Welcome to your CDP Climate Change Questionnaire 2021

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Founded in 1952 by the then governor of Minas Gerais, Juscelino Kubitschek de Oliveira, Companhia Energética de Minas Gerais (Cemig) operates in the areas of generation, transmission, sale and distribution of electricity, energy solutions (Cemig SIM) and distribution of natural gas (Gasmig). The group consists of the holding company Companhia Energética de Minas Gerais (Cemig), the wholly-owned subsidiaries Cemig Geração e Transmissão S.A. (Cemig GT) and Cemig Distribuição S.A. (Cemig D), totaling 185 Companies, 14 Consortia and two FIPs (Private Equity Interest Fund), resulting in presence in 25 Brazilian states and the Federal District. From its inception, the organization has endeavored to innovatively and sustainably bring welfare to the regions it operates in. This decision helped make it the largest energy distributor in terms of power lines and networks, and one of the largest energy generation and transmission organizations in Brazil. In addition to generation, transmission and distribution of power, Cemig also operates in the natural gas trade and distribution segment by means of Gasmig, which is the exclusive distributor of piped natural gas throughout the state of Minas Gerais. Also Cemig holds a 22.60% interest in the capital of Light S.A., in which it participates in the control block, and also holds a 21.68% interest in the capital stock of Transmissora Aliança de Energia Elétrica S.A., Taesa, thus granting it control of the company.

Cemig is a publicly traded company controlled by the Government of the State of Minas Gerais (51%), with its shares traded in São Paulo, in B3 S.A. (Brazil Bolsa Balcão), in the New York Stock Exchange (NYSE), and in Madrid, in the Latin American Securities Market (Latibex). The Company's consolidated net operating revenue was R$ 25.23 billion in 2020, according to a mainly renewable-energy-source-based matrix. Cemig's power generation complex installed capacity is 6,054 MW, 98.07% of which come from hydraulic generation plants, 1.90% from wind generation, and 0.02% from solar generation. It is important to stress that, by late 2019, UTE Igarapé, the Company's only thermoelectric plant, was shut down, making Cemig's generation complex 100% renewable. The organization has nearly 4,927 km of transmission lines. In the area of electricity distribution, it is responsible for the management of the largest power distribution network in Latin America, over 545 thousand km in length. At the end of 2020, Cemig had 5254 employees.

Thanks to its commitment to socio-environmental responsibility principles, its economic-financial strength, and technical excellence, the organization is internationally acknowledged as a benchmark in sustainability in its industry, and is positioned as one of the major vectors of consolidation in the Brazilian electricity sector. Cemig has been included in the Dow Jones Sustainability Index (DJSI World) for 21 years, and is the only company in the electricity industry in the Americas to be included in that list. It is also in the B3 Corporate Sustainability Index (ISE) for the 16th consecutive year, and was selected for the 11th time to be included in the Carbon Efficient Index (ICO2) created in 2010 by B3 and BNDES.

In 2020, Cemig was listed among the leading companies in climate change and water security management in Latin America, under the Climate Change and Water Security Programs, thanks to the quality of the information disclosed to investors and the global market. Recognition was granted by CDP Latin America. This is the ninth consecutive year that CDP has awarded the Company. The selection took into account the level of detail in the responses regarding criteria such as risk management, commitment to mitigations, and initiatives to reduce greenhouse gas emissions. The best results point to a high level of transparency in the disclosure of information related to the topic, providing investors with consistent content on climate change management and water security.

Mission: To provide clean and accessible energy integrated solutions to society in an innovative, sustainable and competitive way.

Vision: To be among the three best integrated electric power groups in Brazil regarding governance, financial health, asset performance and customer satisfaction.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years
Reporting year	January 1, 2020	December 31, 2020	No

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Brazil

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

BRL

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C-EU0.7

(C-EU0.7) Which part of the electric utilities value chain does your organization operate in? Select all that apply.

Row 1

Electric utilities value chain

Electricity generation
Transmission
Distribution

Other divisions

Gas storage, transmission and distribution

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Other C-Suite Officer	The person who is at the highest level of direct responsibility for the climate change matter at Cemig is the Business Communication and Sustainability Deputy Director, who reports directly to Cemig's CEO, the CEO being the highest level of the Executive Board, who, in turn, reports directly to the Board of Directors. Cemig's Administration is comprised by the Board of Directors and the Executive Board. Members of the Board of Directors, chosen by the General Shareholders' Meeting, appoint their Chief Executive Officer, the Deputy Director, and the Executive Board. The Executive Board, the body the Communication and

	Sustainability Deputy Director is assigned to, is considered a group belonging to the Company's management. The job duties of the Communication and Sustainability Deputy Director, defined and approved by the Board of Directors, are to collaborate with the Chief Executive Officer in exercising his duties and replacing him in cases of absence, leave, vacancy, impediment or resignation. The current Business Communication and Sustainability Deputy Director took over the position at Cemig in June 2020, having previously worked for the Minas Gerais government in the field of Communication. His various duties include, for example, approving technical norms and normative instructions necessary for the development of corporate sustainability, climate change, and social responsibility, in line with strategic drivers and sectoral regulation. In 2019 the Deputy Director approved Cemig's Strategy to Face Climate Change, which consists of: Identify risks and opportunities; promote new businesses and technologies; create a clean energy seal; carry out R&D together with identifying places in Cemig's concession area subject to extreme events; position Cemig SIM as a low carbon service and product branch; manage carbon credits; have a clear indicator of the energy matrix with a defined minimum percentage of renewable energy generation sources; efficiently manage GHG emissions; develop the SBTi goal; participate in Committees and Work Groups related to the subject; improve the engagement of both the external and internal public; and maintain participation in the main sustainability indexes.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding annual budgets	Review and guiding of the strategy and business plans: In drafting its strategy, Cemig considers the principles in the "Commitment to Climate Change", document which contains the guidelines for the Company's performance regarding this matter. In 2019, the Company developed its Sustainability Plan, which aims, among other objectives, at aligning the sustainability efforts in the Strategic Planning. The most relevant topics were broken down into sub-topics that

	Reviewing and guiding business plans Setting performance objectives Overseeing major capital expenditures, acquisitions and divestitures	make up the Materiality Matrix. Approximately 50 indicators are being defined for monitoring, measurement and analysis of the results of the Sustainability Plan. Their performance will be assessed at the end of each year against the previous year. This way, Cemig is moving forward with its strategic guidelines, aiming at achieving a high place in domestic and international sustainability rankings, which include a leadership position in climate-related issues. During 2020, the Company reviewed the new strategic planning, prioritizing the generation, transmission and distribution businesses with a view at achieving leadership in customer satisfaction, safety and efficiency. In January 2021, Cemig's Board of Directors approved the review of the Company's strategic planning for the 2021-2030 cycle. Cemig's Business Sustainability Committee aims at proposing policies, guidelines, actions, plans and projects, in addition to strategic initiatives, to foster performance in the social, environmental, economic and corporate governance aspects. All topics discussed are considered by Senior Management, including issues related to climate change. Review and guidance of major action plans : As a result of the strategy, the actions that require approval or performance by the Board are discussed in meetings, always following the guidelines in the “Commitment to Climate Change” document, in order to achieve the objectives and targets related to climate change. Review and guidance of annual budgets: The Board considers the budgetary needs for execution of action plans that guarantee effective implementation of the strategy regarding climate change - objectives, goals and programs - and monitors them periodically. Definition of performance objectives: The Company has indicators for business monitoring and evaluation, such as DEC (Interruption Equivalent Duration per Consumer Unit) and FEC (Interruption Equivalent Frequency per Consumer Unit), that provide measurable data on interruptions of energy supply. These indicators are used by Cemig D to evaluate the

		quality of service and, in the case of Cemig Generation, are related to climate, since the physical structure and the hydroelectric power generation capacity are exposed to climatic risks. Major capital expenditure, acquisition and disposal supervision: The Board of Directors is responsible for approving the Annual Budgets and deciding - on a proposal by the Executive Board - on investment projects, disposal of assets, and other matters.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Other C-Suite Officer, please specify Deputy Director of Business Communication and Sustainability	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Sustainability committee	Assessing climate-related risks and opportunities	More frequently than quarterly
Environment/ Sustainability manager	Assessing climate-related risks and opportunities	More frequently than quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The Business Communication and Sustainability Deputy Director heads the Business Communication and Sustainability Sector and the Sustainability Department, the area that manages the Climate Change theme and the Sustainability Plan at the Company. The Deputy Director gives guidelines and validates actions on this topic. The Deputy Director answers directly to the company CEO, that being the highest level of the Executive Board that, in turn, reports directly to the Board of Directors. This provision grants the required autonomy to the area in charge of managing the theme when carrying out Cemig's guidelines and interacting with the other areas of the company that contribute to this theme management.

In the Corporate Communication and Sustainability Department, the Corporate Sustainability Management has the main responsibilities and duties associated with issues related to weather. Examples:
· Follow up and monitor institutional and business changes related to corporate sustainability, climate change, and social responsibility and, if necessary, propose changes to the Company's guidelines, drivers, indicators, goals, and strategic initiatives;
· Assist in proposing and approving technical standards and regulatory instructions necessary for the development of corporate sustainability, climate change, and social responsibility, in line with strategic drivers and sectoral regulation;
· Analyse and prospect trends, risks, and opportunities in the area of climate adaptation and mitigation, through research and studies of the best national and international practices, as well as conduct and enable studies on the assessment of climate risks in Company activities;
· Act in the development and structuring of corporate policies, guidelines and procedures related to climate adaptation and mitigation, together with related areas and in line with the Company's guidelines, drivers, indicators, goals, and initiatives;
· Provide inputs to strategic planning in relation to climate change and propose guidelines on the theme, as well as follow the global and local discussion on issues related to the theme such as regulatory frameworks, formal and voluntary emission market, carbon pricing, taxation, etc.;
· Perform quantification of Cemig's GHG emissions and projects developed by the Company (energy efficiency, fuel/energy substitution, carbon reduction projects, energy losses in transmission and distribution, and others), in order to comply with legislation and corporate sustainability requirements, in addition to providing information on emissions from energy purchased by medium- and large-sized customers.

The Sustainability Management surveys and evaluates Cemig's risks and opportunities in the face of climate change, as well as their respective monitoring, always acting jointly with the Corporate Risk Management and other related areas (Energy Efficiency Management, Department of Management and Control of Measurement and Commercial Losses from Distribution, Management of Energy Planning and Water Resources) in all phases of the process, via the integrated approach that guides Cemig's risk management.

The Company has a decentralized process for monitoring issues related to climate change, each project/area having its own practices/routines. The Sustainability Plan completed in 2019 presents 50 indicators of climate strategy that will enable better management of the company's performance on this theme, with an assessment at the end of each year. The monitoring of meteorological indicators is an example of control, with a weekly analysis of weather forecasts and measurement of possible impacts on operations. From that, it is possible to mobilize repair teams in the electrical system and respond more quickly to system occurrences, reducing power outage time.

In 2019, Cemig formalized the creation of its Corporate Sustainability Committee, aimed at consolidating the integration of corporate sustainability in the management process, proposing policies, guidelines, actions, plans, and projects, in addition to strategic initiatives focused on its contribution to sustainable development. The Committee is made up of representatives of all the boards in the company and their respective alternates, who have to monitor and anticipate market trends and practices related to corporate sustainability, as well as themes associated

with climate change, proposing actions and initiatives to leverage opportunities or reduce exposure risks and relevant impacts on the Company. The Committee is advisory in nature, but because it is linked to the Company's main executive boards, it has great influence on decision-making within Cemig.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	Cemig encourages management of climate-related issues through goals and results reflected in monetary rewards tied up to the variable remuneration (PLR) of employees. In 2020, Cemig took into account the following quality indicators: DEC (Interruption Equivalent Duration per Consumer Unit), tied up to variable remuneration (PLR) of all employees, and also FEC (Interruption Equivalent Frequency per Consumer Unit). It also considered the EIMRGF, an index that measures the amount of Energy Impacted by the Physical Guarantee Reduction Mechanism (often not generated due to variations in the climate regime in watersheds), also associated with variable remuneration (PLR) of employees. Another indicator is ISUSTENT, which measures Cemig's participation in the major Sustainability Ratings in Brazil and the World, with an impact on the variable remuneration (PLR) of the Sustainability Management (DCS/SE). By 2021, PLR will begin considering corporate (25%) and specific (75%) indicators.

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity inventivized	Comment
Corporate executive team	Monetary reward	Efficiency target	Indicator: quality of electricity supply. The DEC indicator (Interruption Equivalent Duration per Consumer Unit) is a tool that contributes to the assessment of the effectiveness of actions and initiatives to meet the standards required by the regulatory body and expected by customers. Given that most interruptions in the power supply are caused by trees, windstorms, and

			lightning, which can damage the facilities that convey and distribute energy, many DEC indicator control initiatives are directly related to climate change. Concerning the remediation of impacts caused by trees, the Company is getting ready for more severe weather events, when the degree of risk posed by vegetation is high. These indicators are linked to the variable remuneration of all the Company's employees. Indicator: Amount of Energy Impacted by the Guaranteed Power Output Reduction Mechanism. In Brazil, energy ensured by the National Interconnected System (SIN) is the benchmark for the domestic supply. For this, the Ministry of Mines and Energy (MME) grants each plant a certificate corresponding to the maximum amount of energy it can sell, called Guaranteed Power Output. The EIMRGF indicator tracks the total amount of energy impacted by the Physical Guarantee Reduction Mechanism, and its results reflect the operational availability of hydroelectric plants in an accumulated period of 60 months, compared to the benchmark value certified by MME. Given that Cemig's generating complex is mainly made up of hydroelectric plants, climate change can directly impact the availability and reliability of reservoirs due to extreme events that alter precipitation patterns, extending drought periods. That indicator is linked to the variable remuneration of all the Company's employees.
All employees	Monetary reward	Efficiency target	Indicator: quality of electricity supply. The DEC indicator (Interruption Equivalent Duration per Consumer Unit) is a tool that contributes to the assessment of the effectiveness of actions and initiatives to meet the standards required by the regulatory body and expected by customers. Given that most interruptions in the power supply are caused by trees, windstorms, and

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All employees	Non-monetary reward	Efficiency project	Devised in 2018, the Movimenta Program is an ongoing program to encourage the culture of innovation by the registering of projects with the potential to create value for Cemig, proposed by the Company's employees themselves. Its goal is to stimulate participation of employees in a search for solutions aimed, among other things, at improving corporate sustainability levels,

			without prejudice to returns from economic and financial aspects. The third edition of the program was not launched in 2020 due to the social distancing caused by the Covid-19 pandemic and the prioritization of resources and projects defined by the Company. With adapted remote work tools in place, the Company is preparing a new program format to receive new initiatives from 2021 onwards. It is important to stress that the projects approved in the second edition of 2019 were implemented during 2020, with the proper determination of the benefit for the Company. There was also an award for those whose effects were noticed by the Company. Among the 2019 projects approved, a software package that automates feasibility studies of distributed mini-generation connections in the Company network stands out. This way, the company is contributing to the diversification of the energy matrix and the increase of renewable energy by allowing for large-scale DG connections. The project in question saved over R$ 80 thousand in expenses, and there was an increase in productivity of more than 1,500% when carrying out the feasibility studies. In 2017, Cemig held the Ideia Iluminada Contest, which aimed at fostering solutions geared at reducing fuel consumption, raising efficiency in energy and water consumption, and reducing the production of waste. Of the 44 projects submitted by Cemig employees, four were selected and the first to be deployed was a system for using rainwater for consumption in the Company's main building in Vila Mariana neighbourhood, in the city of Governador Valadares. The project was started in December 2018, and its results were disclosed in a company internal publication, as a way of acknowledging the work carried out.

Other, please specify Superintendence of strategy planning and management team	Non-monetary reward	Other (please specify) Performance in Sustainability index	Annually, after the release of the new Dow Jones Sustainability Index portfolio, the Sustainability Management team is presented with a celebratory lunch. This lunch is provided as a way of rewarding Cemig remaining in the index, thus reaffirming the Company's leadership position in the themes that drive sustainable development, among which climate change is extremely relevant for the Company. Due to the Covid-19 pandemic, the celebration was cancelled in 2020, but it is expected to be held again when on-site work is resumed.
All employees	Monetary reward	Efficiency project	Every year, Cemig carries out the Energy Efficiency Program – PEE, whose projects allow for a reduction of energy consumption via educational actions and the replacement of inefficient equipment, upgrading of public schools lighting, and installation of solar heating and photovoltaic energy generation systems. PEE projects completed in 2020 enabled energy savings of 82,386 MWh/year and avoidance of over 7 thousand tons of CO2 emissions, Every year, CEMIG reviews its indicators, such as the PEE Financial Realization Index that, as of 2021, will become part of the variable remuneration of employees.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	1	This timeframe is in line with the annual review frequency of the Company's Long-Term Strategy, the Multi-Annual Business Plan and the Annual Budget. Annually, management and committee members must also undergo a performance assessment for the exposure of the management acts practiced, contribution to the results of the fiscal year, achievement of the objectives laid down in the Multi-Annual Business Plan, and compliance with the Long-Term Strategy Deadline and Annual Budget.
Medium-term	1	7	This timeframe is in line with the period covered by the Company's Multiannual Business Plan, which reflects the assumptions of the Long-Term Strategy and contains the goals for at least 5 years, including the Annual Budget. Among other items, the Plan details: (i) the Company's strategies; (ii) new investments and business opportunities; (iii) amounts to be invested; and (iv) return rates and profits to be obtained or generated by the Company.
Long-term	7	21	This timeframe is in line with the period covered by the Company's Long-Term Strategy (2019-2040). The Long-Term Strategy includes the Company's strategic foundations (mission, vision and values), as well as long-term strategic guidelines.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

Cemig defines strategic risks as those related to the Company's objectives and vision, or to strategic decisions that risk not achieving the planned success. These risks are classified based on the financial impact should they materialize, using the loss of net revenue as the measurement metric. Risks with considerable financial impact are those that can cause a significant adverse effect on the business, affecting the financial condition and the results of operations. Cemig assesses the financial impact of all its strategic risks prioritized by the Board of Directors, the so-called Top Risks (therefore, all Top Risks can be considered as substantive impacts on Cemig's businesses). Financial impacts of risks can be classified in 6 levels. These levels range from very low (requires interventions within the company's governance and the board deliberation level) to catastrophic (the company will have difficulty recovering within 5 years, the impact is very comprehensive, and is irreversible). In that assessment, the financial impacts range from R$ 0-15 million (first impact range) to over R$ 1 billion (final impact range) and, thus, the financial impact of each risk is estimated. That indicator goes for the entire Company. Besides the financial impact, the Top Risk identification and review process assesses the possible impacts of each risk on the aspects of image and reputation, environmental and compliance. These aspects were defined with the support of the areas related to the matter and validated by the Corporate Risk Follow-Up Committee, which represents Cemig's boards.

Cemig rates its risks and opportunities in scales according to their financial impacts, intangible impacts, probability of occurrence, and relevance for the Company, with percentage estimates distributed along the ranges. Risks are prioritized based on that classification, resulting in a matrix of exposure to risks/opportunities. Besides that, the “financial impacts” variable used to define the risk/opportunity position in the exposure matrix is updated with information after the control and adopted measures. Considering this, the system calculates the inherent risk/opportunity (that is, without management actions), cost/return, the residual risk/opportunity (after controls are implemented), and the planned residual risk/opportunity (after measures are implemented). This allows for prioritizing of decision-making based in a solid financial analysis of scenarios with and without risk/opportunity management. Currently, this analysis covers only the company’s direct operations.

A new emerging Top Risk identified in 2020 refers to the “Inefficiency of measures to minimize and adapt to the impacts of climate change at Cemig”. That risk refers to the inadequacy of mitigation and adaptation measures to climate change in the long run, resulting from non-implementation or inefficiency of the measures necessary to minimize the impacts resulting from extreme weather events. The major potential impacts identified include damages to the power generation, transmission and distribution infrastructure, as well as loss of revenue and market due to new low carbon solutions implemented by competitors. Based on the identification of this Top Risk, Cemig laid down a series of mitigation actions, such as putting together and executing the Distributor Utility Development Plan (*PDD*), which anticipates several actions geared to infrastructure, and investment in the Research and Development (R&D) Program, with incentive to new low carbon projects.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

Annually

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

Corporate risk management enriches the management dialogue by adding perspectives to a strategy's strengths and weaknesses in the event of a change of context, in addition to assessing the strategy's alignment with the organization's mission and vision.

Risk management planning takes into account factors that may pose risks to the health and safety of employees, suppliers, customers, the general population and the environment. Eventually, opportunities are identified and developed according to the Company's objectives and business plans, especially regarding process efficiency. The risks inherent to Cemig's business activities are assessed by their probability of occurrence and by their impact on the various businesses in the value chain.

Based on the guidelines laid down in its Risk Management Policy, Cemig has put together a risk management program that allows mapping and assessment of both strategic risks and those arising from operational processes. This program is coordinated by the Risk Management and Internal Controls Management Department, which provides technical support to the several areas of the Company. The objective is to provide information to Senior Management so they can make decisions regarding the most relevant risks and opportunities.

In order to do that, Cemig has put together a risk management process that aims to plan, identify, analyse, treat and monitor the mapped risks. At first, the Company ranks the risks identified as (i) process risks, which are those related to operations and are limited to the activities of each of the processes; (ii) macro-process risks, the impacts of which include different processes and departments of the Company; and (iii) Top Risks, which are macro-process risks that can directly impact the Company's strategy.

The Top Risks, as well as treatment recommendations made by the Corporate Risk Monitoring Committee - CMRC, are communicated to Senior Management.

When a Top Risk is mapped for the first time at Cemig, the following steps must be followed:
1) Planning - alignment between risk management and the Company's strategic objectives;
2) Identification - understanding of the scope, causes and impacts of the risk;
3) Analysis - an estimation of the probability of the risks occurring, as well as the potential damage caused by the impacts identified in the previous step;
4) Treatment - a survey of all actions and controls for risk mitigation, as well as the mitigating effect of these actions on the mapped impacts;
5) Monitoring - monitoring of mitigation initiatives and risk validation with its owner.

In the risk identification activity, the area responsible for centralized risk management and internal controls consults the managers of the areas related to the identified themes, including those areas that interact with external stakeholders, such as investor relations, strategic planning, sustainability and the general secretariat.

After the result of this consultation with the leaders, a proposal for a risk matrix is

presented to the Corporate Risk Monitoring Committee, which represents the Executive Board and includes considerations for improvements in the matrix.

After that, the matrix is sent for analysis by the Executive Board, which also perfects the product, and then forwards it to the Board of Directors. Also, the proposed matrix can be presented to the Board of Directors' support bodies, such as the Audit Committee and the Fiscal Council.

As a result of this process, Cemig builds the Top Risks Matrix, covering the Generation, Transmission, Distribution, Commercialization, Distributed Generation, and Holding businesses, as well as risks common to the business and/or possible adjustments to adapt to the current Strategic Planning.

The following stand out as corporate economic, environmental and social risks prioritized by the Board of Directors:
· Top Risk: Inefficiency in measures to minimize and adapt to the impacts of climate change at Cemig
o Description: They refer to the inadequacy of mitigation and adaptation measures to climate change in the long run, resulting from non-implementation or inefficiency of the measures necessary to minimize the impacts resulting from extreme weather events..
o Potential impact: "Damage to the power generation, transmission and distribution infrastructure, which may cause interruption of those services" and "Loss of revenue and market due to new low carbon solutions implemented by competitors".
o Sample of mitigation actions: "Structuring and execution of the 2023 - 2027 PDD (Distribution Development Plan) and the Distribution Operations Center of the Future Research and Development (R&D) Program (deployment of software based on the concepts of time-oriented and hyper-vision visual analytics, responsible for providing situational awareness to operators via a graphic interface)".

For example, this risk of "Inefficiency in measures to minimize and adapt to the impacts of climate change at Cemig" underwent all the process stages, after having been defined as a Top Risk. During the Identification phase, some of the causes identified included the complexity in predicting the frequency and severity of climate risks, the low diversification in the electric power production matrix (with a high dependence on water resources), regulatory changes, and the fragility of transmission and distribution lines. Some of the impacts identified were: Loss of revenue and market, rising energy prices, damage to infrastructure, failure to comply with regulatory risks. In the next phase, Analysis, the risk was classified as being of Impact 4. High (worst case scenario), considering the six impact ranges (From 1.Not Applicable to 6. Catastrophic) of the Risk Matrix. In terms of probability of occurrence (which varies from 1. Unlikely to 6. Almost certain), the risk was rated as 4. Probable. In the Treatment phase, some actions and controls for mitigation were raised, such as participation in associations that monitor regulatory changes, structuring and execution of the Distribution Development Plan (PDD), continuous monitoring of weather forecasts and fire warnings, among others. Finally, in the Monitoring phase, the risk was validated by the person in charge, and start and end dates as well as those responsible for each mitigating measure were

established.

That risk mentioned (Inefficiency of measures to minimize and adapt to the impacts of climate change at Cemig) takes into account suppliers (upstream) and customers, the society and related parties (downstream), with short-term (12 months), medium term (60 months) and long-term exposure estimate. Besides monitoring controls and mitigation actions involving those parties.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Regulatory changes: Via the Climate Change National Policy, the Brazilian government made its contribution to the Paris Agreement official by taking on a voluntary commitment through the Nationally Determined Contribution (NDC): reducing greenhouse gas (GHG) emissions by 37%, in relation to the 2005 levels by 2025, with a subsequent indicative contribution to reduce GHG emissions by 43% below the 2005 levels, by 2030. The Company considers that adaptation to regulatory changes imposed by the government in order to achieve national goals is the major impact of that risk. Currently, 100% of Cemig's installed capacity comes from renewable energy sources, predominantly hydropower. The strong dependency on the country's water regime may cause the need to make investments in thermoelectric plants in the medium term, in order to supply the contracted electricity demand. Should that happen, the risk of changes in legislation may materialize. Cemig seeks to implement measures to mitigate that regulatory impact by diversifying its generation matrix. The Company has medium- and long-term guidelines (until 2040) to expand the capacity of solar, wind, and thermal generation using natural gas. Another way of mitigating the risk is by participating in initiatives such as Plataforma de Ação pelo Clima (Action for Climate Platform) of the Brazil Network of the UN Global Compact, which aims at aligning strategies and operations of companies to the principles of corporate social responsibility and sustainability. Other regulatory risks: In order to propose measures to stimulate energy efficiency in Brazil, the Ministry of Mines and Energy published the National Energy Efficiency Plan (PNEf). The PNEf adopts the target of a 10% reduction in electricity consumption for the year 2030, based on the consumption scenario of 2004. The Company considers that the

		reduction in demand and the supply of electric energy by Cemig to its consumers may influence the Company results, and thus is one of the impacts associated to that regulatory risk. One of the ways of mitigating that risk is by membership in associations like ABRADEE, ABRATE, AGRATE and Cigré, which allows for a more adequate planning, since it is possible to be one step ahead of the facts. The risk associated to the current regulation is covered in the Top Risks called “Inefficiency of measures to minimize and adapt to the impacts of climate change at Cemig”, which is monitored by the Company on an annual basis.
Emerging regulation	Relevant, always included	Carbon taxation: Via the Climate Change National Policy, the Brazilian government made its contribution to the Paris Agreement official by taking on a voluntary commitment through the Nationally Determined Contribution (NDC): reducing greenhouse gas (GHG) emissions by 37%, in relation to the 2005 levels by 2025, with a subsequent indicative contribution to reduce GHG emissions by 43% below the 2005 levels, by 2030. The Company considers the creation of national carbon pricing instrument that may cause an increase in operating cost, the major potential impact of that risk. Currently, Cemig's electricity generation matrix is 100% renewable. However, the existence of a carbon pricing instrument is a future risk, should Cemig need to expand power generation by means of thermal plants powered by fossil fuels. Considering only Cemig's scope 1 emissions in 2020 (11,419.36 tCO2), and an internal carbon price of $ 12.50, with the dollar price at R$ 5.50, a possible taxation on emissions would represent an expenditure of R$ 785,081 per year. Cemig seeks to deploy measures to mitigate this impact by setting targets to reduce emissions and establishing assessment criteria for new acquisitions, considering the carbon risk in due diligence operations, immediately minimizing the probability and magnitude of the risk. Another way of mitigating this risk is by participating in the Climate Change and Air Quality Working Group, which is a part of FIEMG's Conselho de Empresários para o Meio Ambiente (CEMA or Council of Businesspeople for the Environment), where discussions on possible changes in legislation due to the implementation of the Climate Change National Policy are held. Cemig has also actively participated in the Advisory Committee of PMR Brazil Project, which ended in December 2020 and aimed at discussing the fitness and opportunity of including GHG emission pricing in the package of instruments geared at the deployment of the Climate Change National Policy (PNMC) in the post-2020 period. The analyses carried out during

		the project suggest that including a carbon pricing instrument in the national climate policy in the post-2020 period is desirable. The risk associated to emerging regulation is covered in the Top Risks called “Inefficiency of measures to minimize and adapt to the impacts of climate change at Cemig”, which is monitored by the Company on an annual basis.
Technology	Relevant, always included	Sped-up Technological Advance: The electricity sector has been constantly undergoing technological changes that demand an ability to greater and faster adaptation by the sector players. The Company loss of market, customers, and consequently, revenue, is the main potential impact of this risk. Cemig may have its business impacted by new technologies in the medium and long term, if it does not develop strategic partnerships or fails to implement technological changes to its services. Cemig seeks to implement measures to mitigate this impact by investing in research, development and innovation, always aiming to continuously improve its processes, reduce its greenhouse gas emissions and prepare for the effects of climate change - considering energy alternatives and energy efficiency. The company defined a medium and long-term strategic initiative to explore new technologies and opportunities, such as smart grid, hybrid generation, energy storage, “electrical stations”, digitization, and others, in order to mitigate this risk and leverage opportunities. As a way of making this strategic initiative feasible, Cemig issues R&D bid notices annually, focusing on mapped opportunities. In 2020, R$ 6.8 million were spent on R&D focused on the environment. The decrease on investments in relation to the previous year is due to the contingency management of funds with a view to ensuring priority actions and essential services and meet regulatory restrictions derived from the impacts of the Covid-19 pandemic on the power industry. For the same reason, no new Bid Notice was released in 2020; there was only a new project contracted (included in a 2019 Bid Notice) aimed at the development of innovative solutions for individual notification devices in case of dam emergencies. The technological risk is covered in the Top Risks called “Inefficiency of measures to minimize and adapt to the impacts of climate change at Cemig”, which is monitored by the Company on an annual basis.
Legal	Not relevant, included	Legal risks in relation to climate change have been included in the scope of the corporate assessment of risks related to climate change. However, they were considered not relevant, since in Brazil there is not yet a specific applicable legislation. Besides that, Cemig shut down its only thermal plant (UTE Igarapé) in 2019, despite the concession being in effect until August 2024.

Market	Relevant, always included	Cap-and-Trade schemes: The establishment of a cap-and-trade GHG emissions trading market in Brazil may lead to the need for more planning by Cemig to meet market-specific regulations, especially concerning monitoring and verification emissions. To mitigate this risk, Cemig tries to identify projects that produce carbon credits and long-term contracts with verifying and certifying companies, thus reducing the likelihood of this risk for the Company becoming actual. Besides, when assessing the acquisition of projects that use fossil fuels, Cemig makes internal analyses on the carbon risk and its financial impact for the Company; that is, the financial risk of the project in a possible future pricing scenario for emissions of GHG in Brazil. The Company participates in CDP's Benchmark Club Program, which allows for an improvement in its internal practices and review of its GHG emission reduction goals. Another way of mitigating that risk is by participating in the Climate Change and Air Quality Working Group, which is a part of FIEMG's Conselho de Empresários para o Meio Ambiente (CEMA or Council of Businesspeople for the Environment), where discussions on possible changes in legislation due to the implementation of the Climate Change National Policy, such as the creation of a carbon pricing instrument, are held. Cemig has also actively participated in the Advisory Committee of PMR Brazil Project, which ended in December 2020 and aimed at discussing the fitness and opportunity of including GHG emission pricing in the package of instruments geared at the deployment of the Climate Change National Policy (PNMC) in the post-2020 period. The analyses carried out during the project suggest that including a carbon pricing instrument in the national climate policy in the post-2020 period is desirable. The market risk is covered in the Top Risks called “Inefficiency in measures to minimize and adapt to the impacts of climate change at Cemig”, which is monitored by the Company on an annual basis.
Reputation	Relevant, always included	Image and Reputation: Cemig assesses the image and reputation impact in all its strategic risks prioritized by the Board of Directors, the so-called Top Risks. Specifically for the image and reputation aspect, the risk impact can be rated into 6 possible ranges. These ranges go from very low (possible exposure among sector employees, but reversible via actions to be taken by the process manager) to catastrophic (Image compromising on an international level before regulatory bodies, financial institutions, customers, the society, opinion makers, the market, and the media).

		Should Cemig need to expand its energy supply by means of thermal plants powered by fossil fuel, it may be criticized by society, thus impacting the brand value. Cemig's sustainability indicators may worsen, causing the company's score to be reduced in questionnaires such as ISE (B3's Corporate Sustainability Index) and DJSI (Dow Jones Sustainability Index). In an extreme case, this risk may cause Cemig to not be included in the portfolios of these sustainability indexes in a given year, resulting in a drop in market value and a deterioration of the company's reputation with investors.
Acute physical	Relevant, always included	Infrastructure damage: Intensive rainfall in a short time period, together with windstorms and lightning, can cause physical damage to the facilities that convey and distribute power, causing them to be unavailable and increasing Cemig's costs due to refunding to consumers because of power outages (DEC and FEC indicators). These phenomena are increasingly associated with the effects of an unfavourable microclimate, typical of large urban centers. Management methods seek to reduce the magnitude of this risk in the medium term by means of preventive adaptation measures, such as the management of urban tree coverage (through pruning), the operation of weather stations and a weather radar - which predicts the occurrence and intensity of storms more accurately - and an emergency plan with the allocation of maintenance teams for the speedy restoration of the power supply. In addition to that, Cemig also carries out works on its distribution system (expansion, reinforcement, renovation, and upgrading of assets such as substations and distribution lines). For the five-year investment cycle, which comprises the period from 2018 to 2022, as per the industry regulations, R$ 6.4 billion in funds were approved, which are distributed among the several macro-projects. In 2020, the Company made investments amounting to approximately R$ 1.3 billion. The risk associated to an acute physical parameter is covered in the Top Risks called “Inefficiency in measures to minimize and adapt to the impacts of climate change at Cemig”, which is monitored by the Company on an annual basis.
Chronic physical	Relevant, always included	Change in the rainfall pattern: Climate changes can cause alterations in seasonal rainfall patterns, provoking more pronounced extreme rain and drought events, as well in their geographic distribution. There may also be a change in the average amounts of rainfall, thus altering the volume of water that gets to the plants’ reservoirs. As Cemig's electricity production comes mainly from hydraulic sources, these changes may cause a decrease in its generation capacity.

		Actions taken to mitigate this risk are linked to expansion of its operations to other regions of Brazil and investments in diversification of the power generation matrix, seeking for solutions in other energy sources, such as solar and wind. Also, management of the hydrological risk is carried out considering randomness of climatic phenomena, without taking the effects of climate change into account. For that, Cemig has a specific organizational structure fully dedicated to the matter, supporting decisions of the Company risk management committees, whose purpose is efficiently treating corporate risks involving operational, commercial, financial, and regulatory aspects of Cemig Group's companies, especially in the sectoral scenario of tariff adjustment and hydrological restrictions. Changes in average temperature: Climate changes may cause an increase in average temperatures, changes in rainfall and drought regimes, and, indirectly, increase some risks to the Energy Transmission System, as prolonged drought conditions maximize the risk of fires. Fires within right-of-way lanes can cause transmission lines to become unavailable. In order to mitigate that risk, Cemig runs continuous inspections and cleaning along the right-of-way lanes of its transmission lines. Besides that, a new monitoring system was put in place for forecasting and warning of vegetation cleaning fires, so as to help the several areas of Cemig to minimize outage risks. Another way of mitigating that risk is by means of internal projects such as COD of the future - an Artificial-Intelligence-based hyper-vision platform of integrated situational space-time awareness for Operation and Distribution, and the COS, which aims at training and mobilizing teams to face extreme weather events. The risk associated to a chronic physical parameter is covered in the Top Risks called “Inefficiency in measures to minimize and adapt to the impacts of climate change at Cemig”, which is monitored by the Company on an annual basis.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical

Changes in precipitation patterns and extreme variability in weather patterns

Primary potential financial impact

Other, please specify

Mismatch in Cemig D cash flow due to an increase in energy purchase prices

Company-specific description

Cemig D is one of the most outstanding energy distributors in the country's electricity sector and is the largest distributor in Latin America. Its concession area covers 567,478 km², approximately 96% of the State of Minas Gerais, with 545,706 km of distribution networks, of which 111,061 km are in urban areas, 417,209 km are of rural networks and 17,436 km are of distribution lines. Cemig D also has the highest level of service to consumers benefiting from the social tariff in Brazil, serving an average of 881 thousand consumers with this profile, which amounts to approximately 12% of all consumers in the residential class.

The energy purchase contracts signed in energy auctions by Cemig D have their prices linked to some variables that cannot be controlled, such as adverse hydrological conditions. And as the energy generated by the Company is mostly produced by hydroelectric plants, a prolonged period of shortage can reduce the volume of water in the reservoirs.

Although eventual increases in energy purchase costs resulting from the conditions mentioned above are passed on to Cemig D in tariff adjustments, this situation may cause cash flow mismatches, with a negative impact on Cemig's financial conditions.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

150,000,000

Potential financial impact figure – maximum (currency)

500,000,000

Explanation of financial impact figure

Purchase prices of energy have been defined, since 2005, in open auctions with an advance of 4 to 6 years, and the traded energy is valid for 20 to 30 years. Due to unexpected hydrological conditions, the same amount of energy sold at present may change prices in the future. As the amount has already been paid by Cemig D, if this happens, the energy price will go up, which may cause a mismatch in Cemig D's cash flow.

As of January 2015, Aneel implemented the Tariff Flag system. This system increases the final customer tariff when the generator system undergoes adverse hydrological conditions, thus passing on part of the costs to these customers faster. However, even with this mechanism in place, there is still a risk that the energy purchase prices will increase so much that the Company's cash will be under pressure until the next tariff adjustment.

The financial impact estimate was considered based on Cemig's Corporate Risk Matrix, using the financial aspect in its number 4 (High Impact) intensity, since it may prove difficult for the company to recover within the year (as explained in Cemig's Risk Matrix). Such a case occurred in December 2018.

That amount can be broken down into two components: Settlement Price for Differences or PLD (transfer of ANEEL funds or fines to those that generated, respectively, more or less that was scheduled by the Physical Guarantee) and the Physical Factor of Guarantee Adjustment - GSF (readjustment of the Physical Guarantee of the plants in case they deliver less than wat was scheduled, in order to update the conditions of the generating complex). In this case, 100% = 75% PLD + 25% GSF.

Cost of response to risk

1,628,077.07

Description of response and explanation of cost calculation

Cemig has a specific organizational structure fully dedicated to managing the purchase and sale of energy. It has the Energy Risk Management Committee - CGRE intended to minimize the risks in the purchase and sale of energy contracts, in addition to mitigate the risk of exposure in the short term from adverse hydrological conditions.

Management cost is calculated based on the company costs with the tariff team. Cemig has seven employees in the tariff team, and the cost per employee is R$ 232,582.44. Thus, the total management cost is calculated like this: 7 x R$ 232,582.44 = R$ 1,628,077.77.

Comment

N/A

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact

Other, please specify

Increase in operational costs due to refunding to consumers because of power outages

Company-specific description

Intensive rainfall in a short period, together with windstorms and lightning, can cause physical damage to the facilities that convey and distribute power, causing them to be unavailable and increasing Cemig's costs due to refunding to consumers because of power outages.

To assess effectiveness of actions and initiatives carried out regarding energy quality, Cemig uses the DEC (Equivalent Interruption Duration per Consumer Unit) and FEC (Equivalent Frequency of Interruption per Consumer Unit) indicators. In 2020, approximately R$ 54 million was paid in compensation to Cemig D's consumers for breach of individual electricity supply continuity indicators. In 2020, this compensation was 3.1% higher than in 2019.

These phenomena are increasingly associated with the effects of an unfavorable microclimate, typical of large urban centers. This kind of event can lead to an increase in indicators measuring energy supply quality. Extrapolation of DEC and FEC indicators limits causes a risk to the Company. Failure to meet the regulatory targets for quality indicators for 2 consecutive years or in the fifth historic year may lead to the filing of the concession forfeiture procedure by Aneel, thus involving the risk of loss of the concession.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

54,207,753.83

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The R$ 54,207,753.83 amount corresponds to the following combination of costs: offsetting costs (ANEEL penalty) for breaching of system continuity indicators by DIC (individual interruption time per consumer unit), FIC (individual interruption frequency per consumer unit), DMIC (maximum duration of continuous interruption per consumer unit or connection point) and DICRI (individual interruption duration that happened in a critical day per consumer unit or connection point). In this case, the amount of R$ 54,207,753.83 = DIC, FIC and DMIC Remuneration (monthly: R$ 40,495,749.70 + quarterly: R$ 5,864,641.90 + annual: R$ 5,906,684.36) + DICRI Remuneration (monthly: R$ 1,940,677.87).

Cost of response to risk

503,200,000

Description of response and explanation of cost calculation

Management methods seek to reduce the magnitude of this risk in the medium-term through preventive adaptation measures, such as the management of urban tree coverage through pruning, operation of meteorological stations and weather radar - which predicts the occurrence and intensity of storms more accurately - and an emergency plan with the allocation of maintenance teams for the speedy restoration of the power supply. Besides that, Cemig maintains the Distribution Development Plan - PDD, which consists of undertaking projects linked to the electric power system and associated with the expansion, boosting, refurbishing and renovation of Cemig D assets, such as substations and distribution lines. In 2020, R$ 1.273 million was invested in PDD.

The generation costs are not only to mitigate that risk, but also to tray to increase energy supply to customers. To calculate the management cost, investments in expansion and reinforcement of high voltage lines (R$ 348.5 million), renovation of the high voltage system (R$ 5.4 million), reinforcement of medium and low voltage grids (R$ 82.9 million) and renovation of the medium and low voltage grids (R$ 66.4 million) were considered. Thus, R$ 503.2 million = 348.5 + 5.4 + 82.9 + 66.4 (in R$ million). Namely, the R$ 503.2 million amount is equivalent to 39.5% of the total invested in 2020.

Comment

Via the Distribution Development Plan - PDD, Cemig D prioritizes investments to be made by the Distributor Utility referring to BRR - Regulatory Remuneration Base, and the respective prudent management of resources in the current tariff cycle, with the objective of increasing the availability of power on a continuous basis, with quality, safety and in the amount required by customers, thus promoting social and economic development in Cemig D's concession area.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Upstream

Risk type & Primary climate-related risk driver

Emerging regulation

Carbon pricing mechanisms

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

One of the major emerging regulations related to climate change in Brazil covers carbon pricing. Cemig has actively participated in the Advisory Committee of PMR Brazil Project, which ended in December 2020 and aimed at discussing the fitness and opportunity of including GHG emission pricing in the package of instruments geared at the deployment of the Climate Change National Policy (PNMC) in the post-2020 period. One of the sectors that has been analysed in this regard is the fuel one.
A carbon price applied to the fuel sector would imply in an increase in fossil fuel prices.

Today, 59.5% (6,834.52 tCO2e) of Cemig's Scope 1 emissions are from diesel consumption, and 8.95% (1,022.38 tCO2e) from gasoline consumption. For diesel, the consumption by Cemig GT and Cemig D own fleet add up to 6,635.96 tCO2e (that is, 97% of Scope 1 diesel emissions). For gasoline, the consumption by Cemig GT and Cemig D own fleet add up to 955.22 tCO2e (that is, 93% of Scope 1 gasoline emissions). A taxation project on the fuel sector emissions would increase the company operating costs.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1,843,548.16

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The potential impact amount refers to additional expenses with the purchase of fuel. In order to estimate it, three parameters were taken into account: (i) Greenhouse gas emissions from each fuel type (as per Cemig's 2020 inventory), where: Diesel = 6,635.96 tCO2e.L and Gasoline = 955.22 tCO2e.L; (ii) Diesel and gasoline consumption in 2020 (ANP annual average); (iii) Internal carbon price (US$12.50).
Thus, the amount of R$ 1,843,548.16 = [(6,635.96 tCO2e.L x 3.431/L x US$ 12.50/tCO2e x R$5.50/US$) + (955.22 tCO2e.L x 4.237/L x US$ 12.50/ tCO2e x R$5.50/US$)].
As fuel purchase is an operating expense, it is more sensitive for the company, for its increase cannot be passed through to the product / consumer, due to regulatory definitions.

Cost of response to risk

43,149,707.33

Description of response and explanation of cost calculation

In order to reduce fossil fuel consumption, some actions are taken:
1. Cemig has as a directive stating the average manufacture date of vehicles in its fleet must be less than 05 (five) years, the legal depreciation period set by the granting authority. Thus, the Company renews its vehicle fleet on an annual basis;
2. The Company fleet is mainly made up of flexible fuel vehicles, and ethanol is preferred to fuel vehicles;
3. In order to influence carbon pricing regulation in Brazil, the company is actively taking part in discussion forums on the matter.

The renewal of Cemig's fleet amounted to an investment of R$ 43,149,707.33 in 2020, and a total cost of R$ 246,979,408.80 is expected for a 5-year term in a new agreement. Fuel economy will offset the medium-term investment and make the company less vulnerable to carbon pricing, besides other advantages a newer fleet can bring in.

Cemig D and Cemig GT diesel and gasoline consumption emissions went from 8,492.92 tCO2e in 2019 to 7,591.18 tCO2e in 2020, resulting in a 10.6% reduction (data from Cemig’s GHG Inventory 2020).

Comment

N/A

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical

Rising mean temperatures

Primary potential financial impact

Other, please specify

Break in energy supply

Company-specific description

Climate change may cause an increase in average temperatures and changes in rainfall and drought regimes. In addition, they may also cause extreme weather events, like storms and high-speed wind events.

Indirectly, such consequences of climate change may increase some risks to the Energy Transmission System, as prolonged drought conditions maximize the risk of fires, while high wind speeds can impact the physical structures of transmission lines.
Fires within right-of-way lanes can cause transmission lines to become unavailable.

Cemig Transmission operation area that was most affected by forest fires in 2020 was Triângulo Mineiro, where there were clearing fires that caused 4 shutdowns of transmission lines.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

450,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Aneel Normative Resolution 729/16, which lays down provisions related to quality of the public electricity transmission service, associated with availability and the operational capacity of facilities, determines discounts for a variable portion caused by fires that produce outages in Transmission Lines.

In 2020, R$ 450,000.00 were deducted, referring to variable portion discounts caused by fires that produced outages in 4 power transmission line shutdowns.

Cost of response to risk

5,090,000

Description of response and explanation of cost calculation

Cemig continuously inspects and cleans its right-of-way lanes (limited to minimal vegetation removal, avoiding cutting in places where there is no interference with the transmission lines) of its transmission lines to maximize the safety and availability of transmission functions.

In 2020, for example, right-of-way lanes were cleaned in a total area of 32,562,790 m² along Cemig's structures and transmission lines. The management cost relating to clearing of the right-of-way lane along the structure of power transmission lines (LTs) of Cemig GT was R$ 5.09 million. Without the lane clearing activity, the LT availability would be compromised, and the financial impact would be immense and hard to gage.

Comment

The management costs are annual and are associated with the process of cleaning the right-of-way along the structures and transmission lines.
The reported financial impact refers to 4 TL disconnections during 2020, among the several transmission lines Cemig has.
The management cost is greater than the financial impact, because it refers to the maintenance of Cemig's entire transmission system.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Other, please specify

Sale of CER in a cap-and-trade system

Primary potential financial impact

Other, please specify

Increased revenue through new solutions for adaptation needs (e.g., products and service of insurance risk transfer)

Company-specific description

Compliance with regulatory requirements and the coming up of new international agreements may create opportunities for Cemig, as the Company, by having a 100% renewable energy matrix (2020 installed capacity: 98.1% hydraulic and 1.9% wind and solar) and with low carbon emissions, is better prepared than its competitors to adapt to that scenario.

The establishment of a cap-and-trade emissions trading market in Brazil or worldwide, along the lines of the CDM, for example, could lead Cemig to position itself as an important provider of emission reduction certificates. This opportunity could lead to an increase in revenue at Cemig.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

2,895,982.43

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Cemig has a credit generation potential within MDL for the plants of Guanhães Energia, PCH Cachoeirão, UHE Santo Antônio and PCH Paracambi. However, in all those instances, Cemig does not have operating control, and thus credit management is not exclusively the company's, requiring an agreement with the shareholders. At Guanhães Energia, the credit generation potential is 46,026, 49% being Cemig's; at PCH Cachoeirão, it totals 34,059 credits, 49% being Cemig's; at UHE Santo Antonio, it totals 4,015,196, 15% being Cemig's; and at UHE Paracambi, it totals 33.993 credits, 49% being Cemig's.

The financial impact was calculated based on the possibility of those credits being traded at US$ 0.80 per credit, with the US dollar exchange rate at R$ 5.50 (RAS 2020 - Cemig amount). Thus, R$ 2,895,982.43 = [(46,026 credits x 49%) + (34,059 credits x 49%) + (4,015,196 credits x 15%) + (33,993 credits x 49%)] * US$ 0.80 / credit * R$ 5.50 / US$.

Cost to realize opportunity

450,000

Strategy to realize opportunity and explanation of cost calculation

Cemig has professionals trained in the identification of projects that generate carbon credits and has long-term contracts with verifying and certifying companies, thus increasing the possibility of leveraging this opportunity. Cemig has pro-MDL emissions reduction registered at UNFCCC.

In 2020, those projects were monitored (658,178 carbon credits from Cemig). The associated costs are those relating to monitoring (R$ 56,250.00 per project) and audits (R$ 56,250.00 per project) required for validation and sale of credits generated by the four projects: Guanhães Energia, PCH Cachoeirão, UHE Santo Antônio and PCH Paracambi. Being so, R$ 450,000.00 = 2 X R$ 56,260.00 per project x 4 projects.

Comment

Costs are not annual and will occur when audits are performed.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Markets

Primary climate-related opportunity driver

Other, please specify

Energy consumption increase due to average temperature increase

Primary potential financial impact

Other, please specify

Revenue increase

Company-specific description

Probably increase in average temperatures will cause changes in consumption patterns, such as an increase in the use of ventilation and cooling systems, resulting in an increased energy demand. A study conducted by Rodrigues et al. (2013) assessed the possible impact of climate change on power home demand, based on average quarterly temperature increase forecasts according to the GHG emission scenario in the 4th IPCC Report. The results suggest power home demand in Brazil may increase as a response to the expected temperature increase.

Considering Cemig has over 7.1 million home consumers in the State of Minas Gerais, leveraging this opportunity will cause a substantial increase in Company revenues.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

1,862,853,318.34

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

According to the study by Rodrigues et al (2013), the increase in home power demand will be of about 27% by 2050. Considering that Cemig's sale to home customers was 10,980.63 GWh in 2020, with a 27% increase in 2050, the sale will be equivalent to 13,945.40 GWh. So, the additional part will be 2,964.77 GWh.

Using the average value of the current tariff of R$ 0.62833 / kWh (2020 Normal Home Tariff, green flag), the possible financial impact was calculated. Thus, R$ 1,826,853.318,34 = 2,964.77 GWh x R$ 0.62833 / kWh x 1,000,000 (conversion of GWh into kWh).

Cost to realize opportunity

2,529,961,076.66

Strategy to realize opportunity and explanation of cost calculation

Cemig has been getting ready to meet a foreseen increasing in energy demand by expanding its power distribution infrastructure availability to meet that market. This is being done by expansion works on substations and distribution lines and grids. These actions aim at enhancing the probability of leveraging that opportunity and its magnitude. The investment cycle is a five-year one, as per sector regulations. The amount raised to realize the opportunity in 2020 is made up of the following: R$ 2,529,961,076.66 (100%) = 69.2% in the expanding and boosting of High Voltage + 1.1% in renovation of High Voltage + 16.5% in boosting Medium and Low Voltage + 13.2% in renovation of Medium and Low Voltage.

Total approved investment: the PDD amount in the 2018-2022 cycle is $ 6.4 billion. From that amount, R$ 1.273 billion was invested during 2020 in the following macroprojects: - Expansion and boosting of high voltage; - Assistance to consumers and accessing users (Cemig Ownership Interest); - Renovation of the high voltage system; - Operation and maintenance of high voltage lines; - Boosting of medium and low voltage lines; - Service to the medium and low voltage urban market; - Service to the medium and low voltage rural market; - Supplemental Program (Cemig Ownership Interest) in medium and low voltage; - Third party safety (Cemig Ownership Interest) - Renovation of medium and low voltage lines; - Operation and maintenance of medium and low voltage; - Change in Measurement / Threshold Measurement; - Environment; - Medium Voltage Automation Master Plan; - Telecommunications; Lawsuits.

Comment

Via the Distribution Development Plan - PDD, Cemig D prioritizes investments to be made by the Distributor Utility referring to BRR - Regulatory Remuneration Base, and the respective prudent management of resources in the current tariff cycle, with the objective of increasing the availability of electric power on a continuous basis, with quality, safety and in the amount required by customers, thus promoting social and economic development in Cemig D's concession area. The PDD consists of investment projects linked to the electric power system and associated with the expansion, boosting, refurbishing and renovation of Cemig D assets, such as substations and distribution lines.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Other, please specify

Sale of energy efficiency projects

Primary potential financial impact

Other, please specify

Revenue increase for the Company and pushback of investments in energy generation

Company-specific description

A scenario of larger corporate investments in energy efficiency aimed at reducing power consumption and, consequently, GHG emissions, Cemig SIM subsidiary will possibly have an increased demand for its services, including deploying projects for use of lighting with LED technology, cogeneration, distributed generation, and other energy solution services.

In this context, Cemig SIM may also have an increase in demand for consulting services for deployment of an Energy Management System based on ISO 50001.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

9,429,629.93

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The value por the potential financial impact was calculated from Cemig's SIM gross operational revenue.
The choice for this value to estimate financial impact was made because most part of this revenue is related to energy efficiency projects, which are carried out via performance agreements where Cemig SIM contributes with the required funds and recoups its investment by means of savings provided by those projects.

Cost to realize opportunity

9,365,000

Strategy to realize opportunity and explanation of cost calculation

Cemig SIM was established in October 2019, the result of the merger from the operations of Efficientia and Cemig GD companies, to perform in the market of

distributed generation, energy efficiency, and energy solutions. Besides branding and marketing strategy focused on retail and digital transformation of the electric sector, SIM's organizational culture, strongly innovative and technological in nature, is being boosted so customers are always at the center of decisions.

In 2020, Cemig SIM provided 2,024 customers with the opportunity of consuming 3,962MWh/month; that energy was generated by ten photovoltaic plants (Janúba, Corinto, Manga, Bonfinópolis II, Lagoa Grande, Lontra, Mato Verde, Mirabela, Porteirinha I and Porteirinha II).

Cemig SIM acquired, in 2020, a 49% interest in seven special purpose companies (SPE), geared to distributed generation using a photovoltaic solar source. An investment of approximately R$ 55 million was made in 19 photovoltaic plants (UFV) and 32 MW of power. With the connection of the 19 generating units, Cemig SIM closed 2020 with a total installed capacity of 42 MW in miniDG. In 2020, the energy generated and offset to Cemig SIM customers reached an amount of 35.9 GWh, which is equivalent to a reduction in the emission of 2,660 tons of CO2 into the atmosphere. Cemig SIM will continue expanding its installed capacity in 2021 as well as also extend its services, hitherto restricted to the commercial and industrial market, to the residential market.

The costs are annual and exclusively associated with the salary of the employees that work for Cemig SIM, without including investment costs in energy efficiency projects. Annual costs in 2020 were calculated like this: average cost with salaries of R$ 203,586.96 per employee x 46 employees = R$ 9,365,000.00.

Comment

The associated costs will exist whenever there is that opportunity.

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes

C3.1b

(C3.1b) Does your organization intend to publish a low-carbon transition plan in the next two years?

	Intention to publish a low-carbon transition plan	Intention to include the transition plan as a scheduled resolution item at	Comment

		Annual General Meetings (AGMs)	
Row 1	Yes, in the next two years	Yes, we intend to include it as a scheduled AGM resolution item	In 2019, Cemig's Sustainability Plan was developed. It is aligned with the Strategic Planning and the company's Top Risks, which are those risks from macroprocesses that can directly impact the Company's strategy. In 2020, the Company listed goals related to several important themes for it, including Climate Change and Environmental Performance. Some goals related to the low carbon theme listed in 2020 include: planting of trees, reducing the biomass affected by the Company operations, maintaining energy consumption on the level of the amounts consumed in 2017 until 2022, recycling, regenerating or selling 99% of industrial waste, reducing particle material emissions, and maintaining SF6 loss percentage (kg of SF6 emitted/total installed quantity of SF6) at a maximum of 0.66% until 2022. Besides the Sustainability Plan, Cemig is participating in the ACT-DDP project, which aims at raising the level of decarbonization ambition of critical economic sectors, including the electric energy one. The alliance between ACT-Assessing Low Carbon Transition and DDP-Deep Decarbonization Pathways innovative technologies will allow for the assessment of the company's decarbonization strategies in relation to the nationwide and sectoral decarbonization routes, in keeping with the Paris Agreement objectives. The project focuses on: 1. Building of sectoral decarbonization scenarios and pathways; 2. Assessment of decarbonization strategies of local companies in relation to the routes developed; 3. Transfer of knowledge and communication on low carbon sectoral transition on a nationwide level; 4. Communication on an international level, with a focus on Latin America.

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative and quantitative

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
RCP 2.6 RCP 4.5 RCP 6 RCP 8.5 Other, please specify SRES	AR4 (CMIP3) and AR5 (CMIP5) global climate models from IPCC were used in developing the work "Effect of climate change on hydrological regime of watersheds and hydropower use assured energy" (R&D Strategic Project No. 010/2008). The CMIP3 model was integrated using SRES – Special Report Emission Scenarios. SRES includes socio-economic scenarios that consider the development of society, population growth, and intensity of GHG emissions. For integration of CMIP5 models, the scenarios used are those from RCPs – Representative Concentration Pathways, which represent radiative forcing. Based on the model climate variables, forecasts for rainfalls, soil use, and water demand for urban and rural use were converted into inflows for the National Interconnected System plant reservoirs. Assured energies for each scenario were calculated, considering the generating complex existing at the time and the future one (the set of plants expected to be operating in 2030, according to PNE2030 from the Energy Research Company). The assured energy calculation was done for the 2040, 2070, and 2100 timeframes, so the results of the effort could serve as a long-term planning, allowing climate change scenarios to be taken into account. The result of the work indicates a reduction (mainly in the Amazon and Northeast Region of the country) and an increase in rainfall in the South Region. Assured energies calculated from climate model information reflect the trend noticed for inflows. Assured energy reduction average for the existing generating complex reaches 15%, whereas the one for the future complex reaches 25% for the year 2041 and on. It can be concluded that the Brazilian generating complex has decreased its regularization capacity in face of the system energy demand in the past decades, and is increasingly sensitive to rainfall variations. Another project developed by Cemig was R&D GT 0552 - Evaporation of the Funil hydroelectric plant reservoir: Water Footprint Characterization. Three HPPs installed in cascade were evaluated and the following impacts were considered: reduction/increase in energy production potential, impact on the water footprint, and possible interruptions in the production of electricity due to low water availability. Climate change impacts on runoff simulation considered scenarios RCP 4.5 and RCP 8.5, simulated by the Eta-HadGEM2-ES and Eta-MIROCC5 regional climate models. The control was the assessed period (1961-2005, 2007-2040, 2041-2070, 2071-2099).

	For Eta-HadGEM2-ES, the largest reductions in monthly average outflows were noticed from 2007-2040 under RCP 4.5 and, during the 2071-2099 period, under RCP 8.5. For Eta-MIROC5, the largest reductions in monthly average outflows were noticed from 2071-2099 under RCP 4.5, and for 2007-2040, under RCP 8.5. Forecast for the most critical impact on energy generation potential is expected during the 2071-2099 period at Itutinga Plant, considering the Eta-HadGEM2-ES under influence of RCP 8.5. The results indicate the plant should not operate 69.1% of the time, as minimum generation (9.7 MW) should not be reached. For Eta-MIROC5, during 2071-2099 under RCP 4.5, results indicate the plant should not operate 10.5% of the time. The results of these scenarios contributed for the development of a short-term (2019-2020) initiative to consider the option for the purchase of assets from wind and solar energy agreements in place and the medium- and long-term (2021 to 2040) initiative for expanding wind, solar, and natural gas thermal generation capacity. During 2020, the Company has been extending its performance in the renewable generation of wind and solar energies, in keeping with its Strategic Planning and, in 2021, a new scenario analysis will be developed. This way, the company will continue to diversify its power plants, gradually reducing the percentage of installed capacity in hydropower plants and betting on wind and solar plants.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	As its production of power is basically hydraulic, Cemig acknowledges the risks inherent to climate change can cause a decrease in generation capacity and a significant impact on energy supply. This way, Cemig works preventively by monitoring, among other risks: - Change in the rainfall pattern: Cemig has a specific organizational structure supporting risk management and decision-making both for trade and operation of assets. Cemig also participates in the Energy Reallocation Mechanism (MRE), whose purpose is to share the hydrological risks of power plants in situations of high inflows and generation and that transfer power to plants in situations

		of low inflows and generation. - Fall of trees during storms: Cemig continually inspects and cleans the right-of-way lanes of its transmission lines so as to maximize the safety and availability of transmission and distribution functions (always limited to a minimum removal of vegetation, avoiding cutting in places where there is no interference with transmission and distribution lines). - Changes in rainfall and drought extremes: Management methods seek to reduce the magnitude of this risk in the medium term through preventive adaptation measures, such as the adequate management of urban tree coverage via pruning, the operation of weather stations and a weather radar - which predicts the occurrence and intensity of storms more accurately - and an emergency plan with the allocation of maintenance teams for the speedy restoration of the power supply. - Changes in consumer behaviour: That risk is managed by diagnosing the electrical system for the need for expansion works, monitoring of operating conditions, and reprioritization of works. Cemig estimates the magnitude of that impact will be average, occurring mainly in the years of low inflows into the reservoirs. On what it comes to Products and Services, short and time horizons will be considered, accordingly with the new Strategic Planning, reviewed in 2020, to be put in practice from 2021 to 2030.
Supply chain and/or value chain	Yes	Possible losses from an increase in wind, flood, and drought intensity may indirectly affect Cemig's energy business operation when they impact the supplier chain, especially those directly involved in infrastructure deploying/maintenance (transmission and distribution). This way, Cemig constantly monitors its supplier chain by keeping a high degree of demand and care based on mapping of potential risks and probabilities of their occurring, and the tangible and intangible impacts calculated at financial values strategic for the Company. Besides that, Cemig tries to align suppliers and contractors with its vision of sustainability, its commitments and its corporate values. Among these corporate values, Cemig includes Commitment to Climate Change into its Supply Policy. Cemig estimates this impact may occur at the medium term,

		and its magnitude will be low, as the company has a supplier ranking system based on social and environmental criteria. In 2020, there were 1,543 suppliers with current contracts categorized as medium and high social risk and 207 categorized as medium and high environmental risk. From that group, 115 are classified as high sustainability risk suppliers, due to dealing with the supplying of objects that pose a high environmental risk and a high social risk, and also, two of them are rated as posing a high financial risk. Of the 115 high sustainability risk suppliers, 90 are critical suppliers; that is, suppliers whose goods or services have a significant impact on the company's competitive advantage, market success or survival. A strategic decision by Cemig that was influenced by the climate issue was asking suppliers to answer a socio-environmental question pool (started in 2019 and applied in 2020). The pool, called Industrial Technical Assessment, must be answered by both new suppliers and those already hired by Cemig, as a form of periodic assessment. It provides several questions, including some related to the environment (monitoring of GHG emissions and GHG reduction goals). Besides, a climate change brochure was prepared in 2020 to be made available at the supplier's website in 2021.
Investment in R&D	Yes	As a measure of its efforts in innovation, the Company has an indicator called INOV, which represents the relationship between the investments made in R&D projects and other investments in innovation in the current year, in relation to its net operating revenue. The result ascertained indicated that 0.33% of the year's net revenue was allocated to research, development, and innovation, and fell 0.56% behind the goal laid down. This result is justified by the temporary closing down of laboratories due to the pandemic. Also, only 70% of the resources provided for R&D were submitted to contingency management, also due to the pandemic, since the Company needed to guarantee resources for priority actions, ensuring essential services and meeting regulatory restrictions. The Research and Development. (R&D) program can be highlighted as one of the major Cemig innovation vectors. In that program, initiatives are carried out that go from incremental technology projects - responsible for bringing in operational efficiency gains and cost savings - down to those of a radical or disruptive nature, capable of providing radically

		new products that even impact the market. In 2018 the R&D program was restructured based on Cemig's Digital Technology Innovation Strategic Plan, thus giving rise to the Cemig 4.0 Program. Cemig 4.0 aims at positioning the Company among businesses in the sector capable of responding to new global trends and demands on energy systems. It is via this program that Cemig should explore opportunities and challenges of the new business models in the segment. For 2019, Cemig made the strategic decision of basing R&D programs on Decarbonization (among other issues), thus impacting on themes like electric mobility, renewable energies, distributed generation, and energy storage. When it comes to time frame, the medium and long term are taken into account for project duration. Despite no new R&D projects have been started in the area of low carbon, the Company kept making financial contributions during 2020 for previously approved projects within the Cemig 4.0 program.
Operations	Yes	Cemig promotes a series of initiatives that enable the accurate management of possible impacts on its operation; among which the following stand out: - Hydrometeorological monitoring In a preventive way, it invests in practices that place it in a situation of greater security, given the several possible scenarios, using modern techniques and equipment, such as the Storm Location System, a Telemetry, and Hydrometeorological Monitoring System, mathematical models of hydrological simulation and weather and climate forecasting. - Dam Safety: The process aimed at guaranteeing the safety of the dams operated and maintained by Cemig uses a methodology supported by the best national and international practices at all its stages. This methodology also complies with Federal Law 12,334/2010, which lays down the Brazilian National Dam Safety Policy and its associated regulations. This includes procedures for field inspections, collection and analysis of instrumentation data, drafting and updating of dam safety plans, planning and monitoring of maintenance services, analysis of results, and ranking of civil structures. Based on the ranking of the structures, the frequency of safety inspections and the monitoring routine are laid down. Each dam vulnerability is continuously automatically

		calculated and monitored by the Dam Safety Specialist System (Inspector). - Distribution Development Plan (PDD): The PDD consists of undertaking projects linked to the electric power system and associated with the expansion, boosting, refurbishing and renovation of Cemig D's assets, such as substations and distribution lines. - Energy Alternatives: As Cemig sees it, the term “Energy Alternatives” covers the whole energy chain, including transportation, transformation, technological routes, supplying and storage, energy efficiency, and end-use of energy. As they are integral and mutually depending elements in the energy matrix, new sources and technologies, distributed generation, start grids, element vehicles, energy efficiency, and the best use of traditional energy resources make up energy alternatives. Given its expertise in that theme, the Company has participated in committees and groups. The company estimates it may be impacted in the medium term, which may cause operating costs to increase due to the deploying of adaptation and mitigation efforts.

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Indirect costs Capital expenditures Acquisitions and divestments Access to capital Assets Liabilities	For all the elements described, the time horizon is between short and medium term. REVENUES Risks: Cemig's power generation is basically hydraulic (98% of the installed capacity), and a decrease in rainfall rates, which can be caused by climate change, affects the volume of water stored in reservoirs, leading to a reduction in power generation capacity. That is, the risks inherent to climate change may increase exposure of generators in the short-term market due to a significant decrease in power supply, so it is a high magnitude impact. This situation can directly affect Company turnover, and even give rise to court actions for any losses caused.

		Accidental breaks in power transmission lines due to extreme weather conditions may cause a decrease in energy availability, directly impacting turnover, and in distribution lines, causing power outages. Opportunity: increase in average temperatures may cause an increase in the use of air-conditioning and cooling equipment, impacting energy demand and increasing turnover. INDIRECT COSTS Risks: Any reduction in the volume of average rainfall resulting from climate change may affect the volume of water stored in reservoirs and, consequently, reduce the power generation capacity of hydroelectric plants. Because of that, the Brazilian National Electric System boosts the generation of energy by thermoelectric plants, whose operating cost is higher, leading the System to operate at higher prices. In addition, the production of thermoelectric plants increases the emission of carbon dioxide and other pollutants. Also, extreme weather conditions may cause damages along power transmission lines and substations, giving rise to additional equipment maintenance/rebuilding costs. Regulatory changes can cause a cost increase if they provoke an increase in the taxation levied on energy generation, transmission, and/or distribution activities. Opportunity: incentive to wind and/or photovoltaic generation may lead to an increase in the energy generation capacity from clean sources that are independent of the hydraulic component, thus reducing the need for conveying thermoelectric plant energy along the ONS, and thus, reduce operational costs. The company was impacted in years of short rainfall, as it happened in 2014 and 2017. As a countermeasure, the Energy Reallocation Mechanism (“MRE”) mitigated part of the impact of the generation variability of hydroelectric plants. When all the plants together produce less than the requirement amount, the mechanism reduces energy available at the plants, causing a negative short-term market exposure, resulting in a need for purchasing energy at the Varied Settlement Price – PLD. In years with very critical hydrology, the available energy production factor may compromise over 20% of the energy available at hydropower plants, and so its magnitude is high. CAPITAL EXPENDITURE Risk: Climate change determines the need for the Company to make additional investments to maintain and improve its distribution grid. The Distribution Development Program (PDD) contributes to mitigate that risk, besides meeting the increase in demand from the natural growth of the population. The company considers this impact of average magnitude, and the high, medium and low voltage boosting works account for 39.5% of PDD investments in 2020.

		ACQUISITIONS AND DIVESTITMENTS: Opportunity: The uncertainty regarding rainfall levels and the resulting decrease in Cemig plants' capacity to ensure generation cause a need for diversifying the Company's generation complex and foster construction/acquisition of wind farm and photovoltaic projects, technologies Cemig already has expertise in. The company considers this impact magnitude as low, due to hydrologic risk renegotiation; also, in 2018, it approved - in its multiannual business plan - a study initiative for investments in wind and solar power with a view at diversifying its generating complex. ACCESS TO CAPITAL Risk: If there is an expansion of generation from non-renewable sources due to periods of water scarcity, there may be an increase in GHG emissions by the Company. As a result, Cemig's performance in the sustainability indexes it is included in (DJSI, ISE, Oekom, CDP, Sustainalytics, and others) could be negatively influenced. Opportunity: Cemig participates in several sustainability indexes and rankings, which contributes to communicate to the market the Company's sustainability practices, including its actions to mitigate climate change effects, thus facilitating access to investors' capital and the money market. ASSETS Risk: Possible extreme climate events may result in an overload of Cemig's water reservoirs, and even damage to generation units. Cemig seeks to mitigate that risk by investing in dam safety (prevention) and also by installing a weather radar (catastrophe prevention). The magnitude of that impact is low, due to maintenance services performed in its plants. The occurrence of extreme weather events, such as torrential rains and high-speed winds, can also cause trees to fall and damage transmission and distribution lines. This risk is mitigated by pruning trees located in critical areas along the transmission lines and strengthening those lines. This impact magnitude is also low, due to the above-mentioned ongoing maintenance services and mitigation actions. Opportunity: in order to reduce the impact of climate change, Cemig's strategic driver is an effort to diversify its energy matrix; this way, the Company has developed expertise in renewable energy generation (mainly wind and photovoltaic), in addition to constantly assessing new technologies via its Research and Development program. This expertise is an asset that can eventually be traded in the form of the sale of already-installed operating units or even the provision of services. LIABILITIES: Risk: Cemig's activities are capital-intensive. Naturally, the incorporation

		of generation assets to minimize the impact of climate change may cause the Company to incur indebtedness. The magnitude of this impact is high, due to the company's high level of indebtedness.

C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

Climate-change-related risks and opportunities are rated and prioritized in exposure matrices by the Corporate Risk Monitoring Committee and presented to the Executive Board. These risk and opportunity assessments are therefore presented to senior management, who use them in drafting the Company's Strategic Planning. Once Cemig's strategy is defined and approved by the Executive Board, the other boards plan their activities. The Strategic Planning process is conducted by the Board of Directors, with the participation of the Executive Board.

Besides that, in 2019, Cemig's Sustainability Plan was developed in an integrated manner, with the engagement of several areas of the Company. Based on information obtained from internal and external analyses, the 7 most relevant themes were defined and prioritized. One of them is natural capital and climate change management. The 7 themes are broken down into 31 subthemes, which make up the Materiality Matrix of Cemig's Sustainability Plan. For monitoring, measurement and analysis of the results of Cemig's Sustainability Plan, around 50 indicators related to the topic, 5 of which relate to climate change, are being defined. Their performance will be assessed at the end of each year against the previous year, in addition to monitoring implementing and carrying out the initiatives.

Aspects of climate change that have influenced Cemig's strategy:
Development of low-carbon businesses: Cemig has identified business opportunities and opportunities for obtaining market advantages from its low-carbon energy matrix, which are primarily aimed at i) implementing and renovating renewable source plants where Cemig already has expertise in, and ii) investment in new energy sources.
Regulatory changes: Cemig identifies regulatory risks related to climate change, which are seriously considered in the Company's strategic decision-making. In particular, it acknowledges the commitments attributed to the energy sector in Brazil's Nationally Determined Contribution (NDC) and manages the associated risks through participation in business associations, and monitoring international negotiations and their developments at the national level. Cemig performs environmental due diligence for the acquisition of new assets (carbon risk assessment), to assess the possible financial impact of the increase in its GHG emissions in this asset, given the possibility of internalizing the costs of emissions as a result of the new regulations.
Need to mitigate climate change: Despite already having low GHG emissions intensity, Cemig strives to reduce its emissions, including by laying down goals to decrease emissions, power consumption, and electricity losses, taking into account the commitments in the Brazilian NDC for the energy sector. In addition, the use of an internal price for carbon in investment assessments for fossil fuel-based ventures is in line with global trends for using carbon pricing instruments as a mechanism to promote climate change mitigation.

Need to adapt to climate change: Cemig has a generating complex with low GHG emissions, as it is predominantly hydraulic, but it is subject to the consequences of climate change. Thus, it invests in improving the systems for forecasting climatic events, boosting the infrastructure of its plants, transmission lines, and distribution networks to deal with the consequences of these events and improving the forecast of water availability in its generating complex. Also, it has been seeking to diversify its electrical matrix through the creation of Cemig SIM, a wholly owned subsidiary focused on serving the distributed generation market.

In the short term (up to five years): Cemig invests in state-of-the-art techniques and equipment that allow better quality of forecasting intensity and location of storms. In addition, Cemig defined two tCO2e emission targets in 2018. The first consists of an absolute target based on a combination of scope 1 and 2 emissions, while the second is an intensity target for scope 2 based on emissions from total losses in the transmission and distribution of electricity.
In the long term (over ten years): the need to consolidate low carbon energy matrixes has guided R&D projects, which may be implemented by Cemig on a large scale in the future. The climate change scenario opens up new business opportunities for the Company, with expectations of high demand in the long run. Cemig has Cemig SIM, which works in the development and enablement of technological solutions that foster the efficient use of energy. In addition, in its investment decisions, Cemig has taken into account the expectation of a progressive increase in the ambition for nationally determined contributions to the Paris Agreement, which, for Brazil, should be reflected in stricter emission reduction targets associated with post-2025 energy.
The maintenance of a predominantly renewable matrix and the assessment of carbon risk allow Cemig to anticipate the risks associated with the increased cost of electricity generation. Also, the development of new technologies, especially for power generation from solar sources, places Cemig at the forefront of the electricity sector, allowing the incorporation of new technologies in its matrix and the diversification of its businesses.

More substantial strategic decisions made by Cemig, influenced by business opportunities, leveraged by climate change**:**
· Actions that minimize physical risks arising from extreme weather events:
o Cemig's performance as a trader of renewable (wind and solar) energies, as seen by participation in the Incentivized Solar and Wind Energy Purchase Auction. In the 30th New Energy Public Tender, held on 10/Dec/2019, 6,416.5 GWh were acquired in contracts, with supply beginning in January/2025 and lasting for 20 years.
· Actions that increase low-carbon business development opportunities:
o Cemig is working to create its own certification, the “Cemig REC Seal”. It meets international standards, such as the GHP Protocol and CDP, and ensures that the Company's energy is renewable, which is done through its own controls and a methodology proposed by a specialized consultancy. With this certificate, companies can guarantee that the energy they consume comes from renewable sources.
o In October 2019, Cemig consolidated its role in the distributed generation business through Cemig SIM, a merger of the former Cemig Geração Distribuidora S.A. - Cemig GD and Efficientia Serviços. To serve and expand its base of approximately 2,000 customers, Cemig SIM acquired, in 2020, a 49% interest in seven special purpose companies (SPE), geared to DG using a photovoltaic solar source.

o Following a Digitization, Decarbonization, and Decentralization based strategy, Cemig has explored opportunities and challenges of the new business models in the segment. In 2020, the projects approved in the Cemig 4.0 Bid Notice continued to receive financial support.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Both absolute and intensity targets

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Year target was set

2018

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based)

Base year

2017

Covered emissions in base year (metric tons CO2e)

713,262

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

100

Target year

2022

Targeted reduction from base year (%)

53

Covered emissions in target year (metric tons CO2e) [auto-calculated]

335,233.14

Covered emissions in reporting year (metric tons CO2e)

459,502.8

% of target achieved [auto-calculated]

67.1269384036

Target status in reporting year

Underway

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Target ambition

Please explain (including target coverage)

Cemig defined two tCO2 emission targets in 2018. One is the absolute target based on a combination of scopes 1 and 2 emissions.
As a reference, target year 2022 and base year 2017 were set for total emissions. For scope 1 emissions, we have adopted the following criterion: maintain the SF6 emission percentage at most at 0.66%,and reduce by 10% the mobile source emissions in relation to the 2017 figure.

Regarding scope 2 emissions, the following criterion was set: to maintain electric energy consumption at 41,334 MWh (2017 amount) and to have 12.56% in total losses in 2020, 11.53% in 2021 and 11.24% in 2022.
Scope 1 emissions in 2020 were: 7,928 tCO2e from the fleet of vehicles, boats and aircrafts; 3,262 tCO2e from fugitive SF6 gas emissions from electrical equipment and fugitive emissions from natural gas distribution and CO2 consumption in fire extinguishers; 198 tCO2e from stationary combustion (diesel in generators and natural gas from stationary sources); 31 tCO2e from agricultural emissions and land use change, totalling 11,419 tCO2e.

Cemig's scope 2 emissions in 2020 reached a total of 448,083 tCO2e. Of the total Scope 2 emissions in 2020, 2,386 tCO2e resulted from energy consumption and 445,697 tCO2e (99.5%), resulted from electrical losses in the Transmission and Distribution systems. Also, in 2020, total losses in distribution indicator (IPTD) were of 12.56% against the total energy injected into the distribution system, the figure adopted by Cemig in that year.

By combining Scope 1 and 2 emissions, 2020 showed a total of 459,502.8 tCO2e emissions, a 29% reduction against 2019.

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

Int 1

Year target was set

2018

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 2 (location-based)

Intensity metric

Other, please specify

IPTD

Base year

2019

Intensity figure in base year (metric tons CO2e per unit of activity)

0.00918

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

100

Target year

2020

Targeted reduction from base year (%)

15.57

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

0.007750674

% change anticipated in absolute Scope 1+2 emissions

-25.13

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year (metric tons CO2e per unit of activity)

0.007750674

% of target achieved [auto-calculated]

100

Target status in reporting year

Underway

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Target ambition

Please explain (including target coverage)

In 2018, Cemig set an internal intensity target for scope 2, based on emissions from total losses in the transmission and distribution of electricity. The following criterion was determined: for each year, to maintain electric energy consumption at MWh 41,334 MWh (the same amount as 2017) and to have 13.57% in total losses in 2019, 12.56% in 2020, 11.53% in 2021 and 11.24% in 2022.

The 2020 result met the internal goal set (12.56%), as shown by the total loss indicator (IPTD), which gages the ration between total energy input into the distribution system and the energy consumed. Total losses in 2020 was 6,545,111 MWh, which amounts to 12.56%. That is, the realizable value was equivalent to the internal goal set by Cemig.

Of the total Scope 2 emissions in 2020, 0.5% resulted from energy consumption (2,386 tCO2e) and 99.4% (448,083 tCO2e) resulted from total electrical losses.

It is worth mentioning that Scope 2 is strongly influenced by the SIN emission factor, which showed a 21.55% decrease compared to 2019, going from 0.0750 tCO2e / MWh to 0.0617 tCO2e / MWh. Cemig's scope 2 emissions in the year 2020 totalled 448,083 tCO2e, amounting to a 25.13% decrease in relation to the previous year (in 2019, 598,518 tCO2e).

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number

Oth 1

Year target was set

2018

Target coverage

Company-wide

Target type: absolute or intensity

Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

Resource consumption or efficiency

Other, please specify

Having a maximum SF6 emission percentage of 0.66% of installed SF6 mass

Target denominator (intensity targets only)

Other, please specify

Total amount (kg) of installed SF6

Base year

2020

Figure or percentage in base year

0

Target year

2020

Figure or percentage in target year

0.66

Figure or percentage in reporting year

0.34

% of target achieved [auto-calculated]

51.5151515152

Target status in reporting year

Underway

Is this target part of an emissions target?

Sim, faz parte de uma iniciativa abrangente de eficiência operacional.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

Cemig has a goal, defined in 2018, to keep the percentage of SF6 losses (kg of SF6 issued/total installed amount of SF6) at a maximum of 0.66% until 2022. In 2020 the goal was reached, with the value of SF6 losses at 0.34%, that is 51.5% under the maximum value defined.

Despite the goal being reached in 2018, Cemig needs to keep its management and

performance on the matter, so that this value is maintained, since the SF6 mass in Cemig's electrical system is expected to increase. In the 2020 Annual Sustainability Report, this indicator was being monitored.

In 2018, an SF6 management procedure was developed for Cemig Distribuição (Cemig D) as a way of standardizing fugitive emissions estimates and management of SF6-containing equipment. The company continues to develop SF6 loss mitigation practices, either by eliminating leaks or by eliminating losses in the maintenance process and investing in more efficient equipment.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	5	1,191.18
To be implemented*	3	4,242.92
Implementation commenced*	23	7,159.39
Implemented*	37	16,126.28
Not to be implemented	2	8,005.55

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Fugitive emissions reductions

Other, please specify

SF6 escaping

Estimated annual CO2e savings (metric tonnes CO2e)

2,953.51

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

6,600

Investment required (unit currency – as specified in C0.4)

465,165

Payback period

>25 years

Estimated lifetime of the initiative

3-5 years

Comment

In 2018, Cemig set a goal related to the SF6 loss percentage calculated by the kg of SF6 emitted / total quantity of SF6 installed).
The goal was to keep the SF6 annual loss percentage in, at most, 0.66% (the 2018 figure) until 2022.

In 2020, a corporate procedure for managing SF6 emissions was developed.
This procedure, which is in line with good practices, brought in a 40.44% reduction in the 2020 emissions in relation to 2019 (that is, emissions from SF6 escaping decreased from 4,958.54 tCO2e to 2,953.51 tCO2e).

Annual savings were estimated considering the cost of acquisition of three 7m³ SF6 cylinders costing R$ 2,200.00 each, which were not bought thanks to management procedure.

The investment refers to the cost price of the two employees more directly engaged in the procedure, per year
(2 x R$ 232,582.44 = R$ 465,164.88).

Initiative category & Initiative type

Other, please specify
Other, please specify
Distribution Development Plan - Reduction in total losses

Estimated annual CO2e savings (metric tonnes CO2e)

7,404

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Mandatory

Annual monetary savings (unit currency – as specified in C0.4)

77,355,600

Investment required (unit currency – as specified in C0.4)

503,210,000

Payback period

11-15 years

Estimated lifetime of the initiative

3-5 years

Comment

Cemig maintains the Distribution Development Plan - PDD, which consists of undertaking projects linked to the electric power system and associated with the expansion, boosting, and refurbishing of Cemig D assets, such as substations and distribution lines. Through the PDD, Cemig foresees a 560 GWh reduction in total losses (PDD cycle from 2018 to 2022).
The calculation of the estimate for avoided CO2 was made this way: 560GWh/5 = 120GWh x 1,000Mwh/GWh x 0.0617 tCO2e/ MWh = 7,404 tCO2e.

PDD has a budget of 6.4 billion for the current cycle. In 2020, the Company carried out an amount of about R$ 1.273 billion: 503.2 million being investments in expansion and boosting of high voltage, renovation of the high voltage system, boosting of medium and low voltage grids, and renovation of the medium and low voltage grids.

Annual savings were estimated based on the recovered energy per year multiplied by the annual tariff, Green Flag:
120,000,000 kWh x 0.64463 R$/ kWh = R$ 77,355,600.

Initiative category & Initiative type

Energy efficiency in buildings
Lighting

Estimated annual CO2e savings (metric tonnes CO2e)

5,768.77

Scope(s)

Scope 3

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

0

Investment required (unit currency – as specified in C0.4)

48,869,559

Payback period

No payback

Estimated lifetime of the initiative

11-15 years

Comment

The amount invested corresponds to initiatives started and initiatives already in place, related to Cemig's Energy Efficiency Program.
Cemig's Energy Efficiency Program actions that resulted in Company scope 3 emission reduction were:

1. Bosting of APACs - Associations for the Protection and Assistance of Convicts (Lighting);
2. Boosting of Schools (Lighting and Photovoltaic);
3. Boosting of low-income communities (lamp bulbs, refrigerators, showers, installation of solar water heating systems);
4. Boosting of Hospitals (Autoclaves, Lighting, Surgery Lights, Driers and Photovoltaic);
5. Installation of photovoltaic plants;
6. Inauguration of the SESI space for Energetic Efficiency, in Belo Horizonte;
7. Boosting in quilombola's communities (showers, lamp bulbs, refrigerators);
8. Financing of projects selected by Call for Proposals.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	Federal Law 9,991/2000 determines that 1% of the organization's net operating revenue must be directed to R&D financing and energy efficiency programs. Thus, Cemig created Energia Inteligente (EI), a program focused on energy efficiency, formed by several multi-annual and socio-environmental projects, which develops energy efficiency actions in low-income communities (in compliance with article 1, item V, of Law 9,991/2000, included by Law 12,212/2010) and in non-profit and philanthropic institutions.
Internal finance mechanisms	The replacement of the vehicle fleet uses resources from the Company's Investment Programs. Cemig has as a directive stating the average manufacture date of vehicles in its fleet must be less than 05 (five) years, the legal depreciation period set by the granting authority. Thus, the Company renews its vehicle fleet on an annual basis.

Dedicated budget for low-carbon product R&D	Cemig's Research and Development (R&D) Program aims to encourage a constant search for innovations and face the technological challenges of the electricity sector. In this context, Law 9,991/2000 lays down that electric energy distribution, generation, and transmission concessionaires and licensees should annually apply part of their net operating revenue to the Electricity Sector Research and Development Program regulated by Aneel. To ensure application of this resource, Cemig periodically publishes bid notices to bring in projects in several lines of action. The following are among the project lines related to climate change: Alternative sources, distributed and decentralized generation; Watershed management and energy planning; Measurement, billing and commercial losses; Environment.
Dedicated budget for other emissions reduction activities	Within the Distributor Development Program (PDD), there is a budget dedicated to the reduction of electrical losses by Cemig in the system and initiatives to reduce emissions by Cemig and the National Electric System.
Internal price on carbon	Cemig assesses the risk of increased carbon emissions in its energy matrix and the financial impact of that increase by carrying out environmental due diligence and sensitivity analyses related to the acquisition of new projects for decision-making on expanding its business.
Other Distributed Generation	In 2012, Aneel Normative Resolution 482/2012 came into force, which lays down the general conditions for the access of distributed micro-generation and mini generation to electricity distribution systems via electric energy compensation modalities. As a result, the Brazilian consumer is now able to generate their own electricity from renewable sources and supply the surplus to the power grid of their location. These are innovations that combine financial savings, socio-environmental awareness and self-sustainability. In general, the presence of small generators close to loads can provide several benefits for the power system and utility companies, among which the following stand out: 1. The pushing back of investments in expansion of distribution and transmission systems; 2. Low environmental impact; 3. Improvement of the mains voltage level during heavy load periods; 4. Increasing the energy efficiency of the source by reducing losses in electricity production and transmission; 5. Energy matrix diversification; and 6. Favouring the creation of new business models applicable to the electricity sector. Cemig, a forerunner in the distributed generation process and aligned with the development of technology, connected the first electric power

	micro-generation unit in Brazil in September 2012, the same year that ANEEL established the Electricity Offset System. Since then, Cemig has been leading the market for distributed generation connections in the country. In the period between the publication of Resolution 482, in 2012, and December 2020, 68,435 generating units have already been connected by the Company, 68,283 (99.8%) of which are photovoltaic solar sources, reaching a total installed capacity of 839.4 MW with Distributed Generation. In the domestic scenario, the connections made by Cemig amount to 17.7% of all distributed generation connections in Brazil, and the 839.4 MW installed by Cemig represent 17.5% of the total 4,792.7 MW installed in the Brazilian territory. It is important to stress the rapid evolution of this market and the significant increase in demand for this solution. In 2020, 34,298 new installations were carried out by the Company, which practically doubled the total number of utility connections in Cemig's concession area in just one year. This number represents an increase of 201% against the total installations.
Other RECs	Cemig has been working with Renewable Energy Certificates (RECs), having booked in the GHG Inventory of 2020 the RECs issued this year. RECs aim at proving that the energy comes from renewable sources (hydropower, wind, photovoltaic, and biomass) and allow for the bookkeeping and tracking of the energy ballast. As a way of control, a REC that was sold once cannot be sold again. All certificates receive unique numbers for identification and also include several information, like the renewable source, generation site, generation date, amount traded, and the property it was attributed to. In general, each REC amounts to 1 MWh. Cemig made an investment of R$ 50,000.00 in 2020, with operational costs of I-REC, having issued the certification for one customer in the same year. Besides the I-REC, Cemig developed its own renewable energy certificate, CEMIG REC. It meets international standards, such as the GHP Protocol and CDP, and ensures that the Company's energy is renewable, which is done through its own controls and a methodology proposed by a specialized consultancy. With this certificate companies can guarantee that the energy they consume comes from renewable sources. CEMIG REC begun in 2020 as a pilot project, without costs, and currently it has issued certificates to four customers. For upcoming years, Cemig foresees investments with advertising to expand the number of certificates issued.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

Generation of renewable source energy:

100% of Cemig's nameplate capacity comes from renewable sources. By generating renewable energy, Cemig replaces energy generation from fossil fuels.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

Internal classification

% revenue from low carbon product(s) in the reporting year

32.86

Comment

Generation of renewable source energy:
1 - This initiative allows the reduction of Scope 2 of consumers who purchase energy directly from Cemig via the Free Energy Market;
2 - By injecting renewable energy into the National Electric System, Cemig promotes a reduction in the emission factor of that system, benefiting all energy consumers connected to the grid. In 2020, 11,644.6 GWh of energy were generated from renewable sources (hydraulic + wind + solar, considering only plants that Cemig has operational control).
3 - It is estimated that generation of renewable energy in 2020 avoided emission of 718,474.7 tCO2;
4 - It was assumed that renewable energy generation by Cemig avoided the generation from thermal sources in the National Interconnected System grid. To calculate emission reductions, the National Electric System (SIN) emission factor for the year 2020 (0.0617 tCO2/MWh) was used, calculated for GHG inventories by MCTIC (Ministry of Science,

Technology, Innovations and Communications), multiplied by power generated from renewable sources (11,644.6 GWh).

Level of aggregation

Group of products

Description of product/Group of products

Distributed generation services

Cemig SIM was launched in 2019 to operate in the shared energy market through distributed generation based on a new model of partnerships, aiming at participating in new photovoltaic solar generation projects.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

Internal classification

% revenue from low carbon product(s) in the reporting year

100

Comment

Cemig Smart Energy Solutions - Cemig SIM
1- This initiative allows reduction of third party Scope 2, as it reduces the electricity consumption of the National Electric System of its clients;
2 - This type of generation allows consumers to produce their own energy and, when hiring Cemig SIM, they begin to obtain energy credits originating from the Company's solar farms;
3 - Cemig SIM aims to expand its installed capacity to up to 142 MW by 2021;
4 - In 2020, the energy generated and offset to Cemig SIM customers reached an amount of 35.9 GWh, which corresponds to 2,660 tons of CO2 that were not emitted.

Level of aggregation

Product

Description of product/Group of products

Natural gas:

Gasmig, a Cemig subsidiary, is an exclusive piped natural gas distributor in all territory of Minas Gerais.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

Internal classification

% revenue from low carbon product(s) in the reporting year

7.97

Comment

Natural gas - Gasmig

1 - This initiative allows the reduction of Scope 1 of third parties, since it allows its customers to consume fossil fuel with a lower GHG emission factor;

2 - Gasmig investments in 2019 amounted to R$ 50.2 million in assets, mainly in the expansion of its Natural Gas Distribution Networks (RDGNs) in the State of Minas Gerais;

3 - Gasmig monitors the amount of natural gas supplied to the sectors it serves (residential, commercial, industrial, and vehicular), the Company having sold 945,726,509 m³ of gas in 2020. Due to an enhanced performance in the residential segment, its customer base increased by 18.18%, from 51,966 in 2019, to 61,414 consumer units in 2020;

4 - In 2020, consumption of natural gas distributed by Gasmig avoided emission of 346,574 tCO2e.;

5- The emission reduction estimate was made based on the assumption that, in the absence of natural gas distribution, the industry and thermal plants would consume fuel oil (which corresponded to 92.6% of the natural gas consumed in 2020), vehicles would consume gasoline (3.1%), commercial, residential use would use liquefied petroleum gas - LPG (1.1%), and general use and cogeneration would use diesel oil (3.2%).

Using the emission factors, the lower calorific powers, and densities of the GHG Protocol Brazil, emissions with natural gas (real scenario) and emissions of fuel oil, gasoline, LPG, and diesel oil (baseline scenario) were calculated. By subtracting actual scenario emissions from the baseline scenario, the avoided emissions were defined.

C-EU4.6

(C-EU4.6) Describe your organization’s efforts to reduce methane emissions from your activities.

Cemig does not produce significant methane emissions in its electricity generation processes, since the emission of methane in hydroelectric plants is irrelevant, as has been pointed out in the specialized literature. Cemig's total CH4 emissions in 2020 were equivalent to 328.37 tCO2e, which amount to only 2.88% of total Scope 1 emissions.

However, Cemig manages the potential risk of leakage in its natural gas distribution operations and, therefore, the emission of methane, the main component of the gas. To identify possible natural gas leaks and reduce the volume of fugitive gas - considered a technical loss in the

distribution operation - Gasmig monitors the network pressure remotely using data loggers. In addition, natural gas is artificially odorized to facilitate the identification of leaks by the local population and the Fire Department. Gasmig has a 24-hour call center so that leak detection can be reported.

Gasmig has a cathodic protection system associated with the external polyethylene coating structure, which offers mechanical and anticorrosive protection for the piping. By preserving the integrity of its gas pipelines, the Company is making efforts to reduce methane emissions from its activities.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

48,849

Comment

The historical base year chosen is referenced due to the year set as the total energy loss reduction goal (scope 2) by the Company in 2018.

Scope 2 (location-based)

Base year start

January 1, 2017

Base year end

December 31, 2017

Base year emissions (metric tons CO2e)

664,413

Comment

For Scope 2, the year 2017 was used, as it is defined by the regulatory agent (Aneel) for a new total power loss reduction indicator cycle.

Scope 2 (market-based)

Base year start

Base year end

Base year emissions (metric tons CO2e)

0

Comment

Market-based approach is not used by the Company.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

Brazil GHG Protocol Programme
IPCC Guidelines for National Greenhouse Gas Inventories, 2006
ISO 14064-1
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

11,419.36

Comment

The reduction in Scope 1 emissions is mainly due to the decommissioning of Thermoelectric Plant Igarapé and amounted to a reduction of approximately 37,210.91 tCO2e that were generated due to the consumption of fuel oil.

Emissions from mobile combustion became the most representative in Scope 1, but showed a reduction of 12.57% in comparison with 2019, totalling 7,927.83 tCO2e. Fugitive emissions also showed a reduction of 37.74%, totalling 3,262.22 tCO2e.

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We have no operations where we are able to access electricity supplier emission factors or residual emissions factors and are unable to report a Scope 2, market-based figure

Comment

For companies in the electric industry that have generation and distribution businesses, like Cemig, it is not possible to buy energy from other suppliers; so, it is not possible to book emissions based on the market.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

448,083.41

Comment

For companies in the electric industry that have generation and distribution businesses, like Cemig, it is not possible to buy energy from other suppliers; so, it is not possible to book emissions based on the market.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source

Fugitive emissions of cooling gases

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

No emissions from this source

Relevance of market-based Scope 2 emissions from this source (if applicable)

No emissions excluded

Explain why this source is excluded

It was not possible to obtain data with good traceability.

Source

Emissions from SF6 discharge in Generation

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

No emissions from this source

Relevance of market-based Scope 2 emissions from this source (if applicable)

No emissions excluded

Explain why this source is excluded

It was not possible to obtain data with good traceability, only for Cemig's Generation. In the year 2018, emissions from escaping SF6 reached a total of 856 tCO2e; in 2019, 1,087 tCO2e. Making an approximation for the year 2020 by considering only emissions excluded from Cemig Generation, the percentage is around 2.2%, that is, non-relevant.

C6.5

(C6.5) Account for your organization’s gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO2e

43.45

Emissions calculation methodology

Cemig's GHG emissions inventory was prepared using CLIMAS, a calculation software developed by the specialized consulting company WayCarbon, which has a database with the most current emission factors available for each type of source (for example, Brazilian Program GHG Protocol for Brazil and, when not available, internationally accepted references such as GHG Protocol, IPCC, EPA and DEFRA).
In general, GHG emissions and removals are calculated for each source individually using to the following formula:
Emission = Activity_Data * Emission_Factor * Global_Warming_Potential.
Emission factors are based mainly on the following references: IPCC (2006), Brazilian

GHG Protocol Program (2020), National Energy Balance (2020) and Ministry of Science, Technology, Innovations and Communications (2020).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

N/A

Capital goods

Evaluation status

Not relevant, explanation provided

Please explain

In 2017, in order to restore the Company's financial balance, Cemig initiated a divestment program. The objective of the program is to set an asset sale process following priority criteria:
a) assets with greater liquidity;
b) assets that bring no short-term return; and
c) non-strategic assets or assets with little relevant interests.
In this divestment context, emissions linked to the acquisition of capital goods were not relevant for Cemig in 2020.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Not relevant, explanation provided

Please explain

Emissions due to losses in the transmission and distribution systems for electricity produced by Cemig were accounted for in Scope 2.
In late 2019, Thermoelectric Plant Igarapé was decommissioned; therefore, in 2020, there was no shipment of fossil fuel (oil) from the refineries to the plant.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

808.04

Emissions calculation methodology

Cemig's GHG emissions inventory was prepared using CLIMAS, a calculation software developed by the specialized consulting company WayCarbon, which has a database with the most current emission factors available for each type of source (for example, Brazilian Program GHG Protocol for Brazil and, when not available, internationally accepted references such as GHG Protocol, IPCC, EPA and DEFRA).

In general, GHG emissions and removals are calculated for each source individually using to the following formula:
Emission = Activity_Data * Emission_Factor * Global_Warming_Potential.
Emission factors are based mainly on the following references: IPCC (2006), Brazilian GHG Protocol Program (2020), National Energy Balance (2020) and Ministry of Science, Technology, Innovations and Communications (2020).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

N/A

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

1,004.05

Emissions calculation methodology

Cemig's GHG emissions inventory was prepared using CLIMAS, a calculation software developed by the specialized consulting company WayCarbon, which has a database with the most current emission factors available for each type of source (for example, Brazilian Program GHG Protocol for Brazil and, when not available, internationally accepted references such as GHG Protocol, IPCC, EPA and DEFRA).
In general, GHG emissions and removals are calculated for each source individually using to the following formula:
Emission = Activity_Data * Emission_Factor * Global_Warming_Potential.
Emission factors are based mainly on the following references: IPCC (2006), Brazilian GHG Protocol Program (2020), National Energy Balance (2020) and Ministry of Science, Technology, Innovations and Communications (2020).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

N/A

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

98.83

Emissions calculation methodology

Cemig's GHG emissions inventory was prepared using CLIMAS, a calculation software developed by the specialized consulting company WayCarbon, which has a database with the most current emission factors available for each type of source (for example, Brazilian Program GHG Protocol for Brazil and, when not available, internationally accepted references such as GHG Protocol, IPCC, EPA and DEFRA).
In general, GHG emissions and removals are calculated for each source individually using to the following formula:
Emission = Activity_Data * Emission_Factor * Global_Warming_Potential.
Emission factors are based mainly on the following references: IPCC (2006), Brazilian GHG Protocol Program (2020), National Energy Balance (2020) and Ministry of Science, Technology, Innovations and Communications (2020).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

N/A

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

173.95

Emissions calculation methodology

Cemig's GHG emissions inventory was prepared using CLIMAS, a calculation software developed by the specialized consulting company WayCarbon, which has a database with the most current emission factors available for each type of source (for example, Brazilian Program GHG Protocol for Brazil and, when not available, internationally accepted references such as GHG Protocol, IPCC, EPA and DEFRA).
In general, GHG emissions and removals are calculated for each source individually using to the following formula:
Emission = Activity_Data * Emission_Factor * Global_Warming_Potential.
Emission factors are based mainly on the following references: IPCC (2006), Brazilian GHG Protocol Program (2020), National Energy Balance (2020) and Ministry of Science, Technology, Innovations and Communications (2020).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

N/A

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

Cemig does not have leased assets upstream. Thus, this source is not relevant for Cemig.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

20,989.83

Emissions calculation methodology

Cemig's GHG emissions inventory was prepared using CLIMAS, a calculation software developed by the specialized consulting company WayCarbon, which has a database with the most current emission factors available for each type of source (for example, Brazilian Program GHG Protocol for Brazil and, when not available, internationally accepted references such as GHG Protocol, IPCC, EPA and DEFRA).
In general, GHG emissions and removals are calculated for each source individually using to the following formula:
Emission = Activity_Data * Emission_Factor * Global_Warming_Potential.
Emission factors are based mainly on the following references: IPCC (2006), Brazilian GHG Protocol Program (2020), National Energy Balance (2020) and Ministry of Science, Technology, Innovations and Communications (2020).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

N/A

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

The product sold by Cemig (electricity) is not processed as an intermediate product for producing final consumption assets; electricity is an input in production processes, not an intermediate good. Thus, this emission source does not apply to Cemig.

Use of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

5,223,549.59

Emissions calculation methodology

Cemig's GHG emissions inventory was prepared using CLIMAS, a calculation software developed by the specialized consulting company WayCarbon, which has a database with the most current emission factors available for each type of source (for example, Brazilian Program GHG Protocol for Brazil and, when not available, internationally accepted references such as GHG Protocol, IPCC, EPA and DEFRA).
In general, GHG emissions and removals are calculated for each source individually using to the following formula:
Emission = Activity_Data * Emission_Factor * Global_Warming_Potential.
Emission factors are based mainly on the following references: IPCC (2006), Brazilian GHG Protocol Program (2020), National Energy Balance (2020) and Ministry of Science, Technology, Innovations and Communications (2020).

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

N/A

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Please explain

The product sold by Cemig (electricity) has no end-of-life treatment, as it does not produce waste to be treated or disposed of. So, this source does not apply to Cemig.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

Cemig does not lease goods. So, this emission source does not apply to the Company.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

Cemig has no franchises. So, this emission source does not apply to Company.

Investments

Evaluation status

Not relevant, explanation provided

Please explain

Investments made by Cemig do not imply in emission increase. So, this emission source does not apply to the Company.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Please explain

No other relevant source was found upstream.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Please explain

No other relevant source was found downstream.

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	1,373.8	Direct CO2 emissions (Scope 1) from the use of renewable biomass energy. In preparing the Company's GHG inventory, the definition of renewable biomass adopted by the Executive Committee of the Clean Development Mechanism of the United Nations Framework Convention on Climate Change (EB 23, Attachment 18) was adopted. Emissions of this kind do not contribute to long-term increase in the concentration of CO2 in the atmosphere.

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.000018214

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

459,502.8

Metric denominator

unit total revenue

Metric denominator: Unit total

25,227,625,000

Scope 2 figure used

Location-based

% change from previous year

28.9

Direction of change

Decreased

Reason for change

When compared to the previous year of 2019, there is a reduction in Scope 1 and 2 emissions of, respectively, 78.01% and 25.13%.

The reduction in Scope 1 emissions in 2020 compared to 2019 is mainly associated with the decommissioning of Thermoelectric Plant Igarapé carried out at the end of 2019. Igarapé was responsible for the emission of approximately 37,000 tCO2e in 2019.

Cemig's initiative related to the reduction of emissions from SF6 escaping, of Scope 1 (shown in question C4.3b), contributed with 5% of the total reduction of emissions in that scope. Emissions from SF6 escaping decreased from 4,958.54 tCO2e in 2019 to 2,953.51 tCO2e in 2020.

In its turn, the variation in Scope 2 is directly due to the reduction in T&D Losses (a reduction of approximately 150,000 tCO2e).
Losses reduction is related with the Distribution Development Plan (PDD), which, by means of actions of expansion and reinforcement in high voltage lines, reform of the high voltage system, reinforcement of medium and low voltage networks and

refurbishing of medium and low voltage networks, reduced losses in 2020: The losses index IPTD went from 13.57% in 2019 to 12.56% in 2020, that is, losses decreased and, consequently, the emissions.

There was also a 17.73% decrease in the grid average emission factor against the previous year (from 0.0750 tCO2e/MWh, in 2019, to 0.0617 tCO2e/MWH, in 2020).

Also, Cemig's net operating revenues decreased 1% in that period.

Intensity figure

0.039460433

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

459,502.8

Metric denominator

megawatt hour generated (MWh)

Metric denominator: Unit total

11,644,646.49

Scope 2 figure used

Location-based

% change from previous year

49.85

Direction of change

Decreased

Reason for change

When compared to the previous year of 2019, there is a reduction in Scope 1 and 2 emissions of, respectively, 78.01% and 25.13%.

The reduction in Scope 1 emissions in 2020 compared to 2019 is mainly associated with the decommissioning of Thermoelectric Plant Igarapé carried out at the end of 2019. Igarapé was responsible for the emission of approximately 37,000 tCO2e in 2019.

Cemig's initiative related to the reduction of emissions from SF6 escaping, of Scope 1 (shown in question C4.3b), contributed with 5% of the total reduction of emissions in that scope. Emissions from SF6 escaping decreased from 4,958.54 tCO2e in 2019 to 2,953.51 tCO2e in 2020.

In its turn, the variation in Scope 2 is directly due to the reduction in T&D Losses (a reduction of approximately 150,000 tCO2e).
Losses reduction is related with the Distribution Development Plan (PDD), which, by

means of actions of expansion and reinforcement in high voltage lines, reform of the high voltage system, reinforcement of medium and low voltage networks and refurbishing of medium and low voltage networks, reduced losses in 2020: The losses index IPTD went from 13.57% in 2019 to 12.56% in 2020, that is, losses decreased and, consequently, the emissions.

There was also a 17.73% decrease in the grid average emission factor against the previous year (from 0.0750 tCO2e/MWh, in 2019, to 0.0617 tCO2e/MWH, in 2020).

Also, Cemig's net generation (which includes only power plants that Cemig has Operational Control) increased 41% (from 8,267,149.72 MWh in 2019 to 11,644,646.49 in 2020).

The intensity figure decreased around 50%, from 0.079 (2019 value) to 0.039 (2020 value).

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	7,992.27	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	328.37	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	145.21	IPCC Fourth Assessment Report (AR4 - 100 year)
SF6	2,953.51	IPCC Fourth Assessment Report (AR4 - 100 year)

C-EU7.1b

(C-EU7.1b) Break down your total gross global Scope 1 emissions from electric utilities value chain activities by greenhouse gas type.

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Gross Scope 1 SF6 emissions (metric tons SF6)	Total gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives	6.44	12.09	0.13	3,262.22	Fugitive category emissions derived mainly from SF6 escape in transmission and distribution systems, contribution of that precursor accounting for 90.5% of total emissions in that category.
Combustion (Electric utilities)	8,051.75	0.59	0	8,066.57	Cemig's stationary and mobile combustion emissions, except for Gasmig and Cemig SIM.
Combustion (Gas utilities)	6.21	2.09	0	58.5	Gasmig's stationary and mobile combustion emissions.
Combustion (Other)	1.19	0	0	1.19	Cemig SIM's mobile combustion emissions.
Emissions not elsewhere classified	28.15	0	0	30.88	Farming and Change in Land Use category emissions. 2,73 tCO2eq refer to the use of nitrogenized fertilizers.

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Brazil	11,419.36

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division
By activity

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Cemig GT	1,839.62
Cemig D	9,022.49
GASMIG	360.77
CEMIG SIM	1.19
Camargos	11.22
CEMIG PCH	0.04
Horizontes	0.14
Itutinga	13.05
Leste	12.51
Oeste	12.15
Parajuru - Eólica	18.01
Rosal	7.04
Sá Carvalho	1.37
Salto Grande	9.21
Sul	16.59
Três Marias	11.97
Volta do Rio - Eólica	55.29
CENTROESTE	26.71

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO2e)
Stationary Combustion	198.43
Mobile Combustion	7,927.83
Fugitive Emissions	3,262.22
Agriculture and Change in Land Use	30.88

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Comment
Electric utility activities	11,419.36	N/A

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	Energy produced by Cemig IN 2020 came 100% from renewable sources due to the decommissioning of Thermoelectric Plant Igarapé (responsible for the emission of approximately 37,000 tCO2e in the previous year) that happened in late 2019. Energy consumed by Cemig comes from the grid; thus, it cannot be accounted as renewable energy purchase.
Other emissions reduction activities	18.28	Decreased	37.2	Cemig has projects in the Energy Efficiency Program, that consist in reductions in the consumption of electrical energy by end consumers thanks to the replacement of obsolete electrical equipment with a high level of consumption and environmental education initiatives. This way, the Program stands as a relevant instrument for reducing GHG emissions in Cemig's value chain. In 2020, these projects avoided emission of over 7 thousand tCO2e. However, there values are not accounted in Cemig's GHG inventory.

				Between 2019 and 2020, CEMIG reduced its emissions from land use (Scope 1). In 2019, that category emitted 49.16 tCO2e. Thus, 49.16 tCO2e – 30.88 tCO2e = 18.28 tCO2e, which corresponds to a 37.2 % reduction.
Divestment	0	No change	0	No divestitures between 2019 and 2020.
Acquisitions	0	No change	0	No acquisitions between 2019 and 2020.
Mergers	0	No change	0	No merges between 2019 and 2020.
Change in output	0	No change	0	No change in the corporate earnings impacting emissions between 2019 and 2020.
Change in methodology	0	No change	0	No change in methodology between 2019 and 2020.
Change in boundary	0	No change	0	No change in limit between 2019 and 2020.
Change in physical operating conditions	0	No change	0	There was no change in physical conditions impacting operation from 2019 to 2020.
Unidentified	0	No change	0	N/A
Other	190,955.13	Decreased	29.4	When compared to the previous year of 2019, there is a reduction in Scope 1 and 2 emissions of, respectively, 78.01% and 25.13%. The reduction in Scope 1 emissions in 2020 compared to 2019 is mainly associated with the decommissioning of Thermoelectric Plant Igarapé carried out at the end of 2019. Igarapé was responsible for the emission of approximately 37,000 tCO2e in 2019. In its turn, the variation in Scope 2 is mainly due to the reduction in T&D Losses (a reduction of approximately 150,000 tCO2e). There was also a 17.73% decrease in the grid average emission factor against the previous year (from 0.0750

				tCO2e/MWh, in 2019, to 0.0617 tCO2e/MWH, in 2020). Finally, the combined reduction of scopes 1 and 2 was 29.4%.

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 55% but less than or equal to 60%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	1,438.4	34,124.46	35,562.86
Consumption of purchased or acquired electricity		0	37,621	37,621
Consumption of self-generated non-fuel renewable energy		0		0
Total energy consumption		1,438.4	71,745.46	73,183.86

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

28,131.12

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

2.63117

Unit

metric tons CO2e per m3

Emissions factor source

GHG Protocol Brazilian Program

Comment

This average emission factor considers factors for mobile and stationary combustion categories.

Fuels (excluding feedstocks)

Petrol

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

4,908.37

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

1.73768

Unit

metric tons CO2e per m3

Emissions factor source

GHG Protocol Brazilian Program

Comment

This emission factor was used to calculate mobile combustion emissions (road transportation)

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

5.78

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

3.06076

Unit

metric tons CO2e per metric ton

Emissions factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Comment

This emission factor was used to calculate mobile combustion emissions.

Fuels (excluding feedstocks)

Natural Gas

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

67.37

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

0.002

Unit

metric tons CO2e per m3

Emissions factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Comment

This emission factor was used to calculate stationary combustion emissions.

Fuels (excluding feedstocks)

Other, please specify

Gás natural veicular

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

250.47

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

0.00211

Unit

metric tons CO2e per m3

Emissions factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Comment

This emission factor was used to calculate mobile combustion emissions (road transportation).

Fuels (excluding feedstocks)

Jet Kerosene

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

761.35

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

2.54081

Unit

metric tons CO2e per m3

Emissions factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Comment

This emission factor was used to calculate mobile combustion emissions (air transportation).

Fuels (excluding feedstocks)

Fuel Oil Number 1

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

3.14428

Unit

metric tons CO2e per metric ton

Emissions factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Comment

This emission factor was used to calculate stationary combustion emissions.

Fuels (excluding feedstocks)

Other, please specify

Etanol hidratado

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1,438.4

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

Emission factor

0.01342

Unit

metric tons CO2e per m3

Emissions factor source

GHG Protocol Brazilian Program

Comment

This emission factor was used to calculate mobile combustion emissions (road transportation).

C-EU8.2d

(C-EU8.2d) For your electric utility activities, provide a breakdown of your total power plant capacity, generation, and related emissions during the reporting year by source.

Coal – hard

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

N/A

Lignite

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

N/A

Oil

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

N/A

Gas

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

N/A

Biomass

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

N/A

Waste (non-biomass)

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

N/A

Nuclear

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

N/A

Fossil-fuel plants fitted with CCS

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

N/A

Geothermal

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

N/A

Hydropower

Nameplate capacity (MW)

3,098

Gross electricity generation (GWh)

11,724.59

Net electricity generation (GWh)

11,486.24

Absolute scope 1 emissions (metric tons CO2e)

1,934.9

Scope 1 emissions intensity (metric tons CO2e per GWh)

0.17

Comment

Cemig's net and gross energy generation are only for plants that Cemig has operational control. Emission intensity was calculated by dividing Cemig GT scope 1 emissions from hydropower plants alone (that is, excluding emissions from Parajuru and Volta do Rio windfarms) by the net hydropower plant energy generation.

Wind

Nameplate capacity (MW)

72

Gross electricity generation (GWh)

157.41

Net electricity generation (GWh)

157.3

Absolute scope 1 emissions (metric tons CO2e)

73.3

Scope 1 emissions intensity (metric tons CO2e per GWh)

0.47

Comment

Emission intensity was calculated by dividing Cemig GT scope 1 emissions by Parajuru and Volta do Rio windfarms alone (that is, hydropower emissions were excluded) by the net hydropower plant energy generation.

Solar

Nameplate capacity (MW)

1

Gross electricity generation (GWh)

1.14

Net electricity generation (GWh)

1.11

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Emissions that may be related to operation of Cemig solar plants were bookkept under hydropower sources.

Marine

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

N/A

Other renewable

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

N/A

Other non-renewable

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

N/A

Total

Nameplate capacity (MW)

3,171

Gross electricity generation (GWh)

11,833.41

Net electricity generation (GWh)

11,644.65

Absolute scope 1 emissions (metric tons CO2e)

2,008.2

Scope 1 emissions intensity (metric tons CO2e per GWh)

0.17

Comment

Emission intensity was calculated by dividing CEMIG GT Scope 1 emissions (that is, not including CEMIG D, CEMIG SIM and GASMIG Scope 1 emissions) by total net energy generation. It was considered the net generation only for plants that Cemig has operational control.

C-EU8.4

(C-EU8.4) Does your electric utility organization have a transmission and distribution business?

Yes

C-EU8.4a

(C-EU8.4a) Disclose the following information about your transmission and distribution business.

Country/Region

Brazil

Voltage level

Transmission (high voltage)

Annual load (GWh)

0

Annual energy losses (% of annual load)

0

Scope where emissions from energy losses are accounted for

Scope 2 (location-based)

Emissions from energy losses (metric tons CO2e)

11,399.74

Length of network (km)

4,927

Number of connections

39

Area covered (km2)

567,478

Comment

The number of connections was reported as the number of Transmission grid substations.
Scope 2 emissions presented considered the “Transmission Losses” category for Cemig GT.

Country/Region

Brazil

Voltage level

Distribution (low voltage)

Annual load (GWh)

52,098.69

Annual energy losses (% of annual load)

12.56

Scope where emissions from energy losses are accounted for

Scope 2 (location-based)

Emissions from energy losses (metric tons CO2e)

433,663.39

Length of network (km)

545,706

Number of connections

8,697,006

Area covered (km2)

567,478

Comment

The annual load or system load is the electricity annually input into the distribution network at the threshold points and per generation units.
Losses were calculated by the difference between injected energy and total market requirement (captive + free).
Scope 2 emissions presented considered the “Distribution Losses” category for Cemig D.
Connection number is given by the number of consumers serviced by Cemig D.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description

Other, please specify

Scope 1 emission intensity per produced MWh (CO2e/MWh).

Metric value: 0.00247564

Metric value

0.98

Metric numerator

Direct emissions (Scope 1) - CO2e

Metric denominator (intensity metric only)

Net energy generation measured in MWh

% change from previous year

84

Direction of change

Decreased

Please explain

Direct emission intensity is calculated by dividing Scope 1 emissions by net energy generation (only for power plants that Cemig has operational control).

Also, Cemig's net generation increased 41% (from 8,267,149.72 MWh in 2019 to 11,644,646.49 in 2020).

Besides, Scope 1 emissions decreased 78% in relation to 2019, from 51,939 to 11,419, resulting in decrease in emission intensity (that was, in 2020, 0.00098 tCO2e/MWh or 0.98 CO2e/MWh).

C-EU9.5a

(C-EU9.5a) Break down, by source, your total planned CAPEX in your current CAPEX plan for power generation.

Primary power generation source	CAPEX planned for power generation from this source	Percentage of total CAPEX planned for power generation	End year of CAPEX plan	Comment
Hydropower	711,000,000	13.8	2025	The current CAPEX plan (2021-2025) provides R$ 5.15 billion in investments in Generation and in New Projects in the Generation area. For hydropower energy, it is scheduled an investment of R$ 0.7 billion in Generation until 2025 (14 % of R$ 5.15 billion).
Wind	2,827,500,000	54.9	2025	The current CAPEX plan (2021-2025) provides R$ 5.15 billion in investments in Generation and in New Projects in the Generation area. For wind energy, it is

				scheduled an investment of R$ 2.8 billion in New Projects until 2025 (55 % of R$ 5.15 billion).
Solar	1,613,000,000	31.3	2025	The current CAPEX plan (2021-2025) provides R$ 5.15 billion in investments in Generation and in New Projects in the Generation area. For solar energy, it is scheduled an investment of R$ 1.6 billion in new projects until 2025 (31 % of R$ 5.15 billion).

C-EU9.5b

(C-EU9.5b) Break down your total planned CAPEX in your current CAPEX plan for products and services (e.g. smart grids, digitalization, etc.).

Products and services	Description of product/service	CAPEX planned for product/service	Percentage of total CAPEX planned products and services	End of year CAPEX plan
Other, please specify Capex planned for development of renewable electric energy	The current Capex plan (2021-2025) provides for substantial investments in the Generation business, where 100% of electricity is produced by renewable sources. In 2020, R$ 109 million were invested, and in 2021, expectations are for R$ 559 million. Planned investments also include New Projects. Source: Cemig meeting with Shareholders, available at: https://api.mziq.com/mzfilemanager/v2/d/716a131f-9624-452c-9088-0cd6983c1349/6d07b813-4cad-5105-b0de-fb609bc0b51c?origin=1.	5,151,500,000	23.8	2025
Distributed generation	The current Capex plan (2021-2025) provide for substantial investments in Cemig SIM, a Cemig subsidiary that works with distributed generation. The company was formed with the expectation that 250 MW in installations will be carried out in the next two years. In 2020, R$ 74 million were invested, and in 2021, expectations are for R$ 113 million, which	1,000,000,000	4.6	2025

	potentially can reach 200 million. Source: Cemig meeting with Shareholders, available at: https://api.mziq.com/mzfilemanager/v2/d/716a131f-9624-452c-9088-0cd6983c1349/6d07b813-4cad-5105-b0de-fb609bc0b51c?origin=1.			
Other, please specify Distribution	The current Capex plan (2021-2025) provides for substantial investments in the Distribution business. In 2020, R$ 1,732 million were invested, and in 2021, expectations are for R$ 2,608 million. The investments include improvements in the Electric System (Customer), Electric System (Cemig) and Infrastructure/Others. Source: Cemig meeting with Shareholders, available at: https://api.mziq.com/mzfilemanager/v2/d/716a131f-9624-452c-9088-0cd6983c1349/6d07b813-4cad-5105-b0de-fb609bc0b51c?origin=1.	12,500,000,000	57.7	2025
Other, please specify Transmission	The current Capex plan (2021-2025) provides for substantial investments in the Transmission business. In 2020, R$ 153 million were invested, and in 2021, expectations are for R$ 321 million. Investments also include potential reinforcements and improvements and New Projects. Source: Cemig meeting with Shareholders, available at: https://api.mziq.com/mzfilemanager/v2/d/716a131f-9624-452c-9088-0cd6983c1349/6d07b813-4cad-5105-b0de-fb609bc0b51c?origin=1.	2,000,000,000	9.2	2025
Other, please specify Gas Sales - GASMIG	The current Capex plan (2021-2025) provides for substantial investments in the gas sales business. In 2020, R$ 50 million were invested, and in 2021, expectations are for R$ 92 million. Source: Cemig meeting with Shareholders, available at: https://api.mziq.com/mzfilemanager/v2/d/716a131f-9624-452c-9088-0cd6983c1349/6d07b813-4cad-5105-b0de-fb609bc0b51c?origin=.	1,000,000,000	4.6	2025

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	The development of innovations in products and processes is a fundamental part of Cemig's activities. Cemig annually invests part of its net operating revenue in Research and Development in the electric energy sector. As they are elements that make up the electricity generation process, the topics of alternative sources, generation technologies, distributed generation, smart grids, electric vehicles, energy efficiency, and the best use of traditional energy resources also make up what Cemig considers as energy alternatives. Cemig has a Technology Research & Development (R&D) program in place since the 1990s. In 2020, the company continued with the projects contracted in the Cemig 4.0 Bid Notice, which covered the themes of digitization, decentralization and decarbonization, totaling around 6.8 million invested in these projects last year. The decrease in investments in relation to the previous year is due to the contingency management of funds with a view of ensuring priority actions and essential services, and meeting regulatory restrictions derived from the impacts of the Covid-19 pandemic on the power industry. For the same reason, no new Bid Notice was released in 2020; there was only a new project contracted (included in a 2019 Bid Notice) aimed at the development of innovative solutions for individual notification devices in case of dam emergencies.

C-CO9.6a/C-EU9.6a/C-OG9.6a

(C-CO9.6a/C-EU9.6a/C-OG9.6a) Provide details of your organization's investments in low-carbon R&D for your sector activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Distributed energy resources	Applied research and development	≤20%	1,204,592.7	In 2020 Cemig made a R$ 6,758,149.95 investment in projects collected by Cemig 4.0 Public Notice, which covered the subjects

				of digitizing, decentralization and decarbonization. The R$ 1,204,592.70 amount relates to the "Distributed Energy Resource Management System" project. That project consists in a methodology for systematic integration of Distributed Energy Resources (RED) scattered along Cemig's power network to the Distribution Operation Center (COD), taking into account the relevant technical and operational aspects. The percentage was calculated by adding the total invested in projects in the years 2020 and 2019 by the total invested in the Cemig 4.0 Public Notice in the same years, as follows: [(R$ 1,204,592.70 + R$ 3,756,908.65) / (R$ 6,758,149.95 + R$ 17,483,948.55)] *100 = 20%.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

inventario-gases-efeito-estufa-2020.pdf

Page/ section reference

Page 64

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

inventario-gases-efeito-estufa-2020.pdf

Page/ section reference

Page 64

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category
Scope 3: Purchased goods and services

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Reasonable assurance

Attach the statement

inventario-gases-efeito-estufa-2020.pdf

Page/section reference
Page 64

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Upstream transportation and distribution

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Reasonable assurance

Attach the statement

inventario-gases-efeito-estufa-2020.pdf

Page/section reference

Page 64

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Waste generated in operations

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

inventario-gases-efeito-estufa-2020.pdf

Page/section reference

Page 64

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Business travel

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

inventario-gases-efeito-estufa-2020.pdf

Page/section reference

Page 64

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Employee commuting

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

inventario-gases-efeito-estufa-2020.pdf

Page/section reference

Page 64

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Downstream transportation and distribution

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

inventario-gases-efeito-estufa-2020.pdf

Page/section reference

Page 64

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Use of sold products

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Reasonable assurance

Attach the statement

inventario-gases-efeito-estufa-2020.pdf

Page/section reference

Page 64

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C0. Introduction	Other, please specify General description of the company, reporting year, reporting consolidation method, organizational activities.	Annual independent verification of Cemig's Sustainability Report is based in the best practices laid down in the GRI Standards Principles for Sustainability Reports and the ISAE3000 assurance standard.	Annually, Cemig submits its Sustainability Report to independent verification, to ensure the legitimacy of its content. The audit process comprised (i) the review of disclosures, information, and data present in the preliminary version of the sustainability report; (ii) interviews with strategic collaborators, both to understand the report data and the management processes involved with the material issues; and (ii) review of complementary documentation sent by Cemig to BVC. General company data and the report preparation methodology are provided in Cemig's sustainability report and are, therefore, subject to verification.
C2. Risks and opportunities	Other, please specify Timeframes, kinds of risk	Annual independent verification of Cemig's Sustainability Report is based in the best practices laid down in the GRI Standards Principles for Sustainability Reports and the ISAE3000 assurance standard.	Annually, Cemig submits its Sustainability Report to independent verification, to ensure the legitimacy of its content. The audit process comprised (i) the review of disclosures, information, and data present in the preliminary version of the sustainability report; (ii) interviews with strategic collaborators, both to understand the report data and the management processes involved with the material issues; and (ii) review of complementary documentation sent by Cemig to BVC.

			The chapter on Climate Change of the Sustainability Report provides the timeframes considered by the Company in its risk assessments, together with some examples of identified climate risks.
C3. Business strategy	Renewable energy products	Annual independent verification of Cemig's Sustainability Report is based in the best practices laid down in the GRI Standards Principles for Sustainability Reports and the ISAE3000 assurance standard.	Annually, Cemig submits its Sustainability Report to independent verification, to ensure the legitimacy of its content. The audit process comprised (i) the review of disclosures, information, and data present in the preliminary version of the sustainability report; (ii) interviews with strategic collaborators, both to understand the report data and the management processes involved with the material issues; and (ii) review of complementary documentation sent by Cemig to BVC. In the Sustainability Report, Cemig provides strategic decisions made in 2020, influenced by business opportunities and leveraged by climate change: Those include: o Boosting of Cemig's R&D program, moving forward with projects from the Cemig 4.0 Program. o Development of its own certification, called “Cemig REC”. It meets international standards, such as the GHG Protocol and CDP, and ensures that the company's energy is renewable, through its own controls and the methodology proposed by a specialized consultancy. With this certificate companies can guarantee that the energy they consume comes from renewable sources. o Sale of energy solution projects:

			in a scenario of larger corporate investments in energy efficiency aimed at reducing power consumption and GHG emissions, the Cemig SIM subsidiary may have an increased demand for its services with the implementation of projects for use of lighting with LED, cogeneration, distributed generation, and other energy solution services.
C4. Targets and performance	Other, please specify Progress towards the emissions reduction target	Annual independent verification of Cemig's Greenhouse Gas Emissions Inventory is based on ISO 14064-3.	Annually, Cemig submits its Corporate GHG Inventory for independent verification. The objective of third party verification of the inventory is to obtain an independent statement on its quality and the consistency of the information contained therein, in order to ensure its users an accurate assessment of the emission pattern of the organization's value chain. Progress in relation to emission reduction goals and the justification for such performance are reported in Cemig's Inventory.
C5. Emissions performance	Other, please specify Standards, protocols and methodologies used in the calculating Scope 1 & 2 emissions.	Annual independent verification of Cemig's Greenhouse Gas Emissions Inventory is based on ISO 14064-3.	Annually, Cemig submits its Corporate GHG Inventory for independent verification. The objective of third party verification of the inventory is to obtain an independent statement on its quality and the consistency of the information contained therein, in order to ensure its users an accurate assessment of the emission pattern of the organization's value chain. References and methodology used to prepare the inventory are provided in the report, and thus, submitted to verification.

C7. Emissions breakdown	Year on year change in emissions (Scope 1 and 2)	Annual independent verification of Cemig's Greenhouse Gas Emissions Inventory is based on ISO 14064-3.	Annually, Cemig submits its Corporate GHG Inventory for independent verification. The objective of third party verification of the inventory is to obtain an independent statement on its quality and the consistency of the information contained therein, in order to ensure its users an accurate assessment of the emission pattern of the organization's value chain. In the GHG inventory, Cemig emissions in 2020 are compared to emissions from 2014 to 2019.
C7. Emissions breakdown	Year on year change in emissions (Scope 3)	Annual independent verification of Cemig's Greenhouse Gas Emissions Inventory is based on ISO 14064-3.	Annually, Cemig submits its Corporate GHG Inventory for independent verification. The objective of third party verification of the inventory is to obtain an independent statement on its quality and the consistency of the information contained therein, in order to ensure its users an accurate assessment of the emission pattern of the organization's value chain. In the GHG inventory, Cemig emissions in 2020 are compared to emissions from 2014 to 2019.
C8. Energy	Energy consumption	Annual independent verification of Cemig's Greenhouse Gas Emissions Inventory is based on ISO 14064-3.	Annually, Cemig submits its Corporate GHG Inventory for independent verification. The objective of third party verification of the inventory is to obtain an independent statement on its quality and the consistency of the information contained therein, in order to ensure its users an accurate assessment of the emission pattern of the organization's value chain. Energy consumption data are used in calculating Cemig's GHG

			emissions are, therefore, subject to verification.

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

No, but we anticipate being regulated in the next three years

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

In Brazil there is no mandatory pricing instrument for greenhouse gas emissions. However, Cemig has been preparing to act in accordance with the implementation of a possible instrument by following up on discussions on the subject, including regulatory changes, by participating in the Climate Change and Air Quality Working Group, which is part of FIEMG's Council of Businesspeople for the Environment (CEMA).

Additionally, Cemig has actively participated in the Advisory Committee of PMR Brazil Project, which ended in December 2020 and aimed at discussing the fitness and opportunity of including GHG emission pricing in the package of instruments geared at the deployment of the Climate Change National Policy (PNMC) in the post-2020 period. The study suggests that it is desirable to implement a carbon pricing instrument in Brazil, and that an Emission Trading System would be the most suitable instrument. Faced with a scenario of political uncertainty relating to the current federal government, it is not known whether the carbon pricing agenda will move forward. Cemig monitors the matter in order to prepare for the entry into force of a carbon pricing regulation in the coming years. Since 2019, the company has adopted an internal carbon price to assess the risk of increased GHG emissions in its energy matrix and in due diligence processes related to acquisitions, mergers and implementation of new assets. In 2020, the internal carbon price used as a reference by the Company was US$12.50/tCO2e.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

Yes

C11.2a

(C11.2a) Provide details of the project-based carbon credits originated or purchased by your organization in the reporting period.

Credit origination or credit purchase

Credit origination

Project type

Hydro

Project identification

Cemig has registered several carbon projects called Clean Development Mechanism – CDM for hydropower plants. The projects are at different stages for obtaining a certificate for Certified Emissions Reduction – CER for hydropower plants, which are:
SPE Guanhães (4 PCHs, 44 MW)
http://cdm.unfccc.int/Projects/DB/RINA1280831660.48/view
PCH Cachoeirão 27 MW)
http://cdm.unfccc.int/Projects/DB/RINA1305214649.79/view
PCH Paracambi (25 MW)
http://cdm.unfccc.int/Projects/DB/RINA1392324439.94/view
UHE Santo Antônio (3568 MW)
http://cdm.unfccc.int/Projects/DB/PJR%20CDM1356613142.79/view

In 2020, the organization did not issue any carbon credits for those projects.

Verified to which standard

CDM (Clean Development Mechanism)

Number of credits (metric tonnes CO2e)

0

Number of credits (metric tonnes CO2e): Risk adjusted volume

0

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit origination

Project type

Solar

Project identification

Cemig has registered a carbon project called Clean Development Mechanism – CDM for photovoltaic plants.
Solar Settesolar (3 MW)

http://cdm.unfccc.int/Projects/DB/RWTUV1356098187.07/view

The credit-granting period ended in February 2020 and was not renewed. In 2020, the organization did not issue any carbon credits for that project.

Verified to which standard

CDM (Clean Development Mechanism)

Number of credits (metric tonnes CO2e)

0

Number of credits (metric tonnes CO2e): Risk adjusted volume

0

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations
Drive low-carbon investment
Identify and seize low-carbon opportunities

GHG Scope

Scope 1

Application

By means of Service Instruction IS-56 (“Carbon risk assessment in due diligence operations”), Cemig laid down procedures for analyzing carbon risk in carrying out its due diligences related to the acquisition, merger, and implementation of new assets that use fossil fuels for power generation.

The objective is to assess the impact of greenhouse gas (GHG) emissions on Cemig's businesses, resulting from the purchase of operating assets or in project or construction stages, in addition to the risks and opportunities with regard to climate change and the needs to mitigate its effects on the company.

Actual price(s) used (Currency /metric ton)

68.75

Variance of price(s) used

The internal carbon price used in the analyzes is based on a basket of carbon price values that considers the following parameters: (i) geographical location, based on prices in countries in the same region as Brazil (Latin America) and (ii) a sectoral parameter based on prices practiced by companies in the same sector as Cemig (companies from Brazil and other countries). The estimated value of this new methodology is US$ 12.50/tCO2.

Type of internal carbon price

Shadow price

Impact & implication

When assessing the acquisition, merger, or implementation of projects that use fossil fuels, Cemig carries out internal analyses regarding the carbon risk and its financial impact on the Company. Applying this evaluation criterion for Thermal Plant Igarapé, it was observed that the decommissioning of the plant carried out at the end of 2019 brought to Cemig a benefit of reducing the carbon cost of the company's operations.

Cemig has medium- and long-term guidelines (until 2040) to expand the capacity of solar, wind, and thermal generation using natural gas. At this time, the company is evaluating opportunities for these investments, and the carbon risk assessment defined in Service Instruction (IS-56) "Carbon risk assessment in Due Diligence operations" will be used as a criterion for analysing the viability of the business.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers
Yes, our customers
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

100

% total procurement spend (direct and indirect)

10

% of supplier-related Scope 3 emissions as reported in C6.5

0.4

Rationale for the coverage of your engagement

The transportation and distribution (downstream) category of Cemig's GHG Inventory includes fuel consumption data (alcohol, gasoline, diesel and GNV) used by contractors working for Cemig D.

In the 2020 Inventory, 17 contractors (amounting to 100% of Cemig D's current contracts) contributed this data voluntarily.

There is no cost to Cemig for this type of engagement (since the request is friendly and the report is voluntary). However, the company believes that it is a worthwhile effort to verify climate issues with suppliers.

Impact of engagement, including measures of success

Currently, Cemig monitors both the data reported by the contractors (fuel consumption) and the number of contractors engaged in collaborating with data for the GHG Inventory.
It is expected that this monitoring will be carried out soon with a greater degree of proximity, encouraging best practices in climate change management.

The amount of direct and indirect expenditure (10%) corresponds to an estimate of the time invested in preparing and verifying suppliers' emissions. Cemig is developing an environmental performance indicator for suppliers, which includes, among other aspects, the management of emissions.

Comment

Calculation of the percentage of Scope 3 Emissions: 20,989.83 (tCO2e) / 5,246,667.72 (tCO2e) = 0.40%.

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Education/information sharing

Details of engagement

Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

% of customers by number

1

% of customer - related Scope 3 emissions as reported in C6.5

0.14

Please explain the rationale for selecting this group of customers and scope of engagement

Cemig develops several actions to raise awareness of the use of energy in order to combat waste through the Energy Efficiency Program (PEE).
Together with its residential, service and commercial customers, the Company promotes several awareness campaigns on the efficient use of electricity. These campaigns are run on various media - television, radio, newspaper, the Internet, social networks, and on energy bills sent to customers.

The Projects are selected through a Public Call process carried out annually with resources segregated by grade (residential, industrial, commerce and services, public authorities, public services, and public lighting). Approved proposals are funded with resources from the Program.
The residual funds of the public call process are used to finance projects prepared directly by Cemig. In these projects, Cemig seeks to meet the universalization criterion; that is, it plans to serve all public schools in the concession area in the next cycle, as well as all municipal daycare centers and public hospitals.

The 1% value corresponds to the number of Cemig customers that were directly impacted (received direct actions) by the Program. In the case, with a total of 8,698,095 consumers, 86,981 consumers (or 1% of the total) were engaged. The 0.14% amount corresponds to emissions avoided by the PEE (7,332 tCO2e), divided by total Scope 3 emissions (5,246,668 tCO2e).

Impact of engagement, including measures of success

The impact of this engagement strategy is an increase in the rational use of energy by Company customers. The measurement of results is carried out through positive feedbacks received from customers, reporting the savings obtained from information received on the rational use, and environmental benefits of that initiative.

The tangibility of this strategy is measured by energy savings of Cemig's Energy Efficiency Program customers. In 2020, about R$ 52.3 million were invested in projects in the entire Cemig D concession area, and 36.6 million were made available to the new public call process for the composition of the 2021 project portfolio.

Energy efficiency actions include low-income families, hospitals, non-profit entities, rural residents, educational institutions, and public bodies, achieving savings of 82,386 Mwh in 2020.

Type of engagement

Collaboration & innovation

Details of engagement

Other, please specify

Engagement through Cemig SIM

% of customers by number

100

% of customer - related Scope 3 emissions as reported in C6.5

0

Please explain the rationale for selecting this group of customers and scope of engagement

Cemig SIM attitude is always geared to the matter of Sustainability through energy efficiency, and the consequent reduction of emissions. Thus, all Cemig Sim customers (100% of them) are engaged in this way. Cemig SIM business format includes several partnerships with private companies for the construction of solar plants, in addition to other customers.

An example of Cemig SIM's engagement actions involves the MG industry union via a partnership with the MG Industry Federation (FIEMG). FIEMG's energy executive advisory board sends questionnaires to the Unions, which in turn send them to small- and medium-sized member industries. The industries answer the questionnaire and the consultancty of executive energy analyzes, guides and makes diagnoses, so the unions can pass on the opportunities to reduce energy costs to the industries. Given the options, the manufacturer chooses the one that best suits it and may enter into an agreement with Cemig SIM.

Impact of engagement, including measures of success

This engagement is expected to result in a reduction in energy costs of around 15%, without the need for investments by the companies.
The impacts will be measured by the number of contracts entered into with Cemig SIM.

Type of engagement

Collaboration & innovation

Details of engagement

Other, please specify

Engagement through Cemig REC

% of customers by number

0.13

% of customer - related Scope 3 emissions as reported in C6.5

0

Please explain the rationale for selecting this group of customers and scope of engagement

Cemig has been working with Renewable Energy Certificates (RECs), having included in the 2020 GHG inventory the RECs issued in this year.

RECs aim at proving that the energy comes from renewable sources (hydropower, wind, photovoltaic, biomass, etc.) and allows for the bookkeeping and tracking of the energy ballast. As a way of control, a REC that was sold once cannot be sold again. All certificates receive unique numbers for identification and also include several information, like the renewable source, generation site, generation date, amount traded, and the property it was attributed to. In general, each REC amounts to 1 MWh.

In 2020 Cemig created its own certificate, Cemig REC, which meets international requirement standards and ensures that energy purchased by customers comes from renewable sources.

The 0.13% amount corresponds to the four Cemig REC certificates issued in 2020 for customers of the hospital and glass package production sectors, in relation to the total of Cemig GT customers (3016 consumer units).

Impact of engagement, including measures of success

Through this engagement, Cemig aims at being a benchmark in the sale of certified renewable energy and expects to service customers that seek to implement GHG emission reduction measures.
The impacts will be measured by the number of Cemig REC certificates issued.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

Cemig promotes the engagement of its (in-house and third party) employees through internal campaigns on the rational use of energy within the Company's facilities, correlating energy efficiency with the reduction of GHG emissions, in the same line of approach adopted with its customers. Internal campaigns are carried out by banners and posters at Cemig's headquarters and offices across the State and digital media in existing communication channels, such as the login screen, Intranet, Cemig OnLine and Energia da Gente (Cemig's digital news bulleting, aimed at the internal public).

For example, in 2020, UniverCemig (Cemig's corporate university) moved forward with its two research and development projects. The first of them, “D0595 - Development of Tacit Knowledge and Teaching Alternation in the Training of Professionals”, had the participation of 14 people of the companies involved, besides the instructor, and two were trained with a Master's scholarship, and one with a Doctorate scholarship. The second project is “D0593 -

PLAID-UniverCemig DIGITAL: Digital Platform for Staff Skill-Development and Training in Cemig's Electric System Operation Area", which is in its development stage. Both projects seek to improve and speed up the training of Cemig's employees and to increase the effectiveness of the application of resources destined to training.

In addition to projects that aim to directly reduce electricity consumption, Cemig also carries out other projects of an exclusively educational nature that seek to engage society and, especially, the school public, on sustainability issues via courses and the rational use of electricity, in addition to the use of photovoltaic energy in these spaces. For the internal public, Cemig recently developed a remote learning course with the aim of disseminating best practices and knowledges involving the use of electricity.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Direct engagement with policy makers
Trade associations
Funding research organizations

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Other, please specify Mitigation and adaptation to climate change	Support	The Belo Horizonte City Hall, concerned with establishing local mitigation and adaptation policies to the effects of climate change, instituted the Municipal Committee on Climate Change and Eco-efficiency - CMMCE, through Municipal Decree 12,362 of 03/May/2006. CMMCE is a collegiate and consultative body aimed at supporting deployment of the municipal policy of the City of Belo Horizonte for climate change, acting in the articulation of public policies and private initiatives aimed at reducing greenhouse gas emissions and air pollutants, decrease production of solid waste and increasing efficiency in the processes of reuse and recycling of waste, encouraging the use of renewable energy sources, improving energy efficiency and rational use of energy, and boosting environmental awareness of citizens.	Cemig unqualifiedly backs this legislation.

		It includes representatives of Municipal and State Government, civil society, non-governmental organizations, and the business and academic sectors, which guarantees legitimacy to the population's participation in various decisions related to the search for environmental sustainability in the City. Thus, CMMCE's role is to propose and deliberate on municipal climate protection policies and raise awareness and mobilize society to discuss and take a standing on the problems arising from climate change in our municipality, with a view to inclusive and sustainable development and to enhancing quality of life for all citizens. Cemig attends CMMCE Belo Horizonte meetings and, in 2018, contributed to drafting the new municipal law on tackling climate change.	
Other, please specify Mitigation and adaptation to climate change	Support	The Municipal Committee for Climate Change and Ecoefficiency of Betim (Comitê Municipal sobre Mudanças Climáticas e Ecoeficiência - CMMCE) acts in the discussion of public and private initiative policies, proposing changes in attitudes that reduce emissions of greenhouse gases and air pollutants, in addition to reducing the production of solid waste and, thus, its reuse and recycling. The committee fosters actions to boost incentives to use renewable energy sources, promote the rational use of energy and, consequently, increase environmental awareness of citizens. Cemig's engagement with CMMCE Betim happens via the Company's participation in its meetings.	Cemig unqualifiedly backs this legislation.
Other, please specify Carbon pricing instrument	Support	Participation in the Advisory Committee of PMR Brazil Project, which ended in December 2020 and aimed at discussing the fitness and opportunity of including GHG emission pricing in the package of instruments geared at the deployment of the Climate Change National Policy (PNMC) in the post-2020 period.	Cemig unqualifiedly backs this legislation.

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

UN Global Compact (Action for Climate Platform)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The UN Global Compact aims at aligning strategies and operations of companies to the corporate social responsibility and sustainability principles. Currently, the Global Compact is one of the greatest corporate sustainability initiatives in the world; it is made up of over 80 networks including 159 countries besides Brazil.

How have you influenced, or are you attempting to influence their position?

The UN Global Compact principles guide all relations established due to Company activities and are described in Cemig's Social Responsibility Brochure. In 2009, Cemig signed the Global Compact Letter of Commitment, thus publicly reinforcing its commitment.

In 2020, Cemig was called to and participated in periodical meetings, presenting projects from the area in specific panels.

Trade association

FIEMG's Council of Businesspeople for the Environment

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

In the Climate Change and Air Quality Working Group, which is a part of FIEMG's Conselho de Empresários para o Meio Ambiente (CEMA or Council of Businesspeople for the Environment), discussions on possible changes in legislation due to the implementation of the Climate Change National Policy, such as the creation of a carbon pricing instrument, are held.

How have you influenced, or are you attempting to influence their position?

Cemig participation in CEMA occurs through the Sustainability Management Department engagement. In 2020, eight meetings were held, dealing with regulatory matters, like the Minas Gerais legislation, carbon pricing (PL528/2021), and initiatives of the Confederação Nacional da Indústria (CNI or Brazilian National Industry Confederation) connected to the theme.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Cemig's institutional relationship with public policy makers regarding climate change is carried out by the Supervisory Boards of the specific strategic objective and the corporate risk associated to the theme, under approval by the Executive Board. These Supervisory Boards are updated on the Company strategy and Master Plan during the Strategic Planning annual cycle. As told in question C1.1a, the person directly responsible for the climate change Global Strategy at Cemig is the Deputy Director. Therefore, all direct and indirect activities in which the Company participates related to the public policy development are assessed, finally, by their team after approval by the Director of the area in charge.

In UN Global Compact meetings, for example, Cemig is represented by its Sustainability Manager, who shows projects of interest for the Company to other corporations. Besides, Cemig is taking part in the ACT (Assessing Low Carbon Transition) - DDP (Deep Decarbonization Pathways) project, which will allow for the assessment of the company's decarbonization strategies in relation to the nationwide and sectoral decarbonization routes, in keeping with the Paris Agreement objectives. Among other focuses, the project provides for communication on low carbon sectoral transition on a nationwide and international level, with a focus on Latin America. Additionally, the employees receive annual training on Cemig's “Declaration of Ethical Principles and Code of Professional Conduct”, where the employees are instructed on how to align their behaviour to the company guidelines. Besides that, there is a whistleblowing channel where situations involving violations of the ethics code are looked into by Cemig's Ethics Committee.

C12.4

(C12.4) Have you published information about your organization’s response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports

Status

Complete

Attach the document

ras-2020.pdf

Page/Section reference

RAS 2020, chapter Climate Change (Mudanças do Clima)

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

N/A

Publication

In other regulatory filings

Status

Complete

Attach the document

cemig-h-4t_2020_reapresentacao.pdf

Page/Section reference

Financial Report

Content elements

Governance
Strategy
Risks & opportunities
Other metrics

Comment

N/A

Publication

In voluntary communications

Status

Complete

Attach the document

inventario-gases-efeito-estufa-2020.pdf

Page/Section reference

Greenhouse Gases Inventory – Year 2020.
All chapters.

Content elements

Emissions figures
Emission targets
Other metrics

Comment

N/A

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Deputy Director	Other C-Suite Officer

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

Fundada em 1952 pelo então governador de Minas Gerais, Juscelino Kubitschek de Oliveira, a Companhia Energética de Minas Gerais (Cemig) atua nas áreas de geração, transmissão, comercialização e distribuição de energia elétrica, soluções energéticas (Cemig SIM) e distribuição de gás natural (Gasmig). O grupo é constituído pela holding Companhia Energética de Minas Gerais (Cemig), pelas subsidiárias integrais Cemig Geração e Transmissão S.A. (Cemig GT) e Cemig Distribuição S.A. (Cemig D), totalizando 185 Sociedades, 14 Consórcios e dois FIPs (Fundos de Investimentos em Participações), resultando em ativos presentes em 25 estados brasileiros e no Distrito Federal. Desde sua fundação, a organização assumiu o papel de levar o bem-estar coletivo às regiões onde atua, de forma inovadora e sustentável. Essa determinação a levou à condição de maior distribuidora de energia em extensão de linhas e redes e de ser uma das maiores organizações de geração e transmissão de energia do país. Além da geração, transmissão e distribuição de energia elétrica a Cemig também atua no segmento de comercialização e distribuição de gás natural por meio da Gasmig, que é a distribuidora exclusiva de gás natural canalizado em todo o estado de Minas Gerais. Ademais, a Cemig tem participação de 22,6% no capital social da Light S.A., na qual participa do bloco de controle, e, também, detém participação de 21,68% do capital social da Transmissora Aliança de Energia Elétrica S.A., Taesa, conferindo-lhe o controle da empresa.

A Cemig é uma companhia de capital aberto, controlada pelo Governo do Estado de Minas Gerais (51%), tendo suas ações negociadas em São Paulo, na B3 S.A. (Brasil, Bolsa, Balcão), em Nova York, na New York Stock Exchange (NYSE) e em Madrid, no Mercado de Valores Latino-Americanos (Latibex). A receita operacional líquida consolidada da Empresa atingiu R$ 25,23 bilhões em 2020, com base em uma matriz cuja principal fonte de energia são os recursos renováveis. O parque gerador da Cemig tem capacidade instalada de 6.086 MW, dos quais 98,18% se referem à geração hidráulica; 1,90%, à geração eólica; e 0,02%, à geração solar. É importante ressaltar que, no final de 2019, a UTE Igarapé, única termelétrica da Companhia, foi desativada, tornando o complexo de geração de energia da Cemig 100% renovável. A organização possui quase 4.927 km de linhas de transmissão. Na área de distribuição de energia elétrica, é responsável pela gestão da maior rede de distribuição de eletricidade da América Latina, com mais de 545 mil km de extensão. No final de 2020, a Cemig contava com 5254 empregados.

Por seu comprometimento com os princípios de responsabilidade socioambiental, sua solidez econômico-financeira e excelência técnica, a organização é reconhecida internacionalmente como referência em sustentabilidade no seu setor de atuação e se posiciona como um dos principais vetores de consolidação do setor elétrico brasileiro. A Cemig compõe o Índice Dow Jones de Sustentabilidade (DJSI World) há 21 anos, sendo a única empresa do setor elétrico das Américas a ser reconhecida na lista. Participa também, pelo 16º ano consecutivo, do Índice de Sustentabilidade Empresarial (ISE) da B3, e foi selecionada pela 11a vez para compor o Índice Carbono Eficiente (ICO2), criado em 2010 pela B3 e pelo BNDES.

Em 2020, a Cemig foi listada entre as empresas líderes em gestão de mudanças climáticas e segurança hídrica na América Latina, pelos Programas Climate Change e Water Security, pela qualidade da informação divulgada aos investidores e ao mercado global. O reconhecimento foi concedido pelo CDP Latin America. Este é o nono ano consecutivo que o CDP premia a Companhia. A seleção levou em consideração o nível de detalhe das respostas com relação a critérios como gerenciamento de riscos, comprometimento com a mitigação e iniciativas de redução de emissões de gases de efeito estufa. Os melhores resultados indicam um alto nível

de transparência na divulgação das informações relacionadas ao tema, proporcionando aos investidores conteúdo consistente sobre a gestão em mudanças climáticas e segurança hídrica.
Missão: Fornecer soluções integradas de energia limpa e acessível à sociedade, de maneira inovadora, sustentável e competitiva.
Visão: Estar entre os três melhores grupos integrados de energia elétrica do Brasil em governança, saúde financeira, desempenho de ativos e satisfação de clientes.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	25,227,625

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

Yes

SC0.2a

(SC0.2a) Please use the table below to share your ISIN.

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1	BR	CMIGACNOR6

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

Requesting member

Caixa Econômica Federal

Scope of emissions

Scope 1

Allocation level

Facility

Allocation level detail

A intensidade de emissões do escopo 1 da Cemig (0,0009tCO2e/MWh), com base nas fontes de emissão do escopo 1.
O Cálculo da emissão para o cliente foi baseado na intensidade de emissão do fornecedor = consumo de energia elétrica do cliente 41.928MWh x 0,0009tCO2/MWh

Com base no consumo das empresas, considerando 387 instalações.
- CAIXA ECONOMICA FEDERAL
- CAIXA SEGURADORA

Emissions in metric tonnes of CO2e

37.73

Uncertainty (±%)

0.69

Major sources of emissions

As emissões de Combustão móvel apresentaram a maior contribuição frente às demais categorias do Escopo 1 com emissão de 7.927,83 tCO2e, com redução de 12,57% em relação a 2019. Dentro dessa categoria, o consumo de diesel na frota própria é responsável por 6.649,73 tCO2e. Já a categoria de Combustão estacionária apresentou uma emissão de 198,43 tCO2e, que corresponde a redução de aproximadamente 37 mil tCO2e em relação à 2019 devido ao descomissionamento da UTE Igarapé, que anteriormente era a principal responsável pelas emissões de Escopo 1 da CEMIG.

As emissões da categoria Fugitivas correspondem a 3.262,22 tCO2e, sendo principalmente derivadas do escape de SF6 (2.953,51 tCO2e), com redução de 40,44% em relação a 2019 devido a boas práticas e também à contribuição do procedimento corporativo de gestão de emissões de SF6 elaborado em 2020. Já as emissões de Mudança de uso do solo apresentam a menor representativiade do Escopo 1, com apenas 30,88 tCO2e.

As emissões de Escopo 1 da CEMIG no ano de 2020 totalizaram 11.419,36 tCO2e, representando uma redução de 78,01% em relação ao ano anterior (2019 = 51.939 tCO2e).

A redução nas emissões do Escopo 1 está associado principalmente ao descomissionamento da UTE Igarapé (responsável pela emissão de aproximadamente 37.000 tCO2e no ano anterior) ao final de 2019.

Verified

Yes

Allocation method

Other, please specify

Alocação baseada no consumo de energia elétrica pelo cliente (MWh)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

As fontes de emissão da Cemig foram consideradas conforme diretrizes do Programa Brasileiro do GHG Protocol (FGV/GVces; WRI, 2011).
As principais exclusões consideradas no cálculo das emissões do escopo 1 são: as emissões de gases refrigerantes, uma vez que para o ano de 2020 não foi possível evidenciar os dados com boa rastreabilidade. O mesmo aconteceu para o escape de SF6 da
Geração (Cemig GT). Ambos os casos são oportunidade de melhoria e inclusão no Inventário do próximo ciclo
intensidade de emissões do escopo 1 da Cemig (0,0009tCO2e/MWh)

Requesting member

Caixa Econômica Federal

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

2,586.77

Uncertainty (±%)

0.47

Major sources of emissions

Foi considerado o fator de emissão do GRID 0,0617tonCO2/MWh para o cálculo da emissão proveniente do consumo de energia do cliente.
O consumo informado refere-se à quantidade medida e não reflete abatimentos/compensações de créditos referentes à geração de micro e mini geração distribuída.
Como não foi informado o CNPJ ou o PN (Parceiro de Negócios) desejado, a busca foi realizada pelo nome e considerou-se 387 instalações, com consumo total de 41.925 MWh, ligadas aos parceiros de negócio abaixo:

PN	NOM_PN	NUM_CNPJ
7000081471	CAIXA ECONOMICA FEDERAL	00360305000104
7005801562	CAIXA ECONOMICA FEDERAL	00360305266562

Verified

Yes

Allocation method

Allocation based on another physical factor

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Com base no consumo de energia. Não houve exclusão com base na metodologia adotada.

Requesting member

MRV Engenharia e Participações

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

2.04

Uncertainty (±%)

0.69

Major sources of emissions

As emissões de Combustão móvel apresentaram a maior contribuição frente às demais categorias do Escopo 1 com emissão de 7.927,83 tCO2e, com redução de 12,57% em relação a 2019. Dentro dessa categoria, o consumo de diesel na frota própria é responsável por 6.649,73 tCO2e. Já a categoria de Combustão estacionária apresentou uma emissão de 198,43 tCO2e, que corresponde a redução de aproximadamente 37 mil tCO2e em relação à 2019 devido ao descomissionamento da UTE Igarapé, que anteriormente era a principal responsável pelas emissões de Escopo 1 da CEMIG.

As emissões da categoria Fugitivas correspondem a 3.262,22 tCO2e, sendo principalmente derivadas do escape de SF6 (2.953,51 tCO2e), com redução de 40,44% em relação a 2019 devido a boas práticas e também à contribuição do procedimento corporativo de gestão de emissões de SF6 elaborado em 2020. Já as emissões de Mudança de uso do solo apresentam a menor representativiade do Escopo 1, com apenas 30,88 tCO2e.

As emissões de Escopo 1 da CEMIG no ano de 2020 totalizaram 11.419,36 tCO2e, representando uma redução de 78,01% em relação ao ano anterior (2019 = 51.939 tCO2e).

A redução nas emissões do Escopo 1 está associado principalmente ao descomissionamento da UTE Igarapé (responsável pela emissão de aproximadamente 37.000 tCO2e no ano anterior) ao final de 2019.

Verified

Yes

Allocation method

Allocation based on another physical factor

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

As fontes de emissão da Cemig foram consideradas conforme diretrizes do Programa Brasileiro do GHG Protocol (FGV/GVces; WRI, 2011).
As principais exclusões consideradas no cálculo das emissões do escopo 1 são: emissões de gases refrigerantes, uma vez que para o ano de 2020 não foi possível evidenciar os dados com boa rastreabilidade. O mesmo aconteceu para o escape de SF6 da
Geração (Cemig GT). Ambos os casos são oportunidade de melhoria e inclusão no Inventário do próximo ciclo.
Considerando as fontes de emissão dos escopo 1, foi calculada a intensidade de emissões do escopo 1 da Cemig (0,0009tCO2e/MWh)

Requesting member

MRV Engenharia e Participações

Scope of emissions

Scope 2

Allocation level

Facility

Allocation level detail

Foi considerado o fator de emissão do grid 0,0617tCO2/MWh e o consumo de energia elétrica de 2.267 MWh de 484 instalações do cliente.

Emissions in metric tonnes of CO2e

139.87

Uncertainty (±%)

0.47

Major sources of emissions

Foi considerado o fator de emissão do GRID 0,0617 tonCO2/MWh para o cálculo da emissão proveniente do consumo de energia do cliente.
O consumo informado refere-se à quantidade medida e não reflete

abatimentos/compensações de créditos referentes à geração de micro e mini geração distribuída.
Como não foi informado o CNPJ ou o PN (Parceiro de Negócios) desejado, a busca foi realizada pelo nome e considerou-se 484 instalações.
- MRV ENG LTDA
- MRV ENGENHARIA E PARTICIPACOES S A
- MRV ENGENHARIA E PARTICIPACOES SA
- MRV SERVICOS DE ENGENHARIA LTDA

Verified

Yes

Allocation method

Allocation based on another physical factor

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Com base no consumo de energia. Não houve exclusão com base na metodologia adotada.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

As informações sobre as emissões de gases de efeito estufa da Cemig, referente ao ano de 2020 estão disponíveis no link : **https://www.cemig.com.br/wp-content/uploads/2021/04/inventario-gases-efeito-estufa-2020.pdf**

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
We face no challenges	O Cliente fornecer dados de CNPJ que deverão ser considerados para o cálculo das emissões, uma vez que o cliente apresenta diversos registro (nomes) no sistema da empresa. O CDP orientar sobre a melhor forma de alocação das emissões por escopo relativo ao produto "venda de energia".

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

A CEMIG tem sua própria metodologia bem consolidada para alocar as emissões aos consumidores. Esta alocação é baseada na divisão da energia total vendida pela CEMIG (em MWh), pela energia vendida ao consumidor em questão (em MWh), multiplicada pela emissão total da CEMIG (em kgCO2e).
Uma vez estruturada esta metodologia, a CEMIG está disposta a responder, sempre que solicitada, ao CDP Supply Chain de cada um dos fornecedores, alocando apropriadamente as emissões.

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

Requesting member

Caixa Econômica Federal

Group type of project

New product or service

Type of project

New product or service that reduces customers products / services operational emissions

Emissions targeted

Other, please specify

Redução de emissão do escopo 2 do cliente e redução do escopo 3 do fornecedor

Estimated timeframe for carbon reductions to be realized

0-1 year

Estimated lifetime CO2e savings

2,586

Estimated payback

0-1 year

Details of proposal

Fornecimento de energia através da aquisição do Cemig REC (energia renovável certificada da Cemig)

Requesting member

MRV Engenharia e Participações

Group type of project

New product or service

Type of project

New product or service that reduces customers products / services operational emissions

Emissions targeted

Actions to reduce customers' operational emissions (customer scope 1 & 2)

Estimated timeframe for carbon reductions to be realized

1-3 years

Estimated lifetime CO2e savings

139.87

Estimated payback

0-1 year

Details of proposal

Fornecimento de energia através da Cemig SIM.

Requesting member

Caixa Econômica Federal

Group type of project

New product or service

Type of project

New product or service that reduces customers products / services operational emissions

Emissions targeted

Actions to reduce customers' operational emissions (customer scope 1 & 2)

Estimated timeframe for carbon reductions to be realized

0-1 year

Estimated lifetime CO2e savings

Estimated payback

0-1 year

Details of proposal

Fornecimento de energia através da Cemig SIM.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

Yes, I will provide data

SC4.1a

(SC4.1a) Give the overall percentage of total emissions, for all Scopes, that are covered by these products.

100

SC4.2a

(SC4.2a) Complete the following table for the goods/services for which you want to provide data.

Name of good/ service

Geração de energia elétrica (MWh)

Description of good/ service

Fornecimento de energia elétrica.

Type of product

Final

SKU (Stock Keeping Unit)

MWh

Total emissions in kg CO2e per unit

0.98

±% change from previous figure supplied

-78

Date of previous figure supplied

December 31, 2020

Explanation of change

Houve a desativação da usina termelétrica de Igarapé em 2019, sendo a capacidade instalada em 2020, tornou-se 100% renovável.
Em 2020, a produção líquida de energia pela Cemig apresentou um aumento de 41% em relação ao ano de 2019 (de 8.267.150 MWh para 11.644.646 MWh).

As emissões da Escopo 1 reduziram 78% em relação à 2019, de 51,939 tCO2e para 11,419 tCO2e, resultando em um decréscimo na intensidade das emissões (0,00098 tCO2e/MWh ou 0,98 CO2e/MWh).

Methods used to estimate lifecycle emissions

GHG Protocol Product Accounting & Reporting Standard

SC4.2b

(SC4.2b) Complete the following table with data for lifecycle stages of your goods and/or services.

Name of good/ service

Venda de energia elétrica em MWh.

Please select the scope

Scope 2

Please select the lifecycle stage

Energy/Fuel

Emissions at the lifecycle stage in kg CO2e per unit

62

Is this stage under your ownership or control?

Yes

Type of data used

Primary

Data quality

A unidade está expressa em kg CO2 por MWh. Este valor representa as emissões provenientes do Sistema Interligado Nacional (SIN), que em 2020 foi de 0,0617 tCO2/MWh.
As emissões de Escopo 2 do CEMIG no ano de 2020 totalizaram 448.083,41 tCO2e, representando uma redução de 25,13% em relação ao ano anterior (em 2019, 598.518 tCO2e).

If you are verifying/assuring this product emission data, please tell us how

Os processos são verificados conforme requisitos da NBR ISO 14064:2007 parte 3: Especificação e orientação para a validação e verificação de declarações relativas a gases de efeito estufa e as Especificações do Programa Brasileiro GHG Protocol.

SC4.2c

(SC4.2c) Please detail emissions reduction initiatives completed or planned for this product.

Name of good/ service	Initiative ID	Description of initiative	Completed or planned	Emission reductions in kg CO2e per unit
Eficiência na gestão do consumo de combustíveis da frota veicular. O cálculo de reduções está associado com o total de energia comercializada pela Cemig (kg CO2/MWh)	Initiative 1	A Cemig tem por diretriz renovar sua frota de veículos anualmente de forma que a idade média dos veículos não ultrapasse cinco anos, período legal de depreciação fixado pelo poder concedente. Além disso a empresa incentiva o abastecimento com etanol.		0.05

SC4.2d

(SC4.2d) Have any of the initiatives described in SC4.2c been driven by requesting CDP Supply Chain members?

No

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain questions?
I am submitting my response	Investors Customers	Public	Yes, I will submit the Supply Chain questions now

Please confirm below

I have read and accept the applicable Terms