



# CEMIG

## Greenhouse Gas Emissions Inventory - 2021

Companhia Energética de Minas Gerais - CEMIG

# Glossary

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Operational control – organizational approach whereby the organization is responsible for all quantified GHG emissions and/or removals from facilities over which it has operational or financial control.

DEFRA – Department for Environment, Food and Rural Affairs

Scope 1 - GHG emissions from sources belonging to the organization or controlled thereby. This category includes emissions due to the burning of fuels for the generation of electrical, thermal or mechanical energy, emissions from chemical processes and fugitive emissions.

Scope 2 - GHG emissions originated from the generation of electrical or thermal energy, imported from the distribution network and used.

Scope 3 - Indirect emissions not associated with imported energy, related to the organization's activities, but arising from sources that belong to or are controlled by other organizations.

GHG - Greenhouse Gases

GWP – Global Warming Potential

Uncertainty - parameter associated with the result of the quantification characterizing the dispersion of values that can reasonably be attributed to the quantified value (ABNT NBR ISO 14.064-2: 2007).

NDC - Nationally Determined Contribution

UNFCCC – United National Framework Convention on Climate Change

Inmetro National Institute of Metrology, Quality and Technology

IPCC – Intergovernmental Panel on Climate Change

CDM - Clean Development Mechanism

MRV - Measurement, Reporting and Verification

Equity interest – organizational approach whereby the organization is responsible for the portion of GHG emissions and/or removals proportional to its equity interest in the respective facilities.

## Executive Summary

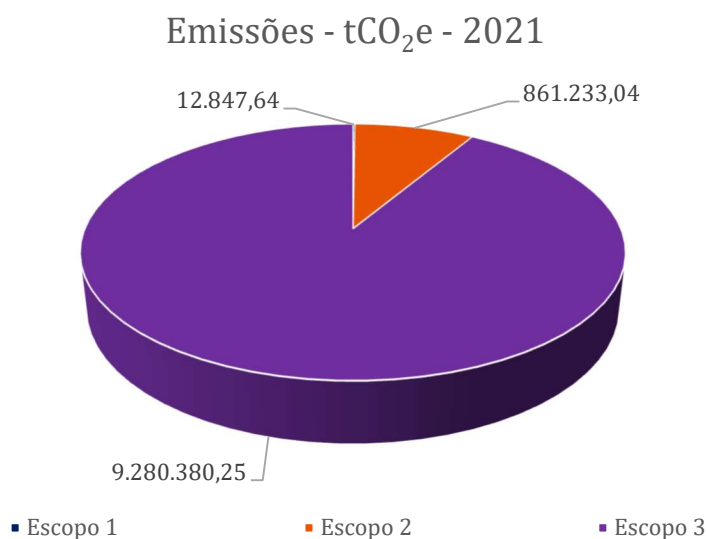
This inventory provides GHG emissions of Companhia Energética de Minas Gerais - CEMIG, CEMIG GT, CEMIG D, CEMIG SIM, GASMIG and CENTROESTE units, from January 1 to December 31, 2021.

CEMIG'S Scope 1, 2 and 3 emissions for 2021 are provided in the table below. Scope 3 showed the highest emissions: **9,280,380.25 tCO<sub>2</sub>e** or **91.39%**, followed by Scope 2 with **861,233.04 tCO<sub>2</sub>e** or **8.48%** and Scope 1 with **12,847.64 tCO<sub>2</sub>e** or **0.13%**.

Scopes	tCO <sub>2</sub> e Emissions	% Emissions on Sum of all Scopes
Scope 1	12,847.64	0.13%
Scope 2	861,233.04	8.48%
Scope 3	9,280,380.25	91.39%
<b>SUM OF ALL EMISSIONS</b>	<b>10,154,460.93</b>	<b>100.00%</b>

Source: Cemig

CEMIG'S emission intensity in terms of tCO<sub>2</sub> (Scopes 1, 2 and 3) /MWh sold was **0.20 tCO<sub>2</sub>/MWh sold**. Separately in terms of tCO<sub>2</sub> (Scopes 1 and 2) /MWh sold, the amount was **0.02 tCO<sub>2</sub>/MWh sold**.

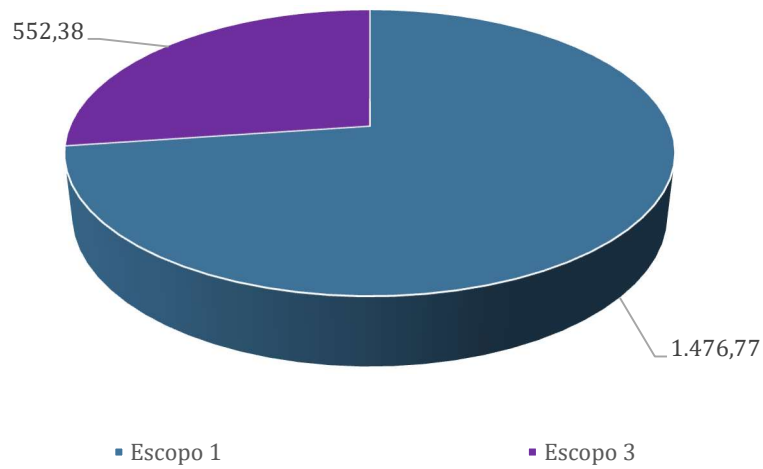


Source: Cemig

Diesel and gasoline sold in Brazil have a component of biodiesel and ethanol, respectively. CO<sub>2</sub> emissions from biodiesel and ethanol (renewables) added to diesel and gasoline, as well as ethanol used as fuel, are reported separately as biogenic CO<sub>2</sub> emissions in the table and graph below. Scope 1 shows the highest emissions: **1,476,77 tCO<sub>2</sub>e renewable (72.78%)**, followed by Scope 3 with **552.38 tCO<sub>2</sub>e renewable (27.22%)**.

Scopes	Biogenic CO <sub>2</sub> Emissions	% Biogenic CO <sub>2</sub> Emissions on sum of all scopes
Scope 1	1,476.77	72.78%
Scope 3	552.38	27.22%
<b>SUM OF ALL EMISSIONS</b>	<b>2,029.15</b>	<b>100.00%</b>

Source: Cemig

Emissões - tCO<sub>2</sub>e - 2021

Source: Cemig

The emission sources provided in scopes 1, 2 and 3 were surveyed. The table below shows the total emissions by scope and the percentage that each category represents as compared to the sum of all emissions. In view of the above, for Scope 1, the category that has the highest representation is Mobile Combustion, with **68.72%** of emissions (**8,956.63 tCO<sub>2</sub>e**). In Scope 2, the most representative category was Distribution System Losses, which accounts for **99.45%** (**856,525.09 tCO<sub>2</sub>e**). For Scope 3, the Goods and Services sold category was the one with the highest percentages of emissions, with **99.96%** (**9,276.221.56 tCO<sub>2</sub>e**).

Scopes	Category	tCO2e Emissions	% Emissions on total scopes
Scope 1	Stationary Combustion	114.27	0.89%
	Mobile Combustion	8,956.83	69.72%
	Fugitive Emissions	3,688.06	28.71%
	Agricultural Activity	46.98	0.37%
	Change and Use of Soil	41.50	0.32%
	<b>Total Scope 1</b>		<b>12,847.64</b>
Scope 2	By Location	4,707.95	0.55%
	Loss of Distribution System	856,525.09	99.45%
	<b>Total Scope 2</b>		<b>861,233.04</b>
Scope 3	Solid Waste	558.17	0.01%
	Home-Work Commute	533.58	0.01%
	Goods and Services Purchased	244.06	0.00%
	Upstream Transport & Distribution	2,726.37	0.03%
	Business Travel	96.52	0.00%
	Goods and Services Purchased	9,276,221.56	99.96%
<b>Total Scope 3</b>		<b>9,280,380.25</b>	<b>100.00%</b>

Source: Cemig



Emissions by scope, operating unit and representativeness thereof are shown in the table below. For Scopes 1 and 2, CEMIG D had the highest emissions, compared to other units: **68.63%**. For Scope, 3, CEMIG GT, CEMIG D and GAMIG units had similar emissions: **35.64%**, **33.40%** and **30.95%**, respectively.

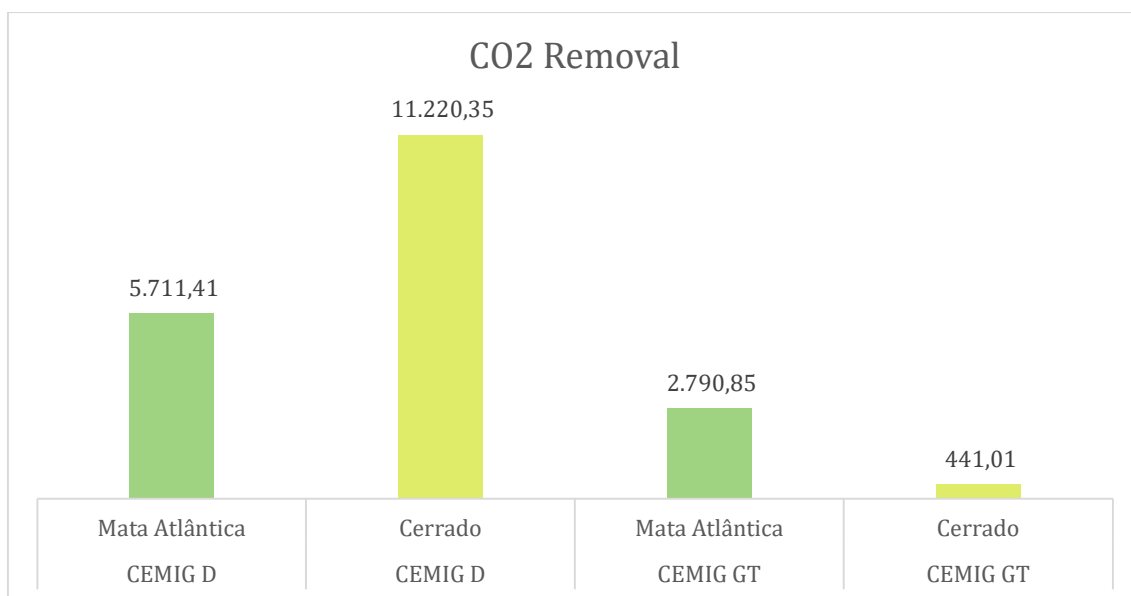
Operating Unit	Scope 1 (tCO2e)	Scope 1 (%)	Scope 2 (tCO2e)	Scope 2 (%)	Scope 3 (tCO2e)	Scope 3 (%)
CEMIG GT	3,917.88	30.49%	12,857.62	1.49%	3,307,820.03	35.64%
CEMIG D	8,817.98	68.63%	847,749.28	98.43%	3,099,967.51	33.40%
CEMIG SIM	7.85	0.06%	0.00	0.00%	0.40	0.00%
GASMIG	62.43	0.49%	30.46	0.00%	2,872,592.31	30.95%
CENTROESTE	41.50	0.32%	595.69	0.07%	0.00	0.00%

Source: Cemig

Regarding the removal of CO<sub>2</sub> by CEMIG in 2021, the numbers are provided in the table and figure below. CEMIG D had the highest CO<sub>2</sub> removals, i.e., **11,220.35 tCO<sub>2</sub>e** or **55,65%** (Cerrado) and **5,711.41 tCO<sub>2</sub>e** or **28.33%** (Mata Atlântica). And CEMIG GT had the following CO<sub>2</sub>e removals: **2,790.85 tCO<sub>2</sub>e** or **13.84%** (Mata Atlântica) and **441.01 tCO<sub>2</sub>e** or **2.19%** (Cerrado).

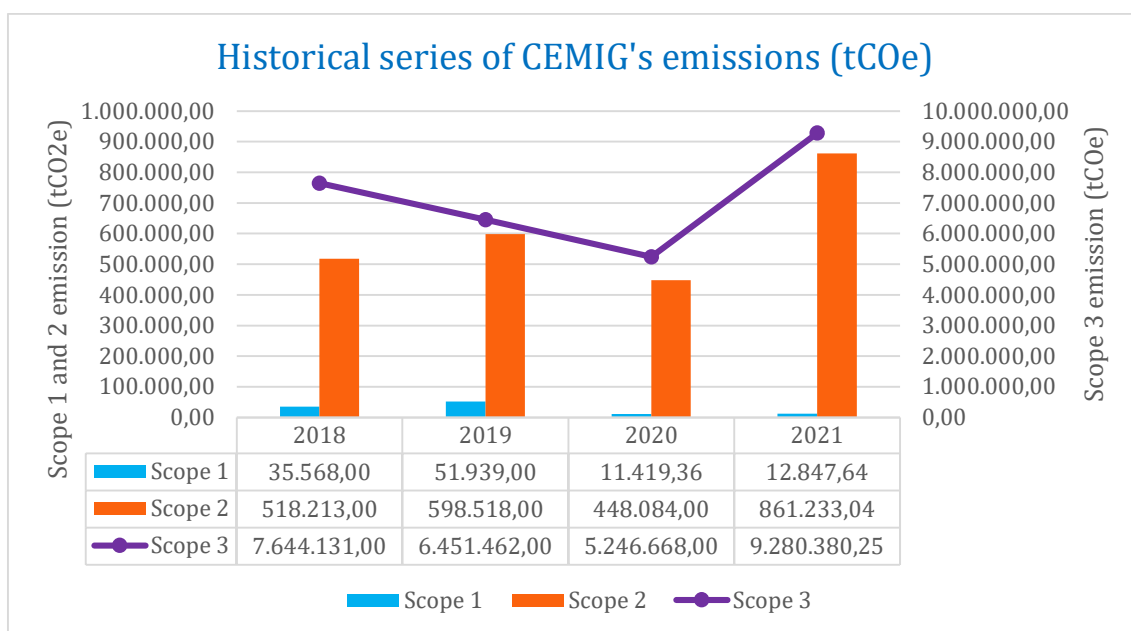
Operating Unit	Biome	Removal (tCO2e)	Representativeness (%)
CEMIG D	Mata Atlântica	5,711.41	28.33%
	Cerrado	11,220.35	55.65%
CEMIG GT	Mata Atlântica	2,790.85	13.84%
	Cerrado	441.01	2.19%

Source: Cemig



Source: Cemig





Source: Cemig

A detailed interpretation of the results can be found in the topic "Comparative Analysis".

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# Introduction

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The greenhouse effect is a natural phenomenon in which the heat reflected by the surface of the planet is retained in the atmosphere, causing an increase in temperatures. This retention is done by GHGs (Greenhouse Gases), to a greater or lesser extent, depending on their concentration.

The greenhouse effect, at a level of natural balance, enables life in the planet, as it reduces temperature variations. In the absence of the effect, fluctuations in temperature between sunny and shady areas would be around hundreds of degrees Celsius, making the environment quite hostile and unfavorable to life forms adapted to our planet's climate.

The appeal on the subject of climate change is the result of a significant increase in GHG emissions by human activity, which has raised the concentration of these gases to unprecedented levels in the history of the Earth, having intensified since the industrial revolution, mainly as a result of the burning of fossil fuels.

The increase in the concentration of GHGs in the atmosphere promotes the phenomenon known as global warming, which unbalances the climate system and makes it difficult to produce forecasts about the need for adaptation.

IPCC reports have shown that the manageable temperature increase threshold is 1.5°C by the end of the century. This limit would allow most living species and current social economic systems to adapt to the changes.

According to the latest United Nations Environment Program (UNEP) Emissions Report, global greenhouse gas emissions need to fall by 7.6% a year between 2020 and 2030.

In order for that to be possible, the ambition of the measures and cuts provided for in the national plans must be five times greater. This means reducing emissions in 45% by 2030, and achieving emission neutrality by 2050 (UNEP).

In the national scenario, according to the NDC (2022), Brazil should reduce its emissions in 37% by 2025 and 50% by 2030, taking 2005 as base year.

In this context, the global concern with this topic becomes even more important in international and national discussions. Studies on pricing, mitigation, adaptation, permit allocation, emission caps and trade certificates are topics that directly impact the economy and have gained momentum as the problem worsens.

Therefore, it is imperative that organizations address the issue in order to prepare their GHG emissions management strategies. For proper decision making, it is critical to have quality information on corporate emissions, with consolidated methodologies and clear results.

The emissions inventory is the activity that gives relevant information for the proper management of emissions and, therefore, has the function of providing clarity and support for organizational decision-making based on the specific context in which it was developed.

The GHG Emissions Inventory includes all gases regulated by the Kyoto Protocol, as follows:

- Carbon dioxide (CO<sub>2</sub>);
- Methane (CH<sub>4</sub>);
- Nitrous oxide (N<sub>2</sub>O);
- Sulfur hexafluoride (SF<sub>6</sub>);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs);
- Nitrogen trifluoride (NF<sub>3</sub>).

## Brazil's Regulatory Environment

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According to the commitments made with the UNFCCC (United National Framework Convention on Climate Change), Brazil must reduce the emissions presented in the NDC (Nationally Determined Contribution). The legal framework on emissions is still being formed, and the following national and state entities and legislation stand out:

## **Interministerial Commission on Global Climate Change and Green Growth – CIMGCCV**

The CIMGC was created on October 25, 2021 pursuant to Decree No. 10,845, and has the purpose of establishing guidelines and articulating and coordinating the implementation of Brazil's public actions and policies relating to climate change.

## **National Policy on Climate Change – Law 12,187/2009**

The National Policy on Climate Change (PNMC), established in December 2009 and regulated by Decree No. 7,390/2010, revoked by Decree No. 9,578/2018, takes the first steps towards regulating climate issues in Brazil. The PNMC aims, among other objectives, to make socioeconomic development compatible with the protection of the climate system, reduce GHG emissions, implement measures to promote adaptation to climate change, expand protected areas and encourage reforestation, and encourage the development of the Brazilian Emissions Reduction Market (MBRE).

## **National Fund on Climate Change - Law 12,114/2009**

Created from Law No. 12,114/2009 and regulated by Decree No. 7,343/2010, the National Climate Change Fund (FNMC) is connected with the Ministry of the Environment and the National Bank for Economic Development (BNDES), aimed at funding support projects or studies and ventures intended for mitigating and adapting to climate change.

## **ABRAVERI**

The Brazilian Association of Companies for Verification and Certification of Greenhouse Gas Emission Inventories and Social/Environmental Reports (ABRAVERI) was founded in June 2013 to operate as an entity aimed at standardizing information on emissions and social/environmental reports, and making disclosures on the environment regulatory framework at municipal, state and federal levels.

## **The organization**

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Companhia Energética de Minas Gerais – CEMIG has been providing energy efficiently and sustainably to several Brazilian municipalities since 1952. With almost 70 years of history, the company operates in the areas of generation, transmission, distribution and sale of electricity and also in the distribution of natural gas.

CEMIG is currently formed by 153 companies, nine consortia and two FIPs (Private Equity Funds), in addition to having assets and businesses in 24 Brazilian states and the Federal District. The company serves 8.7 million consumers in 774 municipalities of the State of Minas Gerais (CEMIG, 2022).

## Organizational and Operational Limits

This inventory provides GHG emissions of Companhia Energética de Minas Gerais - CEMIG, CEMIG GT, CEMIG D, CEMIG SIM, GASMIG and CENTROESTE units, from January 1 to December 31, 2021.

Cemig elected the operational control as a form of organizational control.

### Operational limits:

**Scope 1:** GHG emissions from sources belonging to the organization or controlled thereby. This category includes emissions due to the burning of fuels for the generation of electrical, thermal or mechanical energy, emissions from chemical processes and fugitive emissions. Possible CO<sub>2</sub> emissions from renewable fuels are quantified and reported separately.

**Scope 2:** GHG emissions originated from the generation of electric or thermal energy, from the national interconnected system, used and lost during transport and distribution.

**Scope 3:** Indirect emissions related to the organization's activities, but arising from sources that belong to or are controlled by other organizations.

In order to carry out CEMIG'S inventory, the limits considered were:

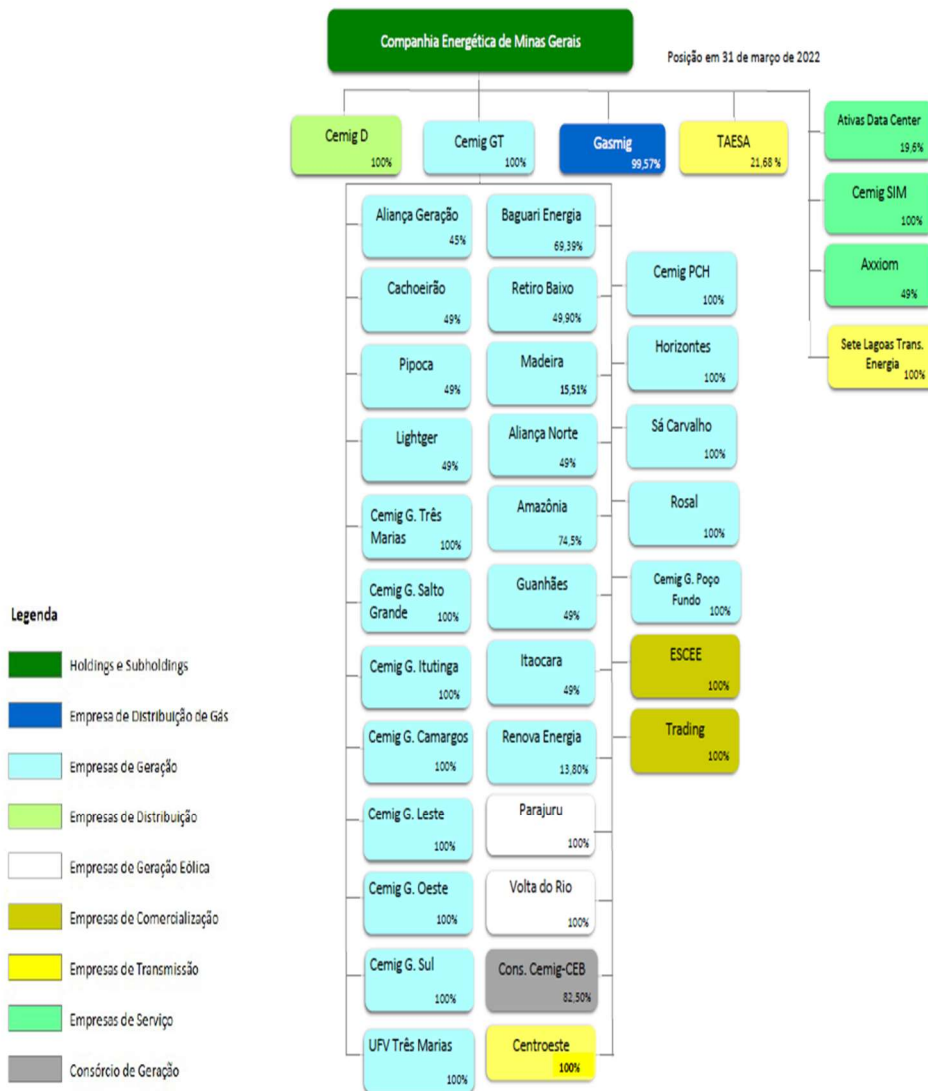
Organizational limit	Operational limit
Operational control	Scopes 1, 2 and 3

**Organizational limit:**

**Operational control:** the organization is responsible for all quantified GHG emissions and/or removals from facilities over which it has operational or financial control.

**Equity interest:** the organization is responsible for the portion of GHG emissions and/or removals proportional to its equity interest in the respective facilities.

CEMIG has interests in 76 hydroelectric plants, six wind farms and one photovoltaic plant, as shown in the organization chart and table below:



Source: Cemig



Operational control and shareholding of each CEMIG company.

Area	Operational units	Operational control	Equity interest (%)
Generation	CEMIG Geração e Transmissão S.A. (CEMIG GT)	Yes	100.00%
	CEMIG Geração Camargos S.A.	Yes	100.00%
	CEMIG Geração Itutinga S.A.	Yes	100.00%
	CEMIG Geração Leste S.A.	Yes	100.00%
	CEMIG Geração Oeste S.A.	Yes	100.00%
	CEMIG Geração Salto Grande S.A.	Yes	100.00%
	CEMIG Geração Sul S.A.	Yes	100.00%
	CEMIG Geração Três Marias S.A.	Yes	100.00%
	CEMIG PCH S.A.	Yes	100.00%
	Horizontes Energia S.A.	Yes	100.00%
	Rosal Energia S.A.	Yes	100.00%
	Sá Carvalho S.A.	Yes	100.00%
	Parajuru S.A.	Yes	100.00%
	Volta do Rio S.A.	Yes	100.00%
	CEMIG Geração e Distribuição S.A. (CEMIG GD)	Yes	100.00%
	CEMIG Geração Poço Fundo S.A.	Yes	100.00%
	Aliança Geração S.A.	No	45.00%
	Aliança Norte S.A.	No	49,00%
	Amazônia S.A.	No	74.50%
	Baguari Energia S.A.	No	69.39%
Generation Consortium	Cachoeirão S.A.	No	49.00%
	Guanhães S.A.	No	49.00%
	Itaocara S.A.	No	49.00%
	Lighter S.A.	No	49.00%
	Madeira S.A.	No	15.51%
	Pipoca S.A.	No	49.00%
	Renova Energia S.A.	No	36.23%
	Retiro Baixo S.A.	No	49.90%
	Consórcio CEMIG - CEB S.A.	No	82.50%
	Distribution	CEMIG Distribuição S.A. (CEMIG D)	Yes
Gas Distribution		GASMIG S.A.	Yes
	TAESA S.A.	No	21.68%
Transmission	Centroeste S.A.	Yes	100.00%
	Sete Lagoas Trans. Energia	Yes	100.00%
	ESCEE S.A.	Yes	100.00%
Sale and Services	Trading S.A.	Yes	100.00%
	CEMIG SIM	Yes	100.00%
	Ativas Data Center S.A.	No	19.60%
Subholding	Axxiom S.A.	No	49.00%
	Light S.A.	No	22.60%

ESCEE S.A. and Trading S.A., even having 100% equity interest, are not under CEMIG'S operational control, and are not included in this inventory. CEMIG Geração Poço Fundo has 100% equity interest. However, it has been contemplated in CEMIG GT. The companies included in this inventory are shown in the Table below.

CEMIG'S operational units considered in the 2021 inventory.

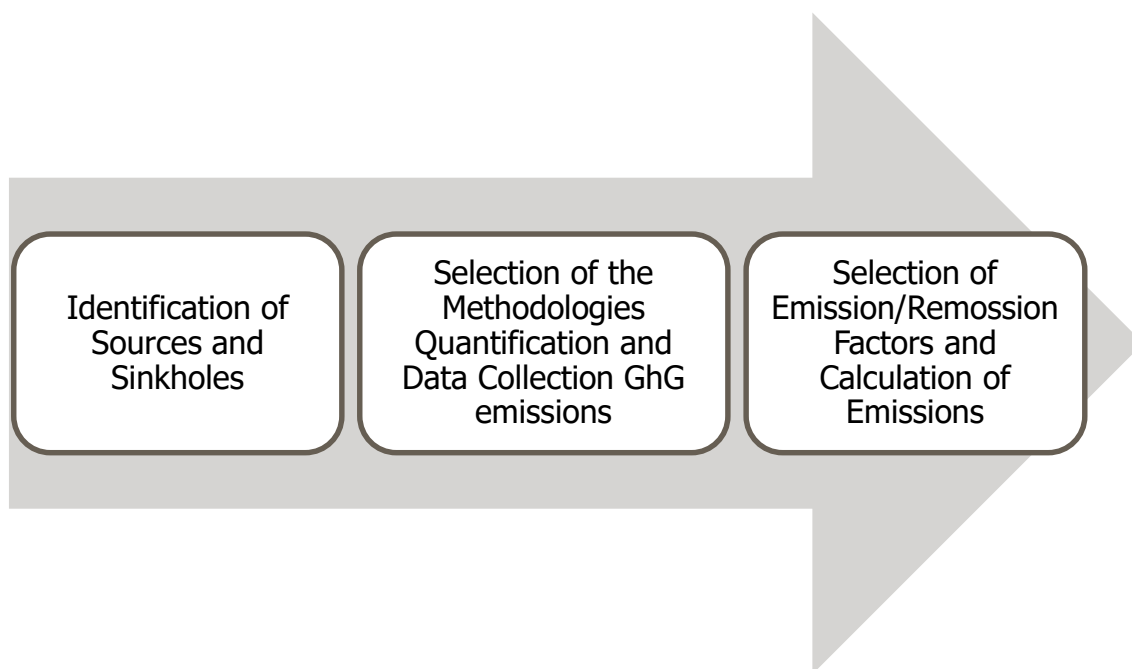
Operational units	Operational control	Equity interest (%)
CEMIG Distribuição S.A. (CEMIG D)	Yes	100.00%
CEMIG Geração e Transmissão S.A. (CEMIG GT)	Yes	100.00%
CEMIG Geração Três Marias S.A.	Yes	100.00%
CEMIG Geração Camargos S.A.	Yes	100.00%
Horizontes Energia S.A.	Yes	100.00%
CEMIG Geração Itutinga S.A.	Yes	100.00%
CEMIG Geração Leste S.A.	Yes	100.00%
CEMIG Geração Oeste S.A.	Yes	100.00%
Parajuru S.A.	Yes	100.00%
CEMIG PCH S.A.	Yes	100.00%
Rosal Energia S.A.	Yes	100.00%
Sá Carvalho S.A.	Yes	100.00%
CEMIG Geração Salto Grande S.A.	Yes	100.00%
CEMIG SIM	Yes	100.00%
CEMIG Geração Sul S.A.	Yes	100.00%
Volta do Rio S.A.	Yes	100.00%
Centroeste S.A.	Yes	100.00%
GASMIG S.A.	Yes	99.57%

Source: Cemig

## Work Flow

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The quantification of GHG emissions was carried out according to the following process:



## Quantification Methodologies

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- Specifications of the Brazilian GHG Protocol Program – Accounting, Quantification and Publication of Corporate Greenhouse Gas Emission Inventories.
- Brazilian GHG Protocol Program Calculation Tool, Version 2022.1.0.
- GVCES Tool.

## Selection of emission factors

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The parameters, emission factors and reference sources used can be found in the calculation tool of the Brazilian GHG Protocol Program.

Due to gaps existing in the tool, it may be necessary to use additional parameters and emission factors. If this occurs, a reference will be included in the calculation section in which they were used.

## Calculating GHG emissions and removals

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The calculation of GHG emissions is made according to the particular aspects of each source considered, such as:

- For burned fuels, published emission factors are used;
- For displacement of solid waste, anaerobic treatment of effluents and emissions due to the use of fertilizers, the IPCC equations will apply;
- For fugitive emissions, the qualification base is the global warming potentials of each gas;
- For air travel, the DEFRA provisions are used.
- For emissions generated by the use of electricity, the emission factor of the national distribution network is used.

Therefore, each source has a specific treatment to quantify its documented emissions.

## Uncertainties

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The process for preparing emissions inventories is subject to variation in data quality due to inherent uncertainties.

The review of these uncertainties allows understanding the existence of significant quantification risks, and is critical to make that the emissions inventory is consistent with the desired materiality levels.

The uncertainty review provides for an assessment of the process and calculation of emissions vis-à-vis the causes of the uncertainties identified by the IPCC, with a potential impact on the quantification of GHG emissions, and is organized to allow an assessment of uncertainties by source of emissions.

- **Lack of Integrity:** It occurs when data is not available, either because the process is not acknowledged, or for lack of measurement methods. Generally, lack of integrity can lead to a tendency towards incomplete concepts, but it can also contribute towards random errors depending on the situation.
- **Model:** It can be merely a simple multiplication factor or, given its degree of complexity, even become a complicated process model. The use of models to estimate GHG emissions and removals can give rise to uncertainties, either as a tendency or random error.
- **Lack of Data:** In some situations, there is simply not sufficient available data required to characterize a particular removal or emission. Usually, in these situations, replacement data from similar categories are used, or interpolation or extrapolation is performed to estimate missing data.
- **Lack of Data Representativeness:** It occurs when the available data fails to fully correspond to the actual GHG emission/removal conditions.
- **Random Statistical Sampling Error:** This source of uncertainty is associated with the fact that it is a random sample of finite size and is generally dependent on the variance of the population from which the sample was taken and on the size of the sample itself.
- **Measurement Uncertainties:** It can be random or systemic; a result of archiving and transmitting information; resolution of finite instruments; inaccuracy of measurement standard values and material references; inaccuracy of values of constants and other parameters obtained from external sources and used in mathematical reduction; approximation and assumption incorporated into the measurement methods and estimation procedures; and/or variations in repeated observations of the emission or removal, or associated variable under apparently identical conditions.

- **Incorrect Presentation or Classification Errors:** Uncertainties are in this case due to wrong, incomplete and confusing definitions of emissions or removals.
- **Lost Data:** When there is an attempt to measure; however, no values are available.

The uncertainties of this emission inventory are associated with data collection and calculation of emission factors.

## Review of Uncertainties

Nature of the uncertainty	Origin of the uncertainty	Review
Emission Factors	Construction of Factors	They are inherent to the emission factors used in the calculation tool and the responsibility of the agents that publish them.
Meters	Scales	The inherent uncertainty is the difference allowed by INMETRO for scales ( $\pm 2\%$ ).
	Fuel Pumps	The inaccuracy at fuel pumps is established by INMETRO ( $\pm 0,5\%$ ).
	Gas Cylinders	The inaccuracy in the exact weight of each cylinder is established by IPEM ( $\pm 2,3\%$ ).
	Fire extinguishers	Recharging must be done only with the nominal charge of the extinguishing agent, with a charge tolerance of 5% or less (INMETRO - Ruling No. 005, dated January 4, 2011).
	Liquid effluent flow meters	The effluent flow is obtained through flow meters with an accuracy of $\pm 1\%$ , and the other characteristics are obtained through specific meters with good accuracy, and they be calibrated from time to time not to lose accuracy.
	Natural gas meters	The accuracy of the devices used for measuring the consumption of natural gas is established at $\pm 1.5\%$ (INMETRO ANP Ruling No. 1, dated June 19, 2000).
	Electricity meters	The accuracy of measurements is subject to control by both the user and government agencies. Therefore, it is expected that, according to these

Nature of the uncertainty	Origin of the uncertainty	Review
		parameters, uncertainties will be greatly reduced - less than 3.5% (ANEEL).
Records	Data collection and transcription	The organization's records are subject to recurring audits, so that any differences can be considered to be reviewed in a timely manner in order to remain accurate and complete for the emissions inventory.

## Quality Management

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### GHG Information Management

CEMIG constantly seeks to ensure that GHG information management is carried out to provide:

- The relevance of the inventory, selecting sources, sinks, GHG reservoirs, as well as data and methodologies appropriate to the needs of the intended user;
- The completeness of the inventory, including relevant GHG emissions and removals, reporting any exclusions and justification thereof;
- Consistency, in order to allow meaningful comparisons of information related to GHGs;
- The precision, in order to mitigate uncertainties and asymmetries according to the principle of reasonableness; and
- Transparency, disclosing sufficient and appropriate information related to GHGs in order to allow the user to make decisions based on quality information.

CEMIG undertakes to keep documentation to support the planning, development and maintenance of the GHG inventory to enable independent verification.



## Selection and establishment of the base year and goals

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The organization shall establish a historical base year for GHG emissions and removals for the purpose of making comparisons, or meeting provisions of the GHG program or other intended uses of the Emissions Inventory.

CEMIG took 2014 as the base year for reporting emissions, as it was a critical period in its emissions resulting from the electricity generation activity. The increase in emissions in 2014 was caused by the startup of the Igarapé thermoelectric plant, which runs on fuel oil.

In relation to the base year used as reference for the company's emission reduction target, the base year of 2017 is considered. For scope 1 emissions, the following criterion was adopted: keep the SF6 emission percentage of up to 0.66%, and reduce 10% of emissions from mobile sources in relation to the 2017 figures. In relation to scope 2 emissions, the following criterion was defined: keep electricity consumption at 41,334 MWh (2017 figures), and set 12.56% of total losses in 2020, 11.28% in 2021 and 11.16 % in 2022.

The projected target for 2021 in scope 1 was 15,935 tCO<sub>2</sub>e, so the actual emissions were 19% below the projected target, due to the deactivation of UTE Igarapé, and a 29% reduction in SF6 emissions compared to the 2017 base year.

The goal regarding the reduction of energy consumption was achieved, there was a reduction of 14% compared to the base year (2017) with consumption from 43,558 MWh to 37,477 MWh in 2021.

The intensity of CEMIG'S direct emissions was 0.00013 tCO<sub>2</sub>e/MWh; the calculation considered direct emissions within the scope of Cemig GT (2,032 tCO<sub>2</sub>e) and net energy generation (15,490,338 MWh). In relation to 2020 (0.00016 tCO<sub>2</sub>e/MWh) intensity was reduced in 25%.

The Distribution Total Loss Index – IPTD in 2021 was 11.27%, representing a reduction of 1.3% in relation to the 2020 figures (12.56%). However, emissions from losses increased due to the 105% increase in the grid factor.

The goal regarding the reduction of energy consumption was achieved, there was a reduction of 14% compared to the base year (2017) with consumption from 43,558 MWh to 37,477 MWh in 2021.

CEMIG joined the Net Zero Ambition initiative in May 2022. The Net Zero Ambition is a global campaign supported by the United Nations that brings together non-state players - including companies, cities, regions and financial, educational and health institutions - to take rigorous, immediate action to halve global emissions by 2030 and reduce greenhouse gas emissions to zero by 2050. For the electricity sector, given its contribution in terms of emissions to various industries, the deadline set by the initiative is 2040. As a requirement for this ambition, CEMIG is preparing an emissions reduction target, setting 2030 as the target year, and 2021 as the base year, to be disclosed in the next inventory.

## Inventory Exclusions

In 2021, there was a change from the provision of services to the maintenance of CO<sub>2</sub> extinguishers. For this reason, in this report, fugitive emission data referring to loss of CO<sub>2</sub> by fire extinguishers were not computed.

Similarly, data on consumption of refrigerant gases outside the metropolitan region of Belo Horizonte were not considered in this inventory. Thus, the current emissions of fugitive emissions of these gases were also not considered.

For 2022, there will be adaptation in the responsible management areas so that the missing emission values be accounted for in the subsequent inventory.

Company Sete Lagoas Transmissão de Energia was purchased by the CEMIG group in 2021, but not included in the inventory.

## Identification of sources and sinks

The quantities used to calculate each of the identified emission sources were provided by the inventory organization

Scope	Category	Source of Emission
<b>Scope 1</b>	Stationary Combustion	Diesel
		Natural Gas
	Mobile Combustion	Diesel
		Gasoline
		Ethanol

Scope	Category	Source of Emission
		Aviation Kerosene
		LPG
		Natural Gas
	Fugitive Emissions	Carbon dioxide
		R-407c
		R-410a
		HFC-134a
		R-22
		Sf6
		Agricultural Activity
	Limestone	
Change and use of soil	Plant removal	
<b>Scope 2</b>	Import of electricity	Grid energy
	Loss of energy of the distribution system	Energy lost in distribution
<b>Scope 3</b>	Solid waste	Waste disposed of in landfill
		Co-processed waste
	Home-work commute	Fuel for employee commute
	Goods and services purchased	LPG
	Transport & distribution (upstream)	Diesel
		Gasoline
		Ethanol
	Business travel	Air travel
	Goods and services sold	Sale of electricity
		Sale of natural gas

Source: Cemig

## Quantification of emissions

The quantities used to calculate GHG emissions for each of the sources considered were obtained or calculated based on the organization's records.

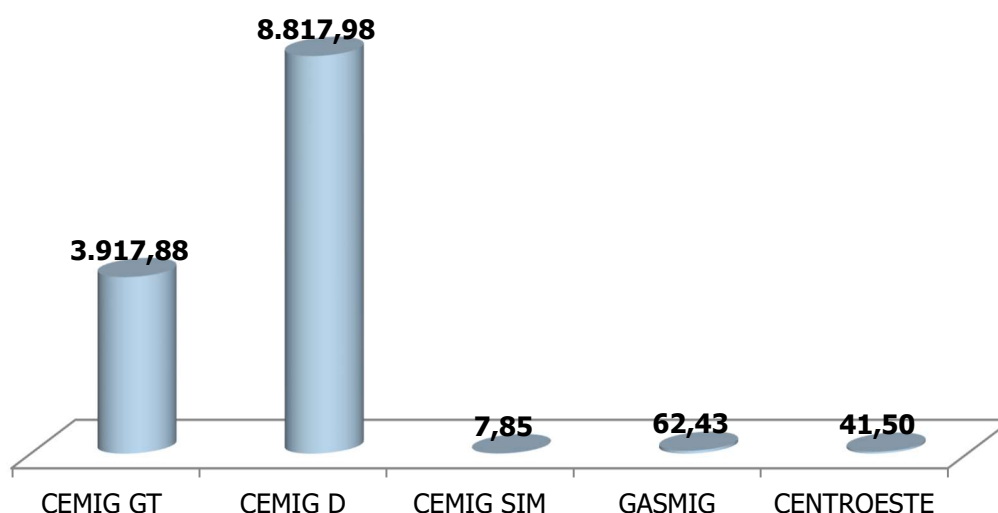
### Scope 1: Direct emissions

To determine direct GHG emissions by type of source, emission factors, equations, parameters and calculations according to the ABNT NBR ISO 14064:2007 standard and the Brazilian GHG Protocol Program were used.

Scope 1 emissions per operating unit are shown in the table and graph below. CEMIG D unit accounts for most emissions **8,817.98 tCO<sub>2</sub>e** or **68.63%**, followed by CEMIG GT **3,917.88 tCO<sub>2</sub>e** or **30.49%**, GASMIG with **62.43 tCO<sub>2</sub>e** or **0.49%**, CENTROESTE with **41.50 tCO<sub>2</sub>e** or **0.32%** and **CEMIG SIM** with **7.85 tCO<sub>2</sub>e** or **0.06%**.

Scope	Operating Unit	Emission (tCO <sub>2</sub> e)	Representativeness (%)
Scope 1	CEMIG GT	3,917.88	30.49%
	CEMIG D	8,817.98	68.63%
	CEMIG SIM	7.85	0.06%
	GASMIG	62.43	0.49%
	CENTROESTE	41.50	0.32%

Source: Cemig

Scope 1 emission 2021 (tCO<sub>2</sub>e)

Source: Cemig

The table below shows the emissions for all generating units managed by CEMIG. CEMIG GT accounts for most emissions among generating units, with **51.87%** of total emissions. The Três Marias, Itutinga, Parajuru, Camargo and Sá Carvalho units had Scope 1 emissions only in the Mobile Combustion category (fleet fuel consumption). In addition, the Leste, Oeste, Rosal Energia and Salto Grande units had emissions associated with Mobile Combustion (fleet fuel consumption) and Agricultural Activity (limestone and fertilizer consumption). Only the Horizonte Energia unit had emissions for Agricultural Activity (limestone and fertilizer consumption), and the Volta do Rio unit had emissions in Mobile Combustion (fleet fuel consumption) and Fugitive Emissions (SF<sub>6</sub> gas). The PCH unit did not have Scope 1 emissions.

Operating Units (Cemig GT)	Emission (tCO <sub>2</sub> e)	Representativeness (%)
CEMIG GT	2,032.34	51.87%
Três Marias	827.70	21.13%
Horizonte Energia	0.01	0.00%
Itutinga	9.11	0.23%
Leste	12.94	0.33%
Oeste	11.48	0.29%
Parajuru	18.87	0.48%
PCH	-	0.00%
Rosal Energia	8.49	0.22%
Camargo	827.70	21.13%

Operating Units (Cemig GT)	Emission (tCO <sub>2</sub> e)	Representativeness (%)
Sá Carvalho	4.05	0.10%
Salto Grande	9,37	0.24%
Sul	17.17	0.44%
Volta do Rio	138.64	3.54%

Source: Cemig

According the table below, it is possible to observe that emissions from Mobile Combustion showed the highest rates with **8,956.83 tCO<sub>2</sub>e**, if compared to other Scope 1 categories, followed by Fugitive Emissions with **3,688.06 tCO<sub>2</sub>e**, Stationary Combustion with **114.27 tCO<sub>2</sub>e**, Agricultural Activity with **46,98 tCO<sub>2</sub>e** and changes and use of soil with emissions of **41.5 tCO<sub>2</sub>e**.

Scope	Category	Emissions (tCO <sub>2</sub> e)	Representativeness
Scope 1	Stationary Combustion	114.27	0.89%
	Mobile Combustion	8,956.83	69.72%
	Fugitive Emissions	3,688.06	28.71%
	Agricultural Activity	46.98	0.37%
	Change and use of soil	41.50	0.32%

Source: Cemig

The table below shows the emissions by driver, and it can be observed that Diesel Oil (**56.77%**) and SF6 (**27.57%**) are the main ones responsible for Scope 1 emissions.

Source of emission	Emission (tCO <sub>2</sub> e)	Representativeness (%)
Natural Gas	9.3	0.07%
Diesel	7,294.18	56.77%
Gasoline	1,586.24	12.35%
Ethanol	2.39	0.02%
Aviation Kerosene	143.32	1.12%
LPG	1.33	0.01%
Natural Gas	34.35	0.27%
Carbon dioxide	-	0.00%
R-407v	15.43	0.12%
R-410a	17.31	0.13%

Source of emission	Emission (tCO <sub>2</sub> e)	Representativeness (%)
HFC-134a	14.3	0.11%
R-22	98.56	0.77%
Sf6	3,542.46	27.57%
Synthetic fertilizer	45.21	0.35%
Limestone	1.77	0.01%
Plant removal	41.5	0.32%

Source: Cemig

## Scope 2: Indirect emissions

To determine indirect GHG emissions resulting from electricity consumption, emission factors, equations, parameters and calculations were used in accordance with the GHG Protocol Tool, Version 2022 1.0.

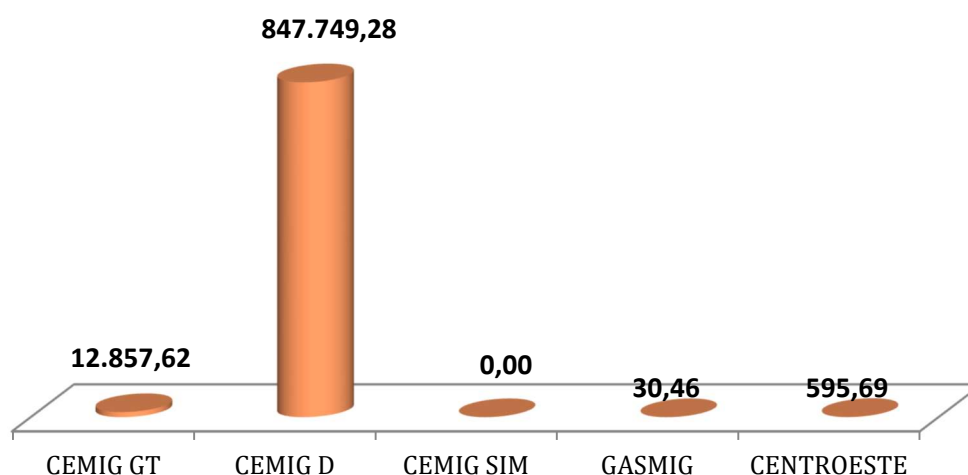
CEMIG'S Scope 2 GHG emissions in 2021 amounted to **861,233.04 tCO<sub>2</sub>e**.

Scope 2 emissions per operating unit are shown in the table and graph below. It is possible to see that CEMIG D, as it is an energy distribution company, has significantly higher emissions than the other units, with **847,749.28 tCO<sub>2</sub>e**, that is, **98.43%** of Scope 2 GHG emissions. CEMIG GT accounted for **1.49%**, amounting to **12,857.62 tCO<sub>2</sub>e** of total Scope 2 emissions, followed by CENTROESTE with **0.07%**, amounting to **595.69 tCO<sub>2</sub>e**.

Scope	Operating Unit	Emission (tCO <sub>2</sub> e)	Representativeness (%)
Scope 2	CEMIG GT	12,857.62	1.49%
	CEMIG D	847,749.28	98.43%
	CEMIG SIM	0.00	0.00%
	GASMIG	30.46	0.00%
	CENTROESTE	595.69	0.07%

Source: Cemig



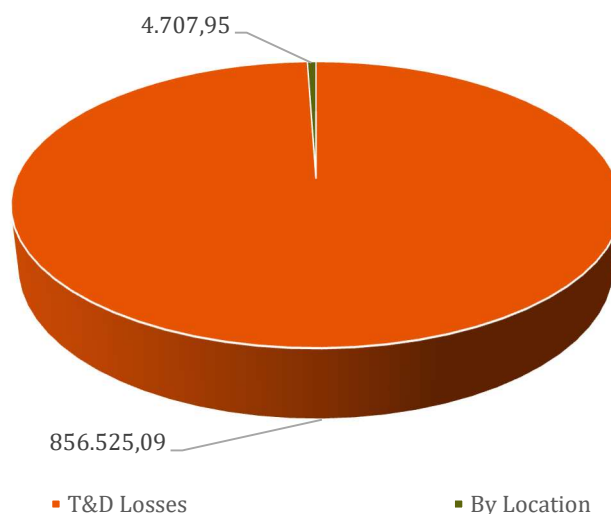
Scope 2 emission - tCO<sub>2</sub>e 2021

Source: Cemig

It is possible to see that CEMIG D, as it is an energy distribution company, has significantly higher emissions than the other units, accounting for **856,525.09 tCO<sub>2</sub>e**, or **99.45%** of Scope 2 GHG emissions. Emissions by site accounted for **0.55%**, amounting to **4,707.95 tCO<sub>2</sub>e** of Scope 2 emissions.

Scope	Category	Emissions (tCO <sub>2</sub> e)	Consumption (MWh)	Representativeness
Scope 2	By Location	4,707.95	37,476.67	0.55%
	Loss of Distribution System	856,525.09	6,734,694.25	99.45%

Source: Cemig

Scope 2 emission - tCO<sub>2</sub>e - 2021

Source: Cemig

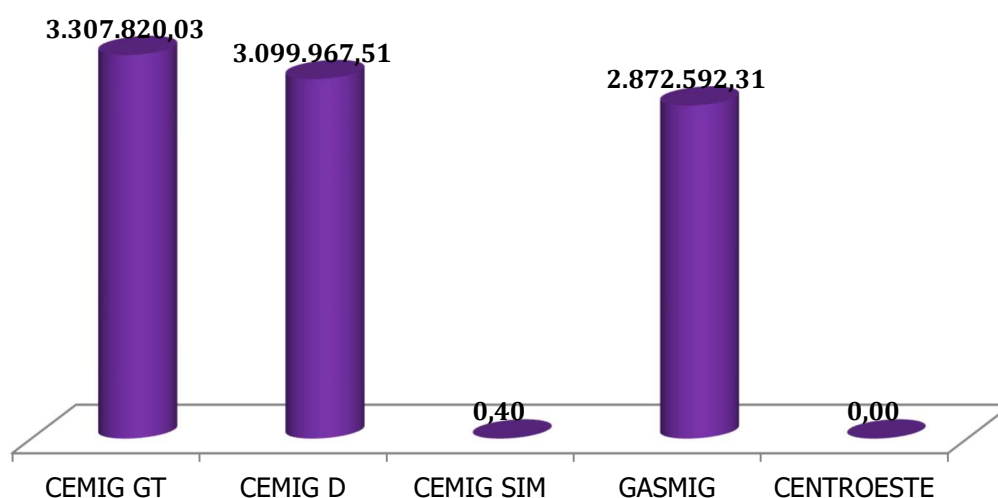
## Scope 3: Other indirect emissions

To determine indirect GHG emissions resulting from type of source, emission factors, equations, parameters and calculations were used in accordance with the GHG Protocol Tool, Version 2022 1.0.

Scope 3 emissions per operating unit are shown in the table and graph below. CEMIG GT has the highest values if compared to other units: **3,307.820.03 tCO<sub>2</sub>e** or **35.64%**, followed by CEMIG D **3,099,967.51 tCO<sub>2</sub>e** or **33.40%**, GASMIG with **2,872,592.31 tCO<sub>2</sub>e** or **30.95%** and CEMIG SIM, accounting for **0.40 tCO<sub>2</sub>e** or **0.00%**.

Scope	Operating Unit	Emission (tCO <sub>2</sub> e)	Representativeness (%)
Scope 3	CEMIG GT	3,307,820.03	35.64%
	CEMIG D	3,099,967.51	33.40%
	CEMIG SIM	0.40	0.00%
	GASMIG	2,872,592.31	30.95%
	CENTROESTE	-	0.00%

Source: Cemig

Scope 3 emission 2021 (tCO<sub>2</sub>e)

Source: Cemig

According to the table below, it is possible to observe that emissions from goods and services sold represented almost all emissions, with **9,276,221.56 tCO<sub>2</sub>e**; if we compare to other categories in Scope 3, this emission arises from the sale of natural gas (GN) and electricity without a renewable energy certificate. Then, we have upstream Transport & Distribution with **2,726.37 tCO<sub>2</sub>e**, Solid Waste with **558.17 tCO<sub>2</sub>e**, Work-Home Commute with **533.58 tCO<sub>2</sub>e**, Goods and Services Purchased, with emissions of **244.06 tCO<sub>2</sub>e** and Business Travel with **96.52 tCO<sub>2</sub>e**.

Scope	Category	Emissions (tCO <sub>2</sub> e)	Representativeness
Scope 3	Solid waste	558.17	0.01%
	Home-work commute	533.58	0.01%
	Goods and services purchased	244.06	0.00%
	Transport & distribution (upstream)	2,726.37	0.03%
	Business travel	96.52	0.00%
	Goods and services sold	9,276.221.56	99.96%

Source: Cemig

The table below shows the emissions by driver, and it can be observed that Electricity (**69.00%**) and Natural Gas (**30.95%**) are the main ones responsible for Scope 1 emissions.

Source of Emission	Emission (tCO <sub>2</sub> e)	Representativeness (%)
Diesel	2,888.47	0.03%
Gasoline	370.60	0.00%
Ethanol	0.88	0.00%
Electricity	6,403,634.86	69.00%
Aviation Kerosene	96.52	0.00%
LPG	244.06	0.00%
Natural Gas	2,872,586.69	30.95%
Solid waste	558.17	0.01%

Source: Cemig

The table below shows the emissions for all generating units managed by CEMIG. CEMIG GT accounts for most emissions among generating units, with **92.68%** of total emissions. The Horizonte Energia, Parajuru and PCH units had Scope 3 CO<sub>2</sub> emissions only in the Goods and Services Sold category (electricity sales). In addition, the Camargo, Itutinga, Leste, Oeste, Salto Grande, Sul and Volta do Rio units had emissions associated with Goods and Services Sold (electricity sales) and solid waste. And the Rosal Energia, Três Marias and Sá Carvalho units had emissions in Home-Work Commute (fuel consumption), Goods and Services Sold (electricity sales) and Solid Waste. The PCH unit did not have Scope 3 emissions.

Operating Units (Cemig GT)	Emission (tCO <sub>2</sub> e)	Representativeness (%)
CEMIG GT	3,065,832.72	92.68%
Três Marias	46,488.96	1.41%
Horizonte Energia	11,101.44	0.34%
Itutinga	8,993.08	0.27%
Leste	5,842.12	0.18%
Oeste	3,567.63	0.11%
Parajuru	9,294.66	0.28%
PCH	14,662.67	0.44%
Rosal Energia	27,873.53	0.84%
Camargo	6,405.07	0.19%
Sá Carvalho	59,877.24	1.81%
Salto Grande	28,206.45	0.85%
Sul	9,073.68	0.27%
Volta do Rio	10,600.78	0.32%

Source: Cemig

CEMIG attributed for 2021 Renewable Energy Certificates (RECs) for part of the energy sold. RECs are intended for demonstrating the renewable origin of the energy sold (hydroelectric, wind, photovoltaic, biomass), allowing to trace and demonstrate the origin of the energy. A REC usually corresponds to 1MWh, and after being sold, it cannot be commercialized to another consumer again.

During this period, two types of RECs were subject to inventory: I-REC, which follows the I-REC Standard methodology, and is drafted by Emborçações HPP, and CEMIG-REC, which follows CEMIG'S internal methodologies, attributed to the Nova Ponte, Irapé and Três Marias HPPs.

Thus, in order to calculate Goods and Services Sold (electricity sales), the total energy sold by CEMIG GT was considered, less the RECs produced (3,101,129.36 RECs or MWh).

*THE TOTAL RESULTS OF GREENHOUSE GAS EMISSIONS IN THIS REPORT PROVIDE ACCURATE VALUES. SOME FIGURES IN THE SUMMARY OF THE GHG PROTOCOL CALCULATION WORKSHEET version 2022 0.1 MAY BE ROUNDED*

## Comparative Review

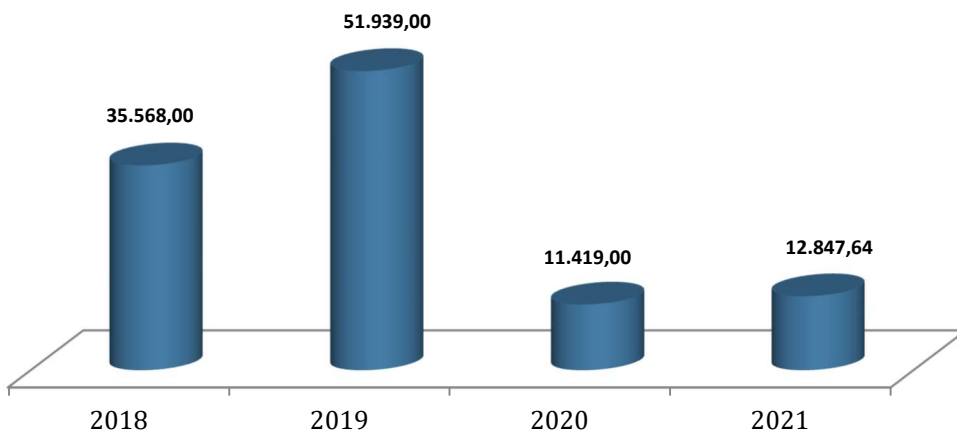
This section shows the behavior of greenhouse gas emissions by parameter/source of CEMIG'S scopes 1, 2 and 3 between the years 2018 and 2021, according to the total consumption reported, and the variations provided in the tables refer to 2020 x 2021.

The comparative review of emissions by scope is provided in the graphs in **tCO<sub>2</sub>e**; relating to the period from 2018 to 2021.

### Scope 1

SCOPE 1						
CATEGORY	Source	2018	2019	2020	2021	Variation
Stationary Combustion	Natural Gas (GN)	11.01	45.04	13.64	9.30	-32%
	Diesel	21,220.24	37,551.87	184.79	104.96	-43%
	Totals	21,434.25	37,582.05	198.43	114.27	-42%
Mobile Combustion	Liquefied Petroleum Gas (LPG)	1.35	0.80	1.35	1.33	-1%
	Diesel	7,186.00	8,026.00	6,834.52	7,189.22	5%
	Hydrated Ethanol	3.56	5.37	3.26	2.39	-27%
	Gasoline	1,323.20	1,294.81	1,022.38	1,586.24	55%
	Aviation Kerosene	326.23	409.17	197.64	143.32	-27%
	Natural Gas (GNV)	74.38	80.70	53.46	34.35	-36%
	Totals	8,920.18	9,068.00	7,927.83	8,956.83	13%
Fugitive Emissions	Carbon Dioxide (CO <sub>2</sub> )	-	-	-	-	-
	R-22	-	-	-	98.56	-
	R-407c	-	-	-	15.43	-
	R-410a	-	-	-	17.31	-
	Sf6	4,975.87	4,958.54	2,953.51	3,542.46	20%
	HFC-134a	-	-	-	14.30	-
	Totals	5,147.38	5,239.42	3,262.22	3,688.06	13%
Agricultural Activity	Limestone	3.15	9.00	1.44	1.77	23%
	Synthetic fertilizers	63.46	40.17	2.73	45.21	1556%
	Totals	66.61	49.17	4.17	46.98	1027%
Change and use of soil	Plant removal	-	-	30.88	41.50	34%
	Totals	-	-	30.88	41.50	34%
TOTALS		35,568.00	51,939.00	11,419.36	12,847.64	13%

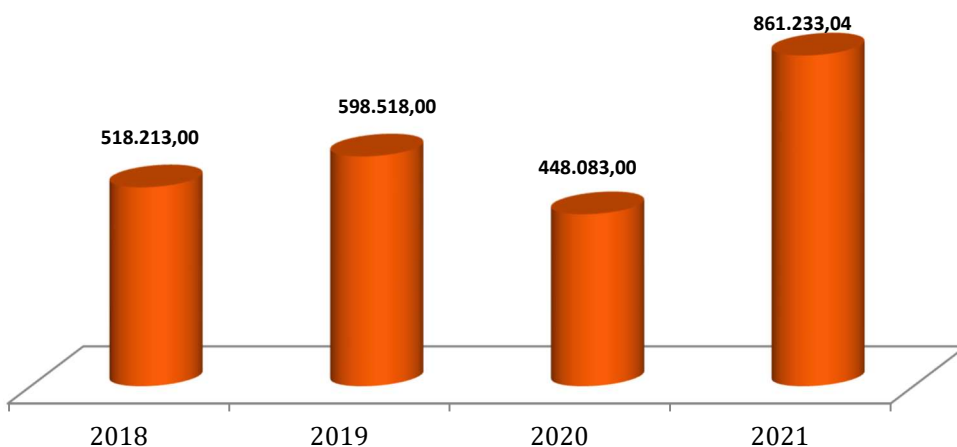
### Scope 1 emission - tCO<sub>2</sub>e 2021



### Scope 2

SCOPE 2						
ENERGY	Source	2018	2019	2020	2021	Variation
Electricity (location)	Energy consumption	3,066.84	3,153.68	2,386.00	4,707.95	97%
T&D Losses (location)	Energy Losses	515,145.95	595,518.28	445,698.00	856,525.09	92%
Totals		518,213.00	598,518.00	448,084.00	861,233.04	92%

### Scope 2 emission - tCO<sub>2</sub>e 2021

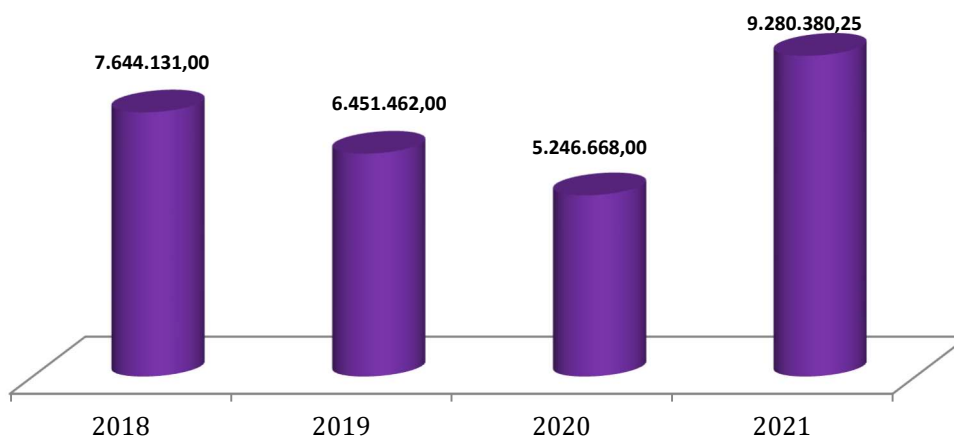


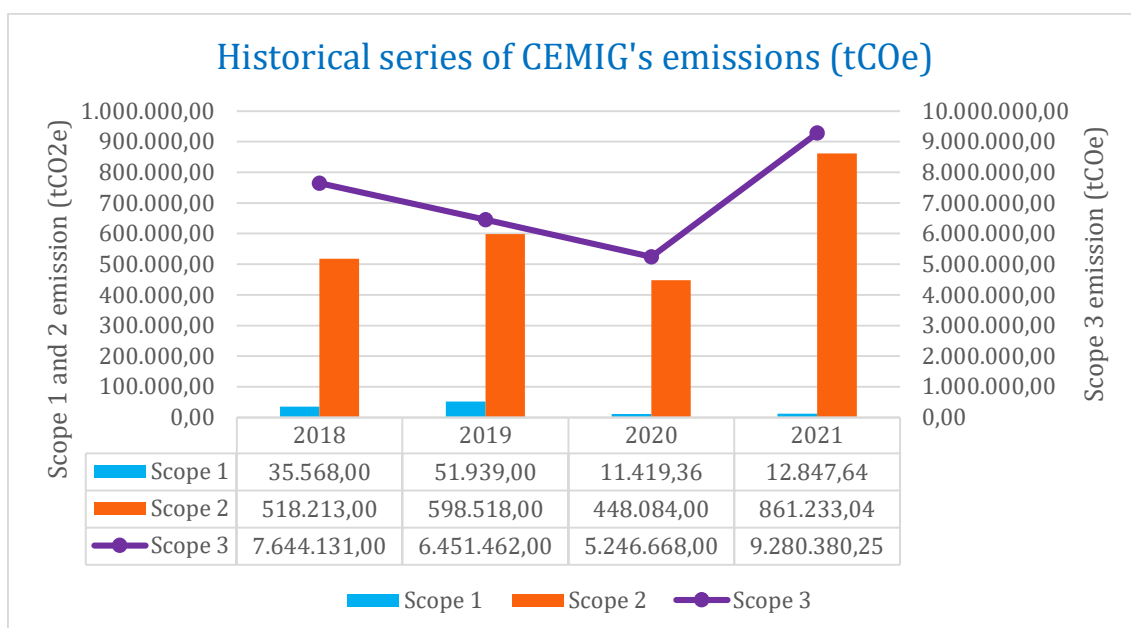


## Scope 3

SCOPE 3	-				
CATEGORY	2018	2019	2020	2021	Variation
Solid waste	338.00	616.00	1,004.00	558.17	-44%
	338.00	616.00	1,004.00	558.17	-44%
Business travel	689.00	428.00	99.00	96.52	-3%
	689.00	428.00	99.00	96.52	-3%
Home-Work commute	112.00	215.00	174.00	533.58	207%
	112.00	215.00	174.00	533.58	207%
Goods and services purchased	71.00	63.00	43.00	244.06	468%
	71.00	63.00	43.00	244.06	468%
Upstream Transport & Distribution	14,373.00	23,491.00	21,798.00	2,726.37	-87%
	14,373.00	23,491.00	21,798.00	2,726.37	-87%
Goods and services sold	7,628,548.00	6,426,649.00	5,223,550.00	9,276,221.56	78%
	7,628,548.00	6,426,649.00	5,223,550.00	9,276,221.56	78%
<b>TOTALS</b>	<b>7,644,131.00</b>	<b>6,451,462.00</b>	<b>5,246,668.00</b>	<b>9,280,380.25</b>	<b>77%</b>

Scope 3 emission - tCO<sub>2</sub>e 2021





In 2021, Scope 1 emissions were reduced by 63.88% compared to 2018. In turn, Scope 2 and 3 had vis-a-vis 2018 an increase of 66.13% and 21.41%, respectively. When compared to the previous year, 2020, there is an increase in Scope 1, 2 and 3 emissions of 13%, 92% and 77%, respectively.

The 13% increase in scope 1 is primarily associated with Land Use and Change, which compared to 2020 had an increase of 34%. The variation in Scope 2 is directly associated with the increase in T&D Losses (increase of approximately 410,827.09 tCO<sub>2</sub>e). The calculation of scope 2 emissions is based on the grid emission factor, which considers all fuels consumed in the generation of distributed energy. The annual average of the electricity emission factor for the years as a comparison was:

#### **Grid emissions factor**

- 2018: 0.0740 tCO<sub>2</sub>e/MWh
- 2019: 0.0750 tCO<sub>2</sub>e/MWh
- 2020: 0.0617 tCO<sub>2</sub>e/MWh
- 2021: 0.1264 tCO<sub>2</sub>e/MWh

The increase or decrease in the emission factor of the distribution network is a consequence of the rainfall regime between the years, implying the balance of energy demand through hydroelectric and thermoelectric plants. Between the years 2020 and 2021 there was an increase of 48.81% in relation to the grid factors.

In turn, the variation in Scope 3 is associated with the Use of Goods and Services Sold (sales of energy and natural gas, with an increase of approximately 4,052,671 tCO<sub>2</sub>e).

Removals (tCO <sub>2</sub> e)						
Unit	Source	2018	2019	2020	2021	Variation
CEMIG D	Mata Atlântica	-	-	10,620.00	5,711.41	-46%
	Cerrado	-	-	5,631.00	11,220.35	99%
	<b>Totals</b>	-	-	<b>16,251.00</b>	<b>16,931.76</b>	<b>4%</b>
CEMIG GT	Mata Atlântica	-	-	6,739.00	2,790.85	-59%
	Cerrado	-	-	2,767.00	441.01	-84%
	<b>Totals</b>	-	-	<b>9,506.00</b>	<b>3,231.86</b>	<b>-66%</b>
<b>TOTALS</b>		-	-	<b>25,757.00</b>	<b>20,163.62</b>	<b>-22%</b>

With regard to removals, in 2021 CEMIG recorded a total of 20,163.62 tCO<sub>2</sub> removed from planting and plant replacement in the Cerrado and Mata Atlântica regions. CEMIG D accounted for 16,931.76 tCO<sub>2</sub> (83.97% of removals), and CEMIG GT for 3,231.86 tCO<sub>2</sub> (16.03%), as presented in the figure above.

## Exhibit 1: Total emissions in tons of gas (tGHG) and tons of CO<sub>2</sub>e

Summary of total emissions in tons of gas (tGEE)

GHG	Scope 1	Scope 2	Scope 3	Totals
CO <sub>2</sub>	8,928.90	861.233,04	9,273,157.67	10,143,319.61
CH <sub>4</sub>	1.23	-	172.42	173.65
N <sub>2</sub> O	0.74	-	9.04	9.78
SF <sub>6</sub>	0.15	-	-	0.15
R-407 C	0.01	-	-	0.01
R-410 A	0.01	-	-	0.01
HFC-134 A	0.01	-	-	0.01
R-22*	0.06	-	-	0.06

\*Non-Kyoto Emissions.

Summary of total emissions in tons of CO<sub>2</sub>-equivalent (tCO<sub>2</sub>e)

GHG	Scope 1	Scope 2	Scope 3	Totals
CO <sub>2</sub>	8,928.90	861.233,04	9,273,157.67	10,143,319.61
CH <sub>4</sub>	34.42	-	4,827.81	4,862.23
N <sub>2</sub> O	197.15	-	2,394.87	2,592.02
SF <sub>6</sub>	3,542.46	-	-	3,542.46
R-407 C	15.43	-	-	15.43
R-410 A	17.31	-	-	17.31
HFC-134 A	14.30	-	-	14.30
R-22*	98.56	-	-	98.56
Totals	12,848.52	861,233.04	9,280,380.35	10,154,461.91

\*Non-Kyoto Emissions.

*THE TOTAL RESULTS OF GREENHOUSE GAS EMISSIONS IN THIS REPORT PROVIDE ACCURATE VALUES. SOME FIGURES IN THE SUMMARY OF THE GHG PROTOCOL CALCULATION WORKSHEET version 2022 0.1 MAY BE ROUNDED*

## Exhibit 2: Verification Statement



### STATEMENT

The Bureau Veritas Certification, established at Av. Angélica, N° 2546, floors 14°, 15° and 16°, Zip Code 01.228-200, Consolação, São Paulo / SP, enrolled in the National Registry of Legal Entities under No. 72.368.012 / 0002-65, declares, for the proper purposes, which is CEMIG – Companhia Energética de Minas Gerais, established at Av. Barbaena, 1200 – floor 17°, Side A1, Belo Horizonte, Minas Gerais, registered in the Cadastro Nacional de Pessoas Jurídicas under the n° 17.155.730/0001-64, in the city of Belo Horizonte, Minas Gerais,, is authorized to publish in all its titles and sites the excerpt of Verification Declaration as drafted "Bureau Veritas Certification, based on the processes and procedures described in its Verification Report, adopting a limited level of confidence, states that the Greenhouse Gas Inventory - Year 2021, of CEMIG – Companhia Energética de Minas Gerais, is accurate, reliable and free from material discrepancy, error or misstatement and is an equitable representation of GHG data for the inventoried period. It was prepared in accordance with NBR ISO 14064:2007 – Part 1 and Part 3: Specification and guidance to organizations to quantify and report on greenhouse gas emissions and removals and with the Specifications of the Brazilian GHG Protocol Program.

Emissions Verified: in tCO<sub>2</sub>e

Kyoto Protocol Gases:

Approach	Scope 1	Scope 2	Scope 3	Total
Operational control	12,749.08	861,233.04	9,280,380.25	10,154,362.37

Biomass Emissions:

Approach	Scope 1	Scope 2	Scope 3	Total
Operational control	1,476.77	-	552.38	2,029.15

Biogenic CO<sub>2</sub> Removals:

Total of Biogenic CO <sub>2</sub> Removals – 2021	20.163,62 tCO <sub>2</sub> e
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These removals have been verified and are being reported, but have not been used to offset emissions.



#### Compensation of GHG Emissions – 2021

In 2021, CEMIG sold 3,101,129 MWh of Renewable Energy Certificates, of which, 1,589,147 MWh from I-REC (International Renewable Energy Certificate, managed by the International REC Standard) and 1,511,982 MWh from CEMIG-REC (Certificate Issued and managed by CEMIG).

It was evidenced that the control of Renewable Energy Certificates marketed by CEMIG is adequate and reliable, demonstrating the traceability of the renewable energy generating source, and are being considered as offset emissions in the Inventory of Greenhouse Gas Emissions of CEMIG, base year 2021, allowing the reduction of emissions from the commercialization of electrical energy.

With the use of Renewable Energy Certificates, it was possible to offset the emissions of 392,034.44 tCO<sub>2</sub>e.

São Paulo, April 25, 2022.

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Bruno Bomtorim Moreira  
Certification Technical Manager

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Antonio Daraya  
Lead Verifier

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## Green Domus Desenvolvimento Sustentável Ltda



**Av. Eng. Luís Carlos Berrini, 936 – Conj. 81**

**Brooklin Novo - São Paulo – SP**

**Telephone: +55 (11) 5093-4854**

**Fax.: +55 (11) 5093-1417**

**[contato@greendomus.com.br](mailto:contato@greendomus.com.br)**