22	1,445.646
HCFC – 141b	10.84

Conflict of Interest (COI)

I, Adriano Angelotti, certify that no conflict of interest exists between the Inventory Organization and **BVQI DO BRASIL SOCIEDADE CERTIFICADORA LTDA**, or any of the individual's members of the verification team involved in the verification of the inventory, as defined in chapter 3.2.1 of the Verification Specifications of the Brazilian GHG Protocol Program.

Adriano Angelotti

Adriano Angelotti, Lead Verifier

Date: 05/24/2024

Conclusion

As responsible for the verification activities of the GHG inventory of the inventorying organization, we certify that the information contained in this document is true.

Adriano Angelotti

Adriano Angelotti, Lead Verifier

Date: 05/24/2024

Thiago Comani G. Milagres

Thiago Milagres, Independent Reviewer

Date: 05/24/2024



BUREAU VERITAS
Certification



Revision (if applicable)

Version:	01
Date:	05/24/2024
Justification:	Emission

Bruno Bomtorim Moreira - Technical Manager

Local Office: Piaui Street, 435, Santa Paula - 09541-150.

São Caetano do Sul/SP, Brazil.



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Elaboração

Icare

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CEMIG

Companhia Energética de Minas Gerais

<https://www.cemig.com.br/>

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