

# Welcome to your CDP Water Security Questionnaire 2022

## W0. Introduction

### W0.1

#### **(W0.1) Give a general description of and introduction to your organization.**

Founded in 1952 by the then governor of Minas Gerais, Juscelino Kubitschek de Oliveira, Company Energética de Minas Gerais (Cemig) operates in the areas of generation, transmission, marketing and distribution of electric power, energy solutions (Cemig SIM) and natural gas distribution (Gasmig). The group is constituted by the holding Company Energética de Minas Gerais (Cemig), by wholly owned subsidiaries Cemig Geração e Transmissão S.A. (Cemig GT) and Cemig Distribution S.A. (Cemig D), totaling 162 companies, 9 consortiums and two FIPs (Funds of Investment in Participations), resulting in assets present in several Brazilian States and in the Federal District. Since its foundation, the organization undertook the role of bringing collective wellbeing to regions where operates, in an innovativa and sustainable form. With this composition, Cemig holds the position of largest energy trader for free clients of the country and is one of the largest generator groups. Gasmig is exclusive dealer of piped natural gas in the entire state of Minas Gerais. Furthermore, Cemig GT has 45% participation in the total share capital of Aliança Geração de Energia S.A, Aliança Geração, and, also detains 21.68% participation in the share capital of Transmissora Aliança de Energia Elétrica S.A., Taesa, granting it the control of the company.

With the mission of supplying integrated solutions of clean and accessible energy to the society, innovative, sustainable and competitive, Cemig is an publicly-held company, controlled by the State Government of Minas Gerais (51%), having its shares negotiated in São Paulo, at B3 S.A. (exchange and OTC), in Nova York, at New York Stock Exchange (NYSE) and in Madrid, at Mercado de Valores Latino-Americanos (Latibex). The consolidated net operational revenue of the Company reached R\$ 33.65 billion in 2021, based on a matrix which main energy source are renewable resources. The generator station of Cemig has 5,755 MW installed capacity, of which 97.29% refers to hydraulic generation; 2.71%, wind power generation; and 0.01%, solar generation. It is important to highlight that, at the end of 2019, UTE Igarapé, only thermoelectric of the Company, was shutdown, making the power generation complex of Cemig 100% renewable. The organization has almost 4,937 km of transmission lines. In the electric power distribution area, is responsible for the management of

the largest electricity distribution network in Latin America, with over 564 thousand km of extension. At the end of 2021, Cemig counted with 5025 employees.

For its commitment with principles of socioenvironmental responsibility, its economical-financial soundness and technical excellence, the organization is internationally recognized as reference in sustainability in its area of operation and is ranked as one of the main consolidation vectors of the Brazilian electric sector. Cemig has been part of the Dow Jones Sustainability Index (DJSI World) for 22 years, being the only company in the electric sector of the Americas to be recognized in the list. Participates also, for the 17th consecutive year, of Corporate Sustainability Index (ISE) of B3, and was selected for the 12th time to be part of the Efficient Carbon Index (ICO2), created in 2010 by B3 and by BNDES.

In 2021, Cemig was listed among the leader companies in management of water-related issues in Latin America, by Climate Change Programs, for the quality of information disclosed to the investors and to global market. The recognition was granted by CDP Latin America. This is the third consecutive year that CDP awards the Company. The selection considered the level of details of the responses regarding criteria such as risk management and opportunities related to water issues. The best results indicate a high transparency level in the disclosure of information related to the theme, providing to the investors consistent content over management in water-related issues.

## W-EU0.1a

**(W-EU0.1a) Which activities in the electric utilities sector does your organization engage in?**

- Electricity generation
- Transmission
- Distribution
- Other, please specify
- Natural gas storage, transmission and distribution

## W-EU0.1b

**(W-EU0.1b) For your electricity generation activities, provide details of your nameplate capacity and the generation for each technology.**

	Nameplate capacity (MW)	% of total nameplate capacity	Gross electricity generation (GWh)
Coal – hard			
Lignite			
Oil			
Gas			
Biomass			
Waste (non-biomass)			

Nuclear			
Fossil-fuel plants fitted with carbon capture and storage			
Geothermal			
Hydropower	5,638.1	96.76	15,776.85
Wind	115.2	1.98	438.78
Solar	1.42	1.26	1.44
Marine			
Other renewable			
Other non-renewable			
Total	5,826.7	100	16,217.07

## W0.2

**(W0.2) State the start and end date of the year for which you are reporting data.**

	Start date	End date
Reporting year	January 1, 2021	December 31, 2021

## W0.3

**(W0.3) Select the countries/areas in which you operate.**

Brazil

## W0.4

**(W0.4) Select the currency used for all financial information disclosed throughout your response.**

BRL

## W0.5

**(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.**

Companies, entities or groups over which operational control is exercised

## W0.6

**(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?**

No

## W0.7

**(W0.7) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?**

Indicate whether you are able to provide a unique identifier for your organization.	Provide your unique identifier
Yes, a Ticker symbol	CMIG4 (BVMF)
Yes, a Ticker symbol	CIG (NYSE)

## W1. Current state

### W1.1

**(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.**

	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Vital	Not very important	<p>Direct Use: Cemig's power plants are predominantly composed of hydroelectric plants that have more than 3,500 km<sup>2</sup> of reservoirs, representing 98% of the Company's installed capacity. Thus, the availability of water is of fundamental importance for the generation of energy.</p> <p>The amount of water available is sensitive to climate variations, vulnerable to the consequences of the exploitation of other natural resources, is greatly affected by human actions, and is subject to regulations.</p> <p>In the future (202-2040), Cemig's water dependence will continue to be high, as the company will continue to have a percentage above 90% of installed capacity in hydroelectric power plants. However, the Company is reducing its dependence on water by diversifying investments in its generation matrix, increasing the share of Distributed Generation projects, and encouraging the purchase of wind, solar, and biomass energy.</p>

			Indirect Use: Water consumption by Cemig's suppliers is not relevant enough to be considered in this context.
Sufficient amounts of recycled, brackish and/or produced water available for use	Not very important	Not very important	<p>Direct Use: Most of Cemig's energy generation does not have a consumptive use of water. There is low consumption in its operations, basically and in administrative activities, and the water recycling rate is considered insignificant in these operations.</p> <p>Indirect Use: In recent years, Cemig has been building new substations (SS) to use rainwater to reduce administrative water consumption at Cemig Distribuição. The collected water is used for irrigation and sanitary flushing purposes. In 2021, 6 facilities that use rainwater were delivered, to know: Bocaiúva SS (North Region), São Bento Abade SS (South), Varjão de Minas SS and Serra do Salitre SS (Triangulo Mineiro), Nova Serrana 1 SS (West) and Machado Mineiro SS (East). By 2027, another 200 substations will be built using said system. However, the percentage of recycling is considered insignificant in the operations of the Company's suppliers.</p> <p>Furthermore, brackish water is not used by the Company's critical suppliers and they do not produce water. Thus, the degree of importance of indirect use was considered not very important and in the future, no change in this pattern of consumption is expected.</p>

## W1.2

**(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?**

	% of sites/facilities/operations	Please explain
Water withdrawals – total volumes	100%	<p>Cemig monitors 100% of water abstraction per source (public supply, artesian well, and surface abstraction) in all its operations and administrative buildings. The water abstraction process is monitored monthly, and the total volume collected in its facilities is recorded.</p> <p>The water levels of the main HPP reservoirs are</p>

		<p>monitored daily, which include Camargos (Grande River hydrographic basin), Emborcação (Paranaíba River hydrographic basin), Irapé (Jequitinhonha River hydrographic basin), Nova Ponte (Paranaíba River hydrographic basin), Queimado (São Francisco River hydrographic basin) and Três Marias (São Francisco River hydrographic basin), and the flow in the main rivers that make up the water network of Cemig's operations.</p>
Water withdrawals – volumes by source	100%	<p>In 2021, 54% of the water came from public or private supply networks, 26% from surface abstraction and 20% from artesian wells.</p> <p>The water collected for administrative consumption is monitored monthly from different sources so that Cemig can monitor 100% of the volume of water collected for consumption purposes.</p> <p>All artesian wells have water meters to measure consumption and monitor the limits granted for each well; the grants' validity is monitored at each operational management's headquarters.</p> <p>The water levels of the main HPP reservoirs are monitored daily, namely: Camargos (Rio Grande hydrographic basin), Emborcação (Paranaíba River hydrographic basin), Irapé (Jequitinhonha River hydrographic basin), Nova Ponte (Paranaíba River hydrographic basin), Queimado (São Francisco River hydrographic basin) and Três Marias (São Francisco River hydrographic basin), and the flow in the main rivers that make up the water network of Cemig's operations.</p>
Water withdrawals quality	100%	<p>The water quality of Cemig's reservoir is regularly monitored through a network that includes 46 reservoirs and 176 physicochemical and biological data collection stations in the main hydrographic basins of Minas Gerais (Paranaíba River, Grande River, São Francisco River, Doce River, and Paraíba do Sul River hydrographic basins).</p>

		<p>Monitoring takes place upstream and downstream of the dams so that the Company can identify and quantify whether there is any impact being caused on water courses.</p> <p>Monitoring and analysis are carried out every six months by collecting physicochemical and biological data from both groundwater and surface water.</p>
Water discharges – total volumes	100%	<p>Cemig is responsible for generating two classes of liquid effluents: administrative effluents and thermal effluents from the cooling processes of equipment in hydroelectric power plants.</p> <p>Administrative effluents come from taps, toilets, garden irrigation, and other potable and non-potable activities. The wastewater is discharged chiefly into the public network and another part is directed to septic tanks, where it is treated and later released into a watercourse.</p> <p>All administrative effluent generated by Cemig is monitored monthly. The total volume of sanitary effluent generated is estimated according to the Brazilian standard NBR 7229, which considers that 80% of the water consumed is discarded as effluent.</p> <p>The thermal effluent from HPPs is discarded directly into the water body together with the water that passes through the turbines. As the water used to generate electricity and cool down equipment is not consumptive, there is no need to measure the volume of water discharged.</p>
Water discharges – volumes by destination	100%	<p>Administrative effluents generated by Cemig are mainly released into the public network (68%) and the other part is sent to septic tanks (32%).</p> <p>The effluent directed to septic tanks is monitored annually (73%), semiannually (17%), or quarterly (10%). The effluent directed to the utility companies is monitored daily.</p> <p>Some facilities have water and oil separator boxes that dispose of water in sinkholes installed in the ground. An annual analysis of</p>

		liquid effluents is conducted as determined by CONAMA Resolution 430 dated 05.13.2011, which provides for effluent discharge conditions and standards, and amends Resolution No. 357, of March 17, 2005.
Water discharges – volumes by treatment method	100%	<p>All of Cemig's sanitary effluent is treated, with approximately 68% being directed to conventional treatment systems, through the public collection network and 32% to septic tanks located within Cemig's facilities.</p> <p>Power generation and equipment cooling effluents are discharged directly into water bodies. Minor degradation of water quality can occur when compared to the flow of the river, which eliminates the need for effluent treatment given the concentrations below the parameters established by the current legislation. The effluent is monitored through annual audits: an external audit by the certification body ABNT and two internal audits.</p>
Water discharge quality – by standard effluent parameters	100%	<p>The quality of effluents directed to septic tanks is monitored annually (in more than 90% of the facilities) or every six months (about 10% of the facilities). The monitored parameters include: pH, temperature, settleable solids, BOD, and COD.</p> <p>The facilities have water and oil separator boxes that dispose of water in sinkholes installed in the ground and conduct an annual analysis of liquid effluents as determined by CONAMA Resolution No. 430, of 05.13.2011.</p> <p>As for HPP effluents, Cemig monitors the water quality upstream and downstream of the dams to identify whether there is any impact being caused on the watercourses. The main parameters monitored include temperature, turbidity, phosphorus, nitrogen, and oxygen.</p>
Water discharge quality – temperature	100%	As for HPPs, Cemig monitors the quality of the water in the reservoirs, including its temperature, as per the current regulation's parameters (CONAMA Resolution No. 357, 2005.). In 57% of the plants, water temperature is monitored every six months, while 43% of the plants are



		<p>monitored quarterly. Cemig monitors water quality upstream and downstream from its operations to identify whether there is any impact being caused on water courses. This monitoring assesses the quality of the Company's effluent management system and assists in keeping the effluent parameters within limits defined by the legislation. The temperature of the sanitary effluent directed to septic tanks is also monitored annually (73%), semi-annually (17%), or quarterly (10%), depending on the facility. Given its characteristics, its polluting potential is considered low according to the current legislation. The temperature of the sanitary effluent destined for local utility companies is monitored by them daily.</p>
Water consumption – total volume	100%	<p>All water consumption by Cemig, from 2020 onwards was categorized as administrative, which includes consumption occurs at the Company's various facilities through public supply, surface water abstraction, and artesian wells (underground abstraction).</p> <p>Cemig has two indexes to monitor water consumption: the Artesian Water Consumption (ICA PA) and the Public Service Water Consumption (ICA SP). Water is abstracted from artesian wells observing the limits granted to each well, and is intended for human consumption, washing, and occasionally irrigation of gardens. No water is consumed for industrial use or as a shared resource.</p> <p>For administrative consumption, Cemig monitoring 100% of water consumption based on the monthly monitoring of water abstracted from different sources.</p>
Water recycled/reused	Not relevant	<p>In recent years, Cemig has been building new substations (SS) to use rainwater to reduce administrative water consumption at Cemig Distribuição. The collected water is used for irrigation and sanitary flushing purposes. In 2021, 6 facilities that use rainwater were delivered, to know: Bocaiúva SS (North Region), São Bento Abade SS (South), Varjão de Minas</p>

		SS and Serra do Salitre SS (Triangulo Mineiro), Nova Serrana 1 SS (West) and Machado Mineiro SS (East). By 2027, another 200 substations will be built using said system. However, the percentage of recycling is considered insignificant in the operations of the Company's suppliers.
The provision of fully-functioning, safely managed WASH services to all workers	100%	<p>The provision of water, sanitation, and hygiene services complies with the current standards required and ensures safe consumption and use by all employees at all company units.</p> <p>In all the Company's drinking fountains, quarterly water analyses are carried out to verify compliance with the water quality and potability standards established in the Ministry of Health Ordinance No. 05 of 09.28.2017, Annex XX, which determines microbiological criteria to be met by water samples collected during quarterly monitoring.</p>

## W-EU1.2a

**(W-EU1.2a) For your hydropower operations, what proportion of the following water aspects are regularly measured and monitored?**

	% of sites/facilities/operations measured and monitored	Please explain
Fulfilment of downstream environmental flows	100%	<p>Cemig adopts operational measures that always seek to respect the minimum flows of the rivers and environmental and multiple-use restrictions. Apart from specialist systems that monitor compliance with operating and environmental constraints, for each hydroelectric power plant, there is an Operating Instruction that defines the technical, environmental, and operating parameters to standardize operating procedures from the planning phase, daily operation schedule, and real-time operation of projects. Cemig also has an area dedicated to water resources management, which, through participation in the National and State Water Resources Councils, Hydrographic Basin Committees, Technical Chambers, and Working Groups, together with representatives of the government, other users of</p>

		water resources, and organized civil society, carries out initiatives for the integrated management of the hydrographic basins where it has projects, seeking to ensure the best use of water for power generation, without impacting the other uses of the hydrographic basin.
Sediment loading	100%	<p>Cemig operates fluviosedimentometric stations to monitor the inflow and deposition of sediment in the reservoirs, aiming at:</p> <p>Quantify and characterize sediment carried by rivers in some places of interest; Estimate the service life of existing reservoirs and future uses; Meet the environmental conditions for securing an Operating License - OL; Warn the competent bodies about the degradation of the hydrographic basin; Support the actions of the Hydrographic Basin Committees and simultaneously comply with the ANA/ANEEL Joint Resolution No. 3, of August 10, 2010.</p> <p>The current monitoring program includes stations in different hydrographic basins, which operate in a detailed regime where solid discharge is frequently measured through sampling techniques that allow calculating sediment amounts. Typically, 8 measurements of sediment releases are conducted in HPPs yearly.</p> <p>Sediment is currently monitored at 86 stations located in the vicinity of each of the HPPS and our Small Hydroelectric Power Plants (SHPs).</p>
Other, please specify	Not relevant	

## W1.2b

**(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, and how do these volumes compare to the previous reporting year?**

	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Total withdrawals	198,175,634	Lower	<p>The following variation classification criterion was used: About the Same = 0% - 10%; Major / Minor = 11% - 55%; Far Higher / Far Lower = above 55%.</p> <p>The total volume of water abstracted by Cemig in 2021 was 198,175,634 megaliters, a value 11% lower when compared to the 2020 volume (219,516,821 megaliters). Of this volume, 99.87% are used for operational purposes, i.e., electricity generation.</p> <p>Water abstraction in 2021 was lower than in 2020 due to the worsening of hydrological conditions. In 2022, this volume tends to increase due to better hydrological conditions verified in the wet season (2021-2022).</p> <p>As for climate change scenarios, there is no strong indication regarding the change in water availability in the areas where Cemig's main HPPs are installed.</p>
Total discharges	194,837,454	Lower	<p>The following variation classification criterion was used: About the same = 0% - 10%; Major / Minor = 11% - 55%; Far Higher / Far Lower = above 55%.</p> <p>The total volume of water discharged by Cemig in 2021 was equivalent to 194,837,454 megaliters, a value 12% lower when compared to the previous year (221,013,310 megaliters). This decrease is associated with the worsening of hydrological conditions in 2021 and the consequent decline in hydroelectric energy production in the Brazilian Electric System.</p> <p>In 2022, this volume is expected to rise due to the increase in inflow.</p> <p>As for climate change scenarios, there is no assertive indication regarding the change in</p>

			water availability in the areas where Cemig's main HPPs are installed.
Total consumption	3,338,180	Much higher	<p>The following variation classification criterion was used: About the same = 0% - 10%; Major / Minor = 11% - 55%; Far Higher / Far Lower = above 55%.</p> <p>The total volume of water consumption by Cemig in 2021 was equivalent to 3,338,180 megaliters, a value much higher when compared to the previous year (1,496,643 megaliters).</p> <p>After the low inflows and low storage capacity of the reservoirs by the end of September 2021, the hydrological conditions improved as of the 2021/2022 wet season, specifically in October. The reservoir recovery policy began at that time and resulted in the consumption of 3,338,130 megaliters. The remainder of the reported volume (50 megaliters) refers to administrative consumption.</p> <p>In 2022, a higher number of abstractions is expected, due to the continuity in the policy of recovering the storage levels of the reservoirs.</p> <p>As for climate change scenarios, there is no strong indication regarding the change in water availability in the areas where Cemig's main HPPs are installed.</p>

## W1.2d

**(W1.2d) Indicate whether water is withdrawn from areas with water stress and provide the proportion.**

	Withdrawals are from areas with water stress	Identification tool	Please explain
Row 1	No	Other, please specify Hidrotec	According to studies carried out under the HIDROTEC program, in 2002, the average flow generated in the State of Minas Gerais was 6,495 m <sup>3</sup> /s. For a population estimated by IBGE in 2002 of 18,300,000 inhabitants, the State of Minas Gerais is in a situation considered comfortable (close to the limit of the 'sufficient' category),

			with a per capita water availability of 11,193 m <sup>3</sup> / year. We have also considered the water availability classification adopted by the UN in our analysis, which indicates that for an area to be water-stressed, the water availability per inhabitant must be less than 1,000 m <sup>3</sup> /inhabitant per year.
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## W1.2h

(W1.2h) Provide total water withdrawal data by source.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	198,175,449	Lower	<p>The following variation classification criterion was used: About the Same = 0% - 10%; Major / Minor = 11% - 55%; Far Higher / Far Lower = above 55%.</p> <p>In 2021, the total volume of surface water abstracted by Cemig corresponded to 198,175,449 megaliters.</p> <p>Most of the volume of surface water abstracted (198,175,385 megaliters) is used for electricity generation and, therefore, does not involve water consumption. The amount of surface water abstracted and supplied for administrative consumption in 2021 was equivalent to 63.6 megaliters.</p> <p>Compared to the previous year, the volume of surface water abstracted by Cemig in 2021 was 9.7% lower.</p>
Brackish surface water/Seawater	Not relevant			Abstracting surface brackish water and/or seawater is irrelevant to Cemig's

				<p>operations. Most of the water abstracted from water bodies by the company is associated with the generation of energy by HPPs. The water abstracted for administrative consumption comes from local supply utilities, artesian wells, or direct surface abstraction.</p> <p>As there is no prospect of changes in energy generation and water consumption patterns, this scenario should not change in the short and medium term.</p>
Groundwater – renewable	Relevant	50	Much higher	<p>The following variation classification criterion was used: About the Same = 0% - 10%; Major / Minor = 11% - 55%; Far Higher / Far Lower = above 55%.</p> <p>Cemig abstracts renewable groundwater at some of its facilities (typically substations) located in regions without access to the public supply network. Water is pumped from artesian wells and is used for administrative consumption.</p> <p>In 2021, the volume of groundwater abstracted was equivalent to 50 megaliters, a significant increase (66%) compared to 2020 (30.1 megaliters). This increase is mainly associated with the return of onsite activities, which caused a rise in water</p>

				<p>consumption by workers.</p> <p>In the medium and long term, as there is no prospect of changes in the Company's water consumption patterns, the volume of groundwater abstraction should not change.</p>
Groundwater – non-renewable	Not relevant			<p>Cemig does not use non-renewable groundwater in its operations, and this source is irrelevant to the Company; furthermore, this source is not expected to become relevant.</p>
Produced/Entrained water	Not relevant			<p>Cemig does not produce water in its operations. Therefore, this source is not relevant to the Company. Furthermore, due to the nature of Cemig's business, this source is not expected to become relevant.</p>
Third party sources	Relevant	135	About the same	<p>In practically all of Cemig's administrative facilities, water is consumed from the public supply network in the different municipalities where the Company operates.</p> <p>This consumption is measured by the local sanitation utility and charged directly to Cemig via monthly bills.</p> <p>In 2021, the volume of water from this source was equivalent to 135 megaliters, 4% lower than the volume observed in 2020 (130 megaliters).</p>



				<p>The following variation classification criterion was used: About the Same = 0% - 10%; Major / Minor = 11% - 55%; Far Higher / Far Lower = above 55%.</p>
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## W1.2i

(W1.2i) Provide total water discharge data by destination.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water	Relevant	194,837,454	Lower	<p>The following variation classification criterion was used: About the Same = 0% - 10%; Major / Minor = 11% - 55%; Far Higher / Far Lower = above 55%.</p> <p>In 2021, the total volume of fresh surface water discharged was equivalent to 194,837,454 megaliters. Of this amount, 99.99% refers to the use of water in HPPs to generate electricity, cool down equipment, and occasional spillway releases. The discarded water returns to the watercourse under the same conditions it was abstracted.</p> <p>This volume is relevant for the company, as most energy generated comes from HPPs (96.7% in 2021). As for the previous year, the amount of water was lower than last year's (221,013,310 megaliters) due to the worsening of hydrological conditions. However, in the future (2022-2040), significant variations in this volume and better hydrological conditions are</p>

				expected.
Brackish surface water/seawater	Not relevant			Disposal of surface brackish water and/or seawater is irrelevant to Cemig's operations. As there is no prospect of changes in energy generation and water disposal patterns, this scenario should not change in the short and medium term.
Groundwater	Relevant	88.31	Higher	<p>Approximately 44% of Cemig's sanitary effluents are piped to septic tanks, the remainder being sent to local utilities.</p> <p>As to the company's total discharged volume, the value is insignificant, representing less than 1% of the total. There was a 78% increase in the amount of water in 2021 compared to the volume reported in 2020 (49.51 megaliters).</p> <p>The increase is explained by improved data collection and management policies by the company and by the return of onsite activities. However, as there is no prospect of changes in energy generation and water disposal patterns, this scenario should not change in the medium term.</p>
Third-party destinations	Relevant	111.04	Higher	<p>Excluding the facilities that resort to on-site treatment through septic tanks, the other Cemig facilities send their administrative effluents to be treated by local utility companies (56%).</p> <p>The volume of effluents generated is calculated considering that 80% of the water consumed is converted into sanitary effluent.</p>

				<p>As to the company's total discharged volume, the value is insignificant, representing less than 1% of the total.</p> <p>In 2021, the total volume was 7% higher than in 2020 (104.04 megaliters). The increase in volume is related to the return of in-office activities, which leads to a rise in effluents directed for treatment.</p> <p>As there is no prospect of changes in energy generation and water disposal patterns, this scenario should not change in the medium term.</p>
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## W1.2j

**(W1.2j) Within your direct operations, indicate the highest level(s) to which you treat your discharge.**

	Relevance of treatment level to discharge	Volume (megaliters/year)	Comparison of treated volume with previous reporting year	% of your sites/facilities/operations this volume applies to	Please explain
Tertiary treatment	Not relevant				Cemig generates two classes of liquid effluents: (i) administrative effluents from sanitary uses in buildings and (ii) thermal effluents from the equipment

					<p>cooling processes in HPPs.</p> <p>As for administrative effluents, 56% are directed to local utility companies, and 44% to septic tanks configured as primary treatment.</p> <p>The thermal effluent returns to the water body with no need for on-site treatment because, in case of any water quality degradation, the amount compared to the volume of water that passes through the turbines is minimal. In other words, no effluent treatment is necessary because it has a concentration lower than the parameters</p>
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					established by the current standards.
Secondary treatment	Not relevant				<p>Cemig generates two classes of liquid effluents: (i) administrative effluents from sanitary uses in buildings and (ii) thermal effluents from the equipment cooling processes in HPPs.</p> <p>Administrative effluents generated by Cemig are mostly directly discharged into the public network (56%), and the other part is directed to septic tanks (44%;). The thermal effluent returns to the water body with no need for on-site treatment because, in case of any water quality</p>

					<p>degradation, the amount compared to the volume of water that passes through the turbines is minimal. In other words, no effluent treatment is necessary because it has a concentration lower than the parameters established by the current standards.</p>
Primary treatment only	Relevant	88.31	Much higher	41-50	<p>In 2021, the volume of sanitary effluent from Cemig directed to septic tanks (primary treatment) was equivalent to 88.31 megaliters, a value 78% higher than that reported in 2020 (49.51 megaliters).</p> <p>At Cemig Geração, 100% of the</p>

					<p>sanitary effluent was directed to septic tanks. At Cemig Transmissão, 47% (the remainder is sent to local utility companies).</p> <p>Regarding Cemig Distribuição, all sanitary effluent is sent to local utility companies.</p> <p>As for all Cemig facilities, around 44% of them direct their sanitary effluent to septic tanks for treatment.</p> <p>The quality of sanitary effluents is monitored quarterly (10%), half-yearly (17%), and annually (73%), depending on the facility.</p>
Discharge to the natural	Relevant	194,837,255	Lower	11-20	The total volume of effluent from

<p>environment without treatment</p>					<p>Cemig's plants in 2021 was equivalent to 194,837,255 megaliters, a value 12% higher than that reported in 2020 (221,013,310 megaliters).</p> <p>This volume refers to water use for energy generation, equipment cooling, and eventual spillway releases. The discharged effluent returns to the watercourse under the same chemical conditions it was abstracted.</p> <p>As for Cemig Transmissão e Distribuição and administrative buildings, no untreated effluent is discharged into the environment.</p>
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<p>Discharge to a third party without treatment</p>	<p>Relevant</p>	<p>111.04</p>	<p>About the same</p>	<p>1-10</p>	<p>In 2021, the volume of sanitary effluent generated by Cemig and directed to local utility companies was equivalent to 111.04 megaliters, with no need for on-site treatment.</p> <p>At Cemig Distribuição, all sanitary effluent is sent to local utility companies. At Cemig Transmissão, 53% (the remainder is directed to septic tanks). As for Cemig Geração, the entirety of the sanitary effluent is sent to septic tanks, characterized as primary treatment.</p> <p>Regarding Cemig facilities, about 56% of</p>
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					them are served by a sewage collection network and subsequent treatment by local utility companies.
Other	Not relevant				Not relevant.

### W1.3

**(W1.3) Provide a figure for your organization's total water withdrawal efficiency.**

	Revenue	Total water withdrawal volume (megaliters)	Total water withdrawal efficiency	Anticipated forward trend
Row 1	33,646,118	198,175,634	0.1697792878	The expected trend is increased efficiency of total water abstracted since Cemig no longer intends to invest in the construction of new HPPs, but rather in the maintenance and repowering of existing hydroelectric plants and diversification of energy sources expanding its wind and solar power generation capacity.

### W-EU1.3

**(W-EU1.3) Do you calculate water intensity for your electricity generation activities?**

Yes

### W-EU1.3a

**(W-EU1.3a) Provide the following intensity information associated with your electricity generation activities.**

Water intensity value (m3)	Numerator: water aspect	Denominator	Comparison with previous reporting year	Please explain
13,151	Total water withdrawals	MWh	Lower	Cemig's generating complex predominantly comprises hydroelectric power plants, which generate energy without consuming water.

				<p>Until 2019, Cemig monitored the water intensity indicator only for thermal power stations decommissioned that same year. As of 2020, Cemig began to monitor the relationship between total water abstraction and the electricity generated by hydroelectric power plants.</p> <p>In 2021, the total inflow into Cemig's HPPs was equivalent to 198,175,385 megaliters, and the energy generated by such plants was equivalent to 15,069,777 MWh, resulting in a water intensity corresponding to 13.15 megaliters/MWh, a value 25% lower when compared to the previous year (17.49 megaliters/MWh).</p> <p>Water intensity is expected to continue to decrease in the coming years as a response to the increase in electricity generation efficiency associated with a lower volume of water abstracted.</p>
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## W2. Business impacts

### W2.1

**(W2.1) Has your organization experienced any detrimental water-related impacts?**

No

### W2.2

**(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?**

No

## W3. Procedures

### W-EU3.1

**(W-EU3.1) How does your organization identify and classify potential water pollutants associated with your business activities in the electric utilities sector that could have a detrimental impact on water ecosystems or human health?**

The Company monitors water quality under the guidelines of the Company's biodiversity policy, always with a focus on developing more effective strategies for biodiversity conservation and compliance with state and federal decisions. This monitoring program is an essential tool in identifying and collecting information for assessing and controlling environmental impacts on aquatic ecosystems at all project stages – from project design to operation. In addition, Cemig has a Service Instruction – IS62 that classifies minimum requirements for environmental suitability for classifying impacts on aquatic ecosystems.

The water quality of Cemig's reservoirs is regularly monitored through a network that includes 46 reservoirs and 176 stations that collect physicochemical and biological data in the main hydrographic basins of Minas Gerais (Paranaíba River, Grande River, São Francisco River, Doce River, and Paraíba do Sul River basins). Upstream and downstream monitoring of the dam allows the Company to identify any impact on watercourses and assess the project's effluent management quality to ensure that the effluent parameters meet those specified by CONAMA Resolution 357/2005, the Brazilian legal standard for the management of surface water quality, CONAMA Resolution 274/2000, which establishes levels for bathing and ensure the conditions necessary for primary contact recreation and, at the state level, the joint Normative COPAM-CERH-MG Deliberation no. 1/2008 must also be observed.

Cemig monitors the quality of the surface waters of its reservoirs by following a sampling plan composed of a basic network and a directed network. The basic network is characterized by revealing only the momentary conditions of the sampling procedures, therefore requiring a quarterly collection frequency to explain the phenomena. The parameters monitored by the basic network are depth, water temperature, turbidity, electrical conductivity, pH, dissolved oxygen (DO), and redox potential. The directed network is characterized by presenting a history of environmental conditions and analyzing the effects so that samples are collected yearly in the dry season. The following physicochemical and biological parameters are tested: depth, air temperature, water temperature, turbidity, electrical conductivity, ph, dissolved oxygen, dissolved oxygen deficit, transparency, redox potential, total chlorine, chlorophyll a, true color, thermotolerant coliforms, biochemical oxygen demand, chemical oxygen demand, dissolved iron, total phosphorus, dissolved manganese, nitrate, total nitrogen, oils and greases, surface-active substances that react with methylene blue, total sulfate, total dissolved solids, suspended solids, total solids, phytoplankton, cyanobacterial density, zooplankton, benthic macroinvertebrates, aquatic macrophytes.

The degree of degradation of water resources is measured and monitored through the Water Quality Index (WQI). The WQI considers nine assessment parameters (pH, BOD, thermotolerant coliforms, total nitrogen, total phosphorus, temperature, turbidity, total residue, dissolved oxygen) and is calculated by the weighted product of water quality corresponding to these variables. Through the Double Diamond methodology applied to part of Cemig's environmental area, the proposition to improve and increase the scope of this system emerged. This robust identification, assessment, and control system of environmental impacts allows for greater agility in controlling operational risks in terms of protecting biodiversity and social pressure. It also improves communication and reduces asymmetry between organizations and their stakeholders, such as suppliers, clients, investors, civil society, government, and the scientific community.

The Water Quality team monitors the companies hired to conduct the monitoring through internal audits of the collections, databases, and analysis of the reports issued for legal purposes. Another way of controlling water quality is the EOR procedure – Environmental

Occurrence Report - an internal Cemig form used to report and record environmental occurrences at the Company's facilities. Concerning possible water pollution events, the operation team completes the EOR to report incidents involving leakage of lube oils and other toxic products in the water and point out the causes and actions taken to eliminate the problem. Concerning the main water-related impacts faced by Cemig, we highlight the change in water quality through changes in physicochemical parameters, such as the increase in organic and mineral load in the water, the excessive growth of cyanobacteria, aquatic macrophytes, and the invasion of exotic species and grease and oil spills. In addition, the Company applies a review questionnaire to its suppliers, which includes pollution prevention measures and questions that guarantee the status of suppliers in terms of preventing the spillage of hazardous substances (oil, gas, liquids).

## W-EU3.1a

**(W-EU3.1a) Describe how your organization minimizes the adverse impacts of potential water pollutants associated with your activities in the electric utilities sector on water ecosystems or human health.**

Potential water pollutant	Description of water pollutant and potential impacts	Management procedures	Please explain
Hydrocarbons	<p>The main hydrocarbons used in Cemig's processes are:</p> <ul style="list-style-type: none"> <li>• mineral insulating oils - fluids used to insulate, cool down, and protect the components of electrical equipment (main insulating medium used in most electrical equipment);</li> <li>• lube oils and greases, which are thickened fluids (semi-solid or solid consistency) used to lubricate, cool down, clean, seal, transmit power and reduce equipment wear in electricity generation systems and Transmission and Distribution equipment;</li> <li>• aviation kerosene, used primarily as fuel for helicopters for line inspections;</li> </ul>	<p>Compliance with effluent quality standards</p> <p>Measures to prevent spillage, leaching, and leakages</p> <p>Emergency preparedness</p> <p>Management procedure under development</p>	<p>Cemig's main risk of deleterious impact from water pollution is the presence of oil in the waters of the HPP reservoirs. Service instructions and quality standards guide all operational procedures within the Plant. In addition, the Emergency Action Plan (EAP) contains guidelines to hold back spilled substances, and any incident involving contamination or leakage is recorded and consolidated in an Environmental Occurrence Report - EOR.</p> <p>The main procedures associated with this topic are:</p> <ul style="list-style-type: none"> <li>• IS-62 - Instruction for Minimum Requirements for Environmental Adequacy and Compliance Services</li> <li>• Cemig's Internal Policy - Insulating Oil and Ascarel - Guidelines for</li> </ul>

<ul style="list-style-type: none"> <li>• diesel oil, used mainly as a fuel in vehicles and emergency generation systems;</li> <li>• gasoline, used mainly as a fuel in vehicles and chainsaws for tree pruning.</li> </ul> <p>These hydrocarbons can reach water bodies after accidents and various environmental events (spills or leaks, severe failures or defects in operating equipment, explosion, handling, storage or transportation of equipment, or preventive and corrective maintenance), and inappropriate disposal. The release of large amounts of these materials into water bodies can cause undesirable environmental effects, such as a decrease in the availability of oxygen in the water due to the formation of an oily layer on the surface that sticks to animals and suffocates them.</p>	<p>Environmental Adequacy</p> <ul style="list-style-type: none"> <li>• Cemig's Internal Policy - Lube Oil and Grease Applied to the Company's Industrial Facilities - Environmental Adequacy Guidelines</li> <li>• DPR-H-87 (Environmental Norms and Procedures - Standardization), among which the following stand out: Oil-Contaminated Solid Waste - Handling, transportation, storage, and final disposal and General Procedures for Oil Handling</li> <li>• IT-G.02.01-001b - Job Instruction - Environmental Guidelines and Controls - applicable to Distribution,</li> <li>• PAE-DDC-SIG-001h - ENVIRONMENTAL, HEALTH AND SAFETY EMERGENCY RESPONSE PROCEDURE - applicable to Distribution</li> <li>• Emergency Preparedness and Response Procedure – DC-08A;</li> <li>• PAE-AT-0004 - LEAK OR SPILL OF MINERAL OIL - applicable to Transmission;</li> <li>• Emergency response procedures for each AG facility.</li> </ul> <p>- Conformities:</p> <p>Cemig D: Joint Normative COPAM/CERH-MG Resolution No. 01, of May 5, 2008;</p> <p>Cemig T: CONAMA Resolution No. 430, of 05/13/2011;</p> <p>Cemig G: CONAMA No. 430/2011</p>
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			<p>and Joint Normative COPAM/CERH-MG Resolution No. 01/2008</p> <p>- Measures:</p> <p>Containment and water/oil separation systems (IS 62)</p> <p>- Readiness:</p> <p>EAP of the facilities and hired specialized company.</p> <p>- Procedure under development: In the emergency response contract, there is provision for the preparation or revision of Emergency Response Plans for the transportation, handling and storage of products or hazardous waste and also the operation of equipment or similar that may contain hazardous materials, for all Cemig's vehicles and installations.</p>
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### W3.3

**(W3.3) Does your organization undertake a water-related risk assessment?**

Yes, water-related risks are assessed

### W3.3a

**(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.**

**Value chain stage**

Direct operations

**Coverage**

Full

**Risk assessment procedure**

Water risks are assessed in an environmental risk assessment

### **Frequency of assessment**

More than once a year

### **How far into the future are risks considered?**

More than 6 years

### **Type of tools and methods used**

Tools on the market  
Enterprise risk management

### **Tools and methods used**

Water Footprint Network Assessment tool  
COSO Enterprise Risk Management Framework  
Enterprise Risk Management  
ISO 31000 Risk Management Standard  
Other, please specify  
The SAP Risk Management Software

### **Contextual issues considered**

Water availability at a basin/catchment level  
Water quality at a basin/catchment level  
Stakeholder conflicts concerning water resources at a basin/catchment level  
Implications of water on your key commodities/raw materials  
Water regulatory frameworks  
Status of ecosystems and habitats  
Access to fully-functioning, safely managed WASH services for all employees

### **Stakeholders considered**

Customers  
Employees  
Investors  
Local communities  
NGOs  
Regulators  
Suppliers  
Water utilities at a local level  
Other water users at the basin/catchment level

### **Comment**

Cemig has a risk management policy, approved by the Board of Directors, that guides not only the companies Cemig D and Cemig GT but also all its wholly-owned subsidiaries. It also has a risk management software, SAP RM (Risk Management), which enables a continuous risk mapping process as information is updated, and controls and plans are reviewed by those responsible for each activity within the system.

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### **Value chain stage**



Supply chain

**Coverage**

Partial

**Risk assessment procedure**

Water risks are assessed in an environmental risk assessment

**Frequency of assessment**

More than once a year

**How far into the future are risks considered?**

More than 6 years

**Type of tools and methods used**

Enterprise risk management

**Tools and methods used**

COSO Enterprise Risk Management Framework

Enterprise Risk Management

ISO 31000 Risk Management Standard

Other, please specify

The SAP Risk Management Software

**Contextual issues considered**

Water availability at a basin/catchment level

Water quality at a basin/catchment level

Stakeholder conflicts concerning water resources at a basin/catchment level

Implications of water on your key commodities/raw materials

Water regulatory frameworks

Access to fully-functioning, safely managed WASH services for all employees

**Stakeholders considered**

Investors

Regulators

Suppliers

Other water users at the basin/catchment level

**Comment**

Cemig has procedures that verify the compliance of environmental aspects by suppliers and the existence of hiring risks. The Company inspects and audits its supply chain.

These audits are carried out based on prioritization criteria to identify the most critical suppliers, and only they are considered when identifying water risks.

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**Value chain stage**

Other stages of the value chain

**Coverage**

Full

**Risk assessment procedure**

Water risks are assessed in an environmental risk assessment

**Frequency of assessment**

More than once a year

**How far into the future are risks considered?**

More than 6 years

**Type of tools and methods used**

Enterprise risk management

**Tools and methods used**

COSO Enterprise Risk Management Framework

Enterprise Risk Management

ISO 31000 Risk Management Standard

Other, please specify

The SAP Risk Management Software

**Contextual issues considered**

Water availability at a basin/catchment level

Water quality at a basin/catchment level

Stakeholder conflicts concerning water resources at a basin/catchment level

Water regulatory frameworks

Status of ecosystems and habitats

Access to fully-functioning, safely managed WASH services for all employees

**Stakeholders considered**

Customers

Employees

Investors

Local communities

NGOs

Regulators

Suppliers

Water utilities at a local level

Other water users at the basin/catchment level

**Comment**

In the Company's value chain, the scenarios assessed as to water risks are those subject to impacts associated with regulatory changes and changes in the pricing structure. These impacts are the most relevant for the operation of Cemig projects. As a monitoring measure, Cemig participates in the Water Resources Councils and Basin Committees, Technical Chambers, Work Groups, and Sectoral Associations, following the regulatory and tariff scenario, and contributes to the decision-making process regarding the regulation of the uses of water in the basins and their respective impacts.

## W3.3b

### **(W3.3b) Describe your organization's process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.**

Risk management planning considers factors that may harm the health and safety of employees, suppliers, customers, the general population, and the environment. The risks inherent to Cemig's business activities are assessed according to their probability of occurrence and impact on the various businesses in the value chain.

Based on the guidelines established in the Risk Management Policy, Cemig has structured a risk management program that allows mapping and assessing both strategic and operational risks. The purpose is to provide information to Senior Management for decision-making regarding the most relevant risks and opportunities.

At Cemig, risks and opportunities are ranked based on financial impacts, intangible impacts, probability of occurrence, and relevance, assigned percentage estimates. This rating creates a matrix of risk exposure and opportunities through which risks are prioritized. The system calculates the inherent risk/opportunity (without management actions), the cost/return rate, the residual risk/opportunity (after implementation of controls), and the planned residual risk/opportunity (after implementation of measures.) The variable "financial impact," used to define the risk/opportunity position in the exposure matrix, is updated according to the control and measures adopted. This procedure allows prioritizing decision-making based on sound financial analysis of scenarios with and without risk/opportunity management. The metrics used are reviewed and updated annually. This analysis currently covers only the Company's direct operations.

Cemig's risks are classified according to type, which include Process Risks (associated with one of the organization's processes), Macroprocess Risks (associated with more than one organization's process) and Top Risks (macroprocess risks identified by the Corporate Risk Monitoring Committee - CMRS, Executive Board and Board of Directors), and regarding the nature of the risk (business, economic-financial, legal compliance, compliance, operational, socio-environmental).

The risk management process is structured as 5 steps: planning, risk identification, assessment, treatment and monitoring.

To address one of the leading water risks and to ensure the safety of the dams operated and maintained by Cemig, the Company uses a methodology which establishes the National Policy on Dam Safety, and its associated regulations (Aneel Normative Resolution No. 696/2015). Following its preventive stance, Cemig adopts a storm location system, a Telemetry and Hydrometeorological Monitoring System, mathematical hydrological simulation models and weather and climate forecasting to support its decision-making process regarding resource use. The Company also operates the hydrometeorological network and monitors 372 variables related to rainfall, levels and flows in water courses, levels of reservoirs and rivers, and weather stations that monitor factors such as temperature, air humidity, speed, and direction of the wind, solar radiation, and atmospheric pressure. All information is monitored in real-time by the Cemig central unit in Belo Horizonte - MG.

Based on the Risk Management System, Cemig analyzes the scenarios and determines the degree of exposure of the business and the risk associated with multiple uses. Short, medium,

and long-term meteorological and climate models are used. Furthermore, based on a business risk management system, Cemig reviews scenarios and determines exposure to financial risk, considering the likelihood of occurrence and its impact, and develops control measures.

As for risk assessment, Cemig monitors and follows up on conflicts with stakeholders through its active participation in Water Resources Councils, Basin Committees, Technical Chambers, and Working Groups, also attended by various users of hydrographic basins and other stakeholders. The company also monitors the news published by the media and receives requests during wet or dry periods, attempting to settle any conflicts with communities located in hydrographic basins that accommodate its HPPs.

Cemig coordinates the Proximity Program, certified to ISO 9001, which is committed to working jointly with the main stakeholders to identify conflicts linked to water use by thirds and promote social development in neighboring communities. Stakeholder engagement is carried out in the hydrographic basins where potential conflicts are mapped.

As for investors, Cemig holds meetings and conferences to discuss the current storage capacity of reservoirs and possible strategies for buying and selling energy. For the operation of the reservoirs, Cemig mapped the leading agents of the communities located upstream and downstream from the plants, constantly proactively reporting on flood and severe drought situations. These situations directly affect communities; therefore, engaging them in water risk assessments is essential.

## W4. Risks and opportunities

### W4.1

**(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?**

Yes, both in direct operations and the rest of our value chain

### W4.1a

**(W4.1a) 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 and/or strategic decisions that may not turn out successful. These risks are classified based on the financial impact if they materialize, using net revenue loss as a measurement metric.

The strategic risks prioritized by Cemig's Board of Directors are called Top Risks. Apart from the financial impact, while identifying and reviewing Top Risks, all possible effects are assessed regarding image and reputation, environmental issues, and compliance.

The financial impacts of risks are classified into six levels, ranging from very low to catastrophic. The very low economic impacts require interventions within the Company's governance and at the level of deliberation by the board. The amount associated with these risks ranges from R\$0 – 15 million in terms of financial impact. Impacts considered catastrophic are those that the Company will have difficulty overcoming over the next five years since they are very comprehensive and irreversible and could exceed R\$ 1 billion.

Top Risk mapping follows the procedure detailed below:

- 1. Planning:** alignment between risk management and the Company's strategic objectives;
- 2. Identification:** understanding the scope, causes, and impacts of the risk;
- 3. Analysis:** estimate of the likelihood of occurrence of the risks and potential damage caused by the impacts identified in the previous step;
- 4. Treatment:** survey of all actions and controls to mitigate the risk and the mitigating effect of said actions on the mapped impacts;
- 5. Monitoring:** follow-up of mitigating initiatives and risk validation with the source.

Once identified, the Top Risks and treatment recommendations by the Corporate Risk Monitoring Committee – CMRC are reported to Senior Management.

One of the assessed risks with potential financial impact is directly related to water availability. As almost all of Cemig's generating complex is made up of HPPs, changes in total rainfall and dispersion impact some of the Company's activities.

The year 2021 was characterized by the water crisis in the reservoirs of large HPPs located in the central-south region of the country, when flows reached record low levels during the dry season, slightly recovering in the fourth quarter of that year. This scarcity regime caused the depletion of several reservoirs in Southeastern Brazil, among which Emborcação and Nova Ponte. As for the latter, it was necessary to intensify the management actions of multiple water uses, such as participation in public hearings held at the Legislative Assembly of Minas Gerais and at ONS, face-to-face meetings, and onsite actions to monitor the ichthyofauna.

This situation puts pressure on costs related to hydrological risk (GSF) and energy prices in the short-term market (PLD). PLD (Settlement Price of Differences) is directly affected by the hydrological regime, reaching higher levels in periods of drought. In 2021, the average value of the settlement price of differences (PLD) rose 58.19% in the Southeast/Midwest, averaging R\$279.61/MWh in 2021 compared to R\$176.98/MWh in 2020, given the water scarcity scenario.

The lowest average monthly PLD that year was recorded in December 2021, closing at R\$66.67/MWh in the Southeast submarkets. The GSF (Generation Scaling Factor) had a lower average value in 2021 compared to 2020, averaging 0.79 against 0.83 in 2020.

Under an unfavorable hydrological scenario, hydroelectric generation is reduced; therefore, companies may find it challenging to meet 100% of the contracted target. Thus, the National System Operator (ONS) is obliged to dispatch thermal plants to meet part of the national demand. The greater the water deficit, the lower the energy generated in these plants, forcing the Company to purchase energy in the short-term market to meet contractual requirements. Resorting to the short-term market translates into higher energy generation costs for Cemig, and this scenario will always impact the Company's revenue.

Occasionally, opportunities are identified and developed according to the Company's objectives and business plans, especially concerning process efficiency.

## W4.1b

**(W4.1b) What is the total number of facilities exposed to water risks with the potential to have a substantive financial or strategic impact on your business, and what proportion of your company-wide facilities does this represent?**

Total number of facilities	% company-wide facilities	Comment

	exposed to water risk	this represents	
Row 1	1	1-25	<p>The flow granted to a hydroelectric project should be such to guarantee the production of electric energy in the long term and thus preserve its business plan. This flow is part of the Water Resources Plan of the Hydrographic Basin, which establishes the percentage of flow destined for each user.</p> <p>Usually, granting the right to use water resources includes forecasts of the flow of consumptive uses in the drainage area upstream from the HPP. However, future consumptive uses are expected to increase over the years. In addition, the projections above may be revised in subsequent years according to population growth and the development of economic activities in the areas upstream from the hydroelectric power plant.</p> <p>In the first ordinary review of the guaranteed hydroelectric output of centrally dispatched hydroelectric power plants (ROGF 1), which took place in 2017 (guaranteed output effective as of January 1, 2018), consumptive uses were adopted, taking 2016 as the reference year. In the next ordinary guaranteed output review (ROGF 2), which will take place in 2022 (guaranteed output effective as of January 1, 2023), consumptive uses will be employed, considering 2023 as the reference year. The ROGF 2 consumptive uses have been recently published by Public Consultation 123 of the Ministry of Mines and Energy (CP MME 123), and, for most HPPs, they are greater than those used in ROGF 1 due to both the expected temporal evolution of consumptive uses and some revised projections. As for the reference year of 2023, with some exceptions, the consumptive uses published by CP MME 123 are the same as those outlined by ANA Resolution 93 of August 23, 2021.</p> <p>As for Cemig's HPPs, the increase in consumptive uses was more evident for the Emborcação HPP. The annual average of cumulative consumptive uses upstream from the Emborcação HPP, which had already been boosted up in ROGF 1, increased by 66.9% in ROGF 2, which should impact the guaranteed output of this HPP by approximately - 3.1%. This fact stems primarily from the tremendous pressure put on that hydrographic basin in recent years by upstream irrigation users; flows of consumptive uses are</p>

			expected to increase even more as water is abstracted for irrigation purposes.
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## W4.1c

**(W4.1c) By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive financial or strategic impact on your business, and what is the potential business impact associated with those facilities?**

### Country/Area & River basin

Brazil

Other, please specify

Rio Paranaíba

### Number of facilities exposed to water risk

1

### % company-wide facilities this represents

1-25

### % company's annual electricity generation that could be affected by these facilities

Less than 1%

### % company's total global revenue that could be affected

Less than 1%

### Comment

The estimated impact on the guaranteed output of the Emborcação HPPs due to the increase in water abstracted for irrigation purposes upstream from the plant in the following GF review is about 22 MW on average. This amount corresponds to less than 1% of Cemig's guaranteed output and would have a financial impact on Cemig's total revenue of less than 1%.

## W4.2

**(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.**

### Country/Area & River basin

Brazil

Other, please specify

Rio Paranaíba

**Type of risk & Primary risk driver**

Acute physical  
Other, please specify  
Severe weather events

**Primary potential impact**

Reduction or disruption in production capacity

**Company-specific description**

The occurrence of heavy rains over a short period, accompanied by gales and lightning, can damage the lines that carry and distribute electricity, leading to their unavailability and increased Cemig's costs, caused by the reimbursement to consumers after power outage events (DEC and FEC indicators).

In addition, there may be a change in the average amount of rainfall, changing the amount of water that reaches the HPP reservoirs. As Cemig's electricity production is mainly hydraulic, these changes may reduce its generation capacity. This reduction affects Cemig D and GT businesses simultaneously.

**Timeframe**

Current up to one year

**Magnitude of potential impact**

High

**Likelihood**

Likely

**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**

To define the financial impact, it is necessary to compose a possible scenario of a combination of adverse factors capable of affecting energy purchases by distribution companies and the operation of generation companies, including (i) an adverse rainfall period resulting in high spot prices; (ii) seasonalization of the guaranteed output of the Energy Reallocation Mechanism (MRE), allocating large volumes of energy in a certain period of the year, resulting in very low MRE adjustment factors. In these scenarios, the factors reflect a significant increase in the energy cost charged to distributors, thus affecting the company's cash flow.



The risk of a mismatch in Cemig Distribuição's cash flow and reduced hydroelectric energy production (Cemig GT) is considered high according to the Company's Risk Management Policy. According to Cemig's risk management, the risk in question was classified as impact 4 - High in the Risk Matrix, on a scale of six levels of impact, ranging from 1 - Not applicable to 6 - Catastrophic.

For each level of the impact scale, a value of potential financial impact is defined based on Cemig's Corporate Risk Matrix. For example, the impact value defined for Level 4 - High risk ranged from 150 to 500 million.

### **Primary response to risk**

Use risk transfer instruments

### **Description of response**

The Company's Management constantly manages its energy purchase agreements to mitigate the risk of exposure to the short-term market (STM).

Monitoring the Generation Scaling Factor (GSF), which relates hydraulic generation to the seasonal guaranteed plant output, provides a perspective on the exposure of hydroelectric agents to the short-term market.

In Brazil, the hydrological risk that affects generation agents is shared among all agents subject to the centralized distribution of the National System Operator (ONS) through a financial instrument called the Energy Reallocation Mechanism (MRE). Cemig's HPPs are subject to such a mechanism.

Regarding Cemig's risk management, the company has a Top Risk called "loss of guaranteed output".

An Energy Planning team is responsible for assessing the progress of regulatory aspects since the last guaranteed output review, quantifying the possible impacts, and mitigating risks through contributions from public consultations, be they internal or submitted via associations representing the generators.

### **Cost of response**

17,146,683

### **Explanation of cost of response**

The current management cost is associated with the remuneration of the electric energy planning, purchase and sales team (70 people). It is a recurring cost, and the employees are dedicated to this risk and other processes concerning the sale of energy.

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### **Country/Area & River basin**

Brazil

Other, please specify

In all watershed Cemig has hydroelectric generation projects

**Type of risk & Primary risk driver**

Regulatory  
Regulatory uncertainty

**Primary potential impact**

Increased operating costs

**Company-specific description**

Charging large HPPs for water use has already been regulated, and no regulatory changes are expected in the short and medium term.

Small Hydroelectric Power Plants are not charged for water use under current legislation. Assuming that a regulatory change suspends the cost-free use of water by SHPs (plants with an installed capacity of less than 30MW), Cemig will incur an additional cost for its generating complex.

Cemig operates 32 SHPs, representing 3% of the company's installed capacity. If the cost to run the SHPs rises due to a potential tax increase, the risk would lead to a potential financial impact on the company's direct operations, increasing the cost of energy generation operations.

**Timeframe**

More than 6 years

**Magnitude of potential impact**

Low

**Likelihood**

Unlikely

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

2,651,346.48

**Potential financial impact figure - minimum (currency)**

**Potential financial impact figure - maximum (currency)**

**Explanation of financial impact**

The financial impact refers to the estimate of tax collected for Small Hydroelectric Power Plants (SHPs).

For large HPPs, this value is calculated by the following equation (7.00% x energy

generated in MWh x TAR) ( $7\% \times 452,093.33 \times 83.78$ ).

The 2021 Updated Reference Tariff (TAR) is R\$83.78/MWh, i.e., 5% variation compared to 2020 (R\$79.62/MWh).

This calculation was used to estimate the potential financial impact of eventual SHP taxation, amounting to R\$2,651,346.48. The financial impact is considered insignificant for the Company.

### **Primary response to risk**

Engage with regulators/policymakers

### **Description of response**

Cemig's role in managing the risks of regulatory changes is via its participation in the National Water Resources Council, the State Water Resources Council-MG, Hydrographic Basin Committees, Technical Chambers and Working Groups, Class Associations (ABRAGE), public hearings, where the Master Plans for Hydrographic Basins, resolutions, bills, normative deliberations and regulations for granting and charging for the use of water resources are discussed, written and approved.

In these environments, the expertise of Cemig specialists is used to assist in developing policies and guidelines for regulating water use in the basins.

In parallel, the Company has an institutional relationship and sector regulation department that monitors regulatory changes and summons the water resources management team whenever the topic is relevant.

Estimates of potential regulatory changes include changes to the rules for granting concessions, financial compensation, charging mechanisms, and pricing structure.

### **Cost of response**

423,299.8

### **Explanation of cost of response**

The costs to manage the risk of regulatory changes are associated with the remuneration of the water resources management team (28 people), the Federal Institutional Relationship Management team (8 people), and the Regulation Superintendence (34 people).

## **W4.2a**

**(W4.2a) Provide details of risks identified within your value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.**

---

**Country/Area & River basin**

Brazil

Other, please specify

In all Cemig hydropower plants

**Stage of value chain**

Use phase

**Type of risk & Primary risk driver**

Reputation & markets

Changes in consumer behavior

**Primary potential impact**

Reduced revenues from lower sales/output

**Company-specific description**

Unfavorable hydrological scenarios lead to constant increases in the price of energy which, associated with the adverse economic scenario in the country, increases the risk of default by consumers or energy theft.

As for Cemig's indirect operations, this change in the consumer behavior can impact the Company's revenue, which, together with default, directly impacts Cemig D's cash flow.

The Company must pay, whether receiving payment from final consumers or not, the energy bill charged by the generators, the transmission service, the electric sector charges, and the PIS/COFINS and ICMS taxes levied on energy.

**Timeframe**

Current up to one year

**Magnitude of potential impact**

Medium-high

**Likelihood**

Virtually certain

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

1,248,270,977.8

**Potential financial impact figure - minimum (currency)**

**Potential financial impact figure - maximum (currency)**

**Explanation of financial impact**

The financial impact is related to the loss of revenue and, consequently, puts pressure on Cemig Distribuição's cash flow due to the risk of not covering the costs for servicing

and operating the system.

The financial impact refers to 2021 and is equivalent to the total outstanding receivables owed by customers, traders, and energy distribution companies. The amount of outstanding receivables is disclosed on Cemig's Form 20F, page 27.

[<https://api.mziq.com/mzfilemanager/v2/d/716a131f-9624-452c->]

### **Primary response to risk**

Direct operations

Other, please specify

Engagement with consumers

### **Description of response**

To mitigate this risk, the Company uses several communication and collection tools to inhibit the increase in delinquency. Among the measures adopted, the following stand out: phone calls, e-mails, SMS messages, billing letters, registration as delinquent payer, judicial collection, and termination of electricity supply to defaulting customers.

In 2021, the Company removed more than 3,700 illegal connections and promoted various combat actions, such as 384,000 inspections of consumer units in the Company's concession area.

Regularization of approximately 86 thousand consumer units lacking a contract and consuming electricity, replacement of 34 thousand obsolete meters, and intensification of collections involving irregular consumption

Expansion of payment modalities, with the inclusion of PIX with QR Code on all invoices, with approximately 1 million invoices being collected in this modality, and the possibility of debit payment via credit card through digital channels and directly with the field service teams.

### **Cost of response**

82,000,000

### **Explanation of cost of response**

The costs involve the remuneration of the team responsible for measuring delinquency, disconnection, reconnection, and measures to reduce commercial losses.

Aneel Resolutions No. 928 and 936 extended the suspension of energy supply to low-income residential consumers and other specific consumers until December 31, 2021.

Measures were intensified to mitigate default risks, such as a specific campaign to negotiate with customers, including those with a momentary impediment to suspension of energy supply and intensification of individualized actions for regular collection, and implementation of diversified means of payment available to consumers.

## W4.3

**(W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?**

Yes, we have identified opportunities, and some/all are being realized

## W4.3a

**(W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.**

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### **Type of opportunity**

Products and services

### **Primary water-related opportunity**

New R&D opportunities

### **Company-specific description & strategy to realize opportunity**

The opportunity is related to the expansion and development of distributed generation by Cemig. With this strategy, Cemig reduces its exposure to risks associated with fluctuations in energy purchases due to adverse hydrological scenarios and guarantees revenue with the new distributed generation service portfolio.

In 2019, Cemig SIM was created due to the synergy of Cemig Geração Distribuída and Efficientia. Cemig SIM focuses on innovation and energy solutions, including the provision of distributed generation services through the installation of solar farms in the State of Minas Gerais. It also offers energy efficiency, energy storage, and electric mobility solutions.

In 2021, Cemig SIM invested approximately R\$12.5 million in a 49% interest in a photovoltaic solar energy generation plant and sold 4,452 MWh/month from 14 photovoltaic generation plants located in the municipalities of Bonfinópolis, Brasilândia, Corinto, Janaúba, Lagoa Grande, Lontra, Manga, Mato Verde, Mirabela, Porteirinha, Campo Lindo 1, Campo Lindo 2, Apolo 1 and Olaria 1 in Minas Gerais.

The company hit the mark of 4,752 consumer units of solar energy by subscription in 2021 and plans to invest, from 2022 to 2025, R\$1 billion in the Distributed Generation segment.

### **Estimated timeframe for realization**

More than 6 years

### **Magnitude of potential financial impact**

Medium

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

6,840,505.81

**Potential financial impact figure – minimum (currency)**

**Potential financial impact figure – maximum (currency)**

**Explanation of financial impact**

The financial impact refers to Cemig's gross revenue from selling products and services in 2021.

In 2021, the energy generated and compensated for Cemig SIM customers allowed a reduction in the emission of 6,752 tons of CO<sub>2</sub> in the atmosphere.

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**Type of opportunity**

Other

**Primary water-related opportunity**

Other, please specify

Relationship with the community

**Company-specific description & strategy to realize opportunity**

Cemig created the Proximity Program to strengthen the relationship and, together with other Company programs, bring technical knowledge and promote the social development of neighboring communities. Meetings are held, and company specialists give objective technical lectures to clarify operational aspects of reservoirs and dams (operational and structural safety), details of the Dam Emergency Action Plans (EAPs), and additional information on the socio-environmental actions of the projects developed by Cemig are also provided.

In 2021, under the impact of health restrictions due to the Covid-19 pandemic, meetings with neighboring communities took place virtually. Five webinars were held, with discussions focused on the "2021 Water Crisis", for the Nova Ponte, Emborcação, Irapé, Queimado, and Rosal projects.

The Proximity Program banner was also part of the virtual meetings and workshops on integrating the dam EAPs and PLANCONs (Municipal Contingency Plans) with municipal civil defense offices. Also, in 2021, 40 meetings/workshops were held with civil defense agencies (COMPDECs) from 52 municipalities. The dam EAPs were officially delivered and updated with dam break and intense rainfall studies outlining meeting points and escape routes.

**Estimated timeframe for realization**

Current - up to 1 year

**Magnitude of potential financial impact**

Low

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

437,484.86

**Potential financial impact figure – minimum (currency)**

**Potential financial impact figure – maximum (currency)**

**Explanation of financial impact**

The financial impact was estimated by calculating the cost of spontaneous media and of each news favorable to the Proximity Program, considering the dissemination of the Program in newspapers, websites, radio, TV, and other media. In 2021, the cost of news and disclosures related to the Cemig Proximity Program totaled R\$ 437,484.86.

## W5. Facility-level water accounting

### W5.1

**(W5.1) For each facility referenced in W4.1c, provide coordinates, water accounting data, and a comparison with the previous reporting year.**

---

**Facility reference number**

Facility 1

**Facility name (optional)**

UHE Emborcação

**Country/Area & River basin**

Brazil

Other, please specify

Rio Paranaíba

**Latitude**

-18.451111

**Longitude**

-47.993888



**Located in area with water stress**

Yes

**Primary power generation source for your electricity generation at this facility**

Hydropower

**Total water withdrawals at this facility (megaliters/year)**

12,144,400

**Comparison of total withdrawals with previous reporting year**

Lower

**Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes**

12,144,400

**Withdrawals from brackish surface water/seawater**

0

**Withdrawals from groundwater - renewable**

0

**Withdrawals from groundwater - non-renewable**

0

**Withdrawals from produced/entrained water**

0

**Withdrawals from third party sources**

0

**Total water discharges at this facility (megaliters/year)**

9,966,353

**Comparison of total discharges with previous reporting year**

Lower

**Discharges to fresh surface water**

9,966,353

**Discharges to brackish surface water/seawater**

0

**Discharges to groundwater**

0

**Discharges to third party destinations**

0

**Total water consumption at this facility (megaliters/year)**

2,178,047

## Comparison of total consumption with previous reporting year

Higher

### Please explain

Water is abstracted from the HPP reservoirs for three purposes.

1. The water is abstracted directly from the river for energy generation; in this case, all the water captured is returned to the river.
2. The water is abstracted directly from the river to cool down the generation equipment; in this case, all the water abstracted is returned to the river.
3. The water is abstracted from an underground source and supplied by the municipal utility company for administrative consumption; in this case, 80% of the water abstracted is discarded in the public sanitation network.

In 2021, the plants generated less energy due to the lower inflows recorded that year.

Its important to mention that UHE Nova Ponte e UHE Queimado are also exposed to water-related risks. However, UHE Emborcação is considered the most relevant and the one which financial and operational impacts can be more relevant.

## W5.1a

**(W5.1a) For the facilities referenced in W5.1, what proportion of water accounting data has been third party verified?**

### Water withdrawals – total volumes

---

#### % verified

76-100

#### Verification standard used

The ONS hydrology team thoroughly compiles the inflow data so that consistent data on the HPP operation can be obtained and to support the creation of a flow time series for each generation project that will feed the operation planning models.

The data were reviewed by the external audit of the 2021 Annual and Sustainability Report issued by the Bureau Veritas Certification Brazil (Bureau Veritas).

The scope of the work covered the Global Reporting Initiative Standards and Principles for Sustainability Reporting in terms of the GRI Standards, including the Supplement for the electricity sector. Bureau Veritas developed a set of interviews and evidence checks to verify information from the various GRI indicators and topics.

### Water withdrawals – volume by source

---

**% verified**

76-100

**Verification standard used**

The data were verified within the scope of the external audit of the 2021 Annual and Sustainability Report, carried out by Bureau Veritas Certification Brazil (Bureau Veritas).

The scope of the verification covered the Global Reporting Initiative Standards and Principles for Sustainability Reporting in terms of the GRI Standards, including the Supplement for the electricity sector. Bureau Veritas developed a set of interviews and evidence checks to verify information from the various GRI indicators and topics.

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**Water withdrawals – quality by standard water quality parameters**

**% verified**

76-100

**Verification standard used**

The company has an Environmental Management System (ISO 14001) and a Quality Management System (ISO 9001) to check for drinking water standards for human consumption.

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**Water discharges – total volumes**

**% verified**

76-100

**Verification standard used**

The inflow data are thoroughly compiled by the ONS hydrology team so that consistent data on the HPP operation can be obtained and support the creation of a flow time series for each generation project that will feed the operation planning models.

The data were reviewed by the external audit of the 2021 Annual and Sustainability Report issued by the Bureau Veritas Certification Brazil (Bureau Veritas).

The scope of the work covered the Global Reporting Initiative Standards and Principles for Sustainability Reporting in terms of the GRI Standards, including the Supplement for the electricity sector. Bureau Veritas developed a set of interviews and evidence checks to verify information from the various GRI indicators and topics.

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**Water discharges – volume by destination**

**% verified**

76-100

### **Verification standard used**

The Company has an Environmental Management System (ISO 14001) and a Quality Management System (ISO 9001) to check the treatment systems and the conditions of release of effluents in the Company's units.

The release conditions must comply with DN COPAM/CERH-MG No. 1/2008, which provides for the classification of water bodies and environmental guidelines for their classification, and defines the conditions and standards for releasing effluents and other provisions.

### **Water discharges – volume by final treatment level**

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#### **% verified**

76-100

#### **Verification standard used**

The Company has an Environmental Management System (ISO 14001) and a Quality Management System (ISO 9001) to check for compliance with legal requirements. The release conditions must comply with DN COPAM/CERH-MG No. 1/2008, which provides for the classification of water bodies and environmental guidelines.

### **Water discharges – quality by standard water quality parameters**

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#### **% verified**

76-100

#### **Verification standard used**

The Company has an Environmental Management System (ISO 14001) and a Quality Management System (ISO 9001) to check the treatment systems and the conditions of discharge of effluents in the Company's units. The release conditions must comply with DN COPAM/CERH-MG No. 1/2008, which provides for the classification of water bodies and environmental guidelines.

### **Water consumption – total volume**

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#### **% verified**

76-100

#### **Verification standard used**

The data were reviewed by the external audit of the 2021 Annual and Sustainability Report issued by Bureau Veritas Certification Brazil (Bureau Veritas).

The scope of the work covered the Global Reporting Initiative Standards and Principles

for Sustainability Reporting in terms of the GRI Standards, including the Supplement for the electricity sector. Bureau Veritas developed a set of interviews and evidence checks to verify information from the various GRI indicators and topics.

## W6. Governance


### W6.1

#### (W6.1) Does your organization have a water policy?


Yes, we have a documented water policy that is publicly available


#### W6.1a

#### (W6.1a) Select the options that best describe the scope and content of your water policy.

	Scope	Content	Please explain
Row 1	Company-wide	Description of business dependency on water Description of business impact on water Description of water-related performance standards for direct operations Description of water-related standards for procurement Reference to international standards and widely-recognized water initiatives Company water targets and goals Commitment to align with public policy initiatives, such as the SDGs Commitments beyond regulatory compliance Commitment to water-related innovation Commitment to stakeholder awareness and education Commitment to water stewardship and/or collective action Commitment to safely managed Water, Sanitation and Hygiene (WASH) in the workplace	Cemig, aware of the importance of water resources for the maintenance of its business and society, establishes a Water Resources Policy intended to define the principles governing the Company's actions on the subject. When carrying out its activities, the Company undertakes to adopt integrated and sustainable practices for the rational use of water resources, prevention and defense against critical hydrological events, both of natural origin and resulting from the misuse of natural resources, considering water availability and the needs of current and future generations. This policy has the following principles: Management of Water Resources, Conservation of Water Resources, Participation in Public Management and compliance with Water Resources Legislation, Safe Management of Reservoirs, Climatological and Quantitative Water Monitoring, Monitoring of Water and Sediment Quality, Relationship with Stakeholders and Research and Development.   1, 2, 3

	<p>Commitment to safely managed Water, Sanitation and Hygiene (WASH) in local communities</p> <p>Acknowledgement of the human right to water and sanitation</p> <p>Recognition of environmental linkages, for example, due to climate change</p> <p>Other, please specify</p> <p>Actions aimed at water conservation and preservation of springs, safe management of the reservoirs, climatological and quantitative monitoring of water and water quality, and sedimentometric practices.</p>	
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 <sup>1</sup>Website Water Resources.pdf

 <sup>2</sup>poicy-of-water-resources-of-cemig (1).pdf

 <sup>3</sup>DFP.pdf

## W6.2

**(W6.2) Is there board level oversight of water-related issues within your organization?**

Yes

### W6.2a

**(W6.2a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for water-related issues.**

Position of individual	Please explain
Chief Operating Officer (COO)	<p>The position with the highest level of direct responsibility for water issues in the Company is the Director of Cemig GT, responsible for managing the processes and activities of generating and transmitting electricity. Like the other senior management, the Director is part of Cemig's Executive Board, co-responsible for managing the Multi-Year Business Plan, which contains the Company's actions and strategies over a 5-year horizon. Issues related to water risk are contemplated in this Plan and discussed with the Company's CEO, the highest level entity of the Executive Board, which, in turn, reports directly to the Board of Directors.</p> <p>The members of the Board of Directors are elected by the General Shareholders' Meeting, considered a group belonging to the Company's management. They elect their Chief Executive Officer and approve the Officers' functional attributions, which include assisting the Chief Executive Officer in the exercise of his/her functions and replacing him/her in the event of absence, leave, vacancy, impediment, or</p>

	<p>resignation. The Chief Executive Officer's duties include coordinating and managing the Company's work and coordinating the preparation, consolidation, and implementation of the Company's Long-Term Strategy and Multi-Year Business Plan.</p> <p>Responsibility for water issues was assigned to the Chief Operating Officer (COO) of Cemig GT since the departments that deal directly with these matters are subordinated to this department. The current Cemig GT COO has over 31 years of experience in electricity generation and transmission. He is a member of the ONS Board of Directors and Boards of Transmission Companies.</p>
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## W6.2b

**(W6.2b) Provide further details on the board's oversight of water-related issues.**

	Frequency that water-related issues are a scheduled agenda item	Governance mechanisms into which water-related issues are integrated	Please explain
Row 1	Scheduled - all meetings	<ul style="list-style-type: none"> <li>Monitoring implementation and performance</li> <li>Overseeing acquisitions and divestiture</li> <li>Overseeing major capital expenditures</li> <li>Reviewing and guiding annual budgets</li> <li>Reviewing and guiding business plans</li> <li>Reviewing and guiding major plans of action</li> <li>Reviewing and guiding risk management policies</li> <li>Reviewing and guiding strategy</li> <li>Reviewing and guiding corporate responsibility strategy</li> </ul>	<p>Cemig has a Sustainability Committee composed of members of the Executive Board. Among the various action plans, the Committee also established those associated with the low diversification of its electricity matrix. Currently, more than 98% of the electricity generated by the Company comes from HPPs, whose operation is highly dependent on the hydrological regime. The risk portrayed is discussed at meetings of the Sustainability Committee throughout the year. This topic is taken annually to Cemig's Board of Directors via the Cemig GT COO and via the annual review of the strategic plans.</p>

		Reviewing innovation/R&D priorities Setting performance objectives	
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## W6.2d

**(W6.2d) Does your organization have at least one board member with competence on water-related issues?**

	Board member(s) have competence on water-related issues	Criteria used to assess competence of board member(s) on water-related issues
Row 1	Yes	The board members' competencies regarding water issues are evaluated through an analysis of the curriculum and experience in the electricity sector.

## W6.3

**(W6.3) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues (do not include the names of individuals).**

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**Name of the position(s) and/or committee(s)**

Chief Operating Officer (COO)

**Responsibility**

Assessing water-related risks and opportunities

Managing water-related risks and opportunities

**Frequency of reporting to the board on water-related issues**

More frequently than quarterly

**Please explain**

The person holding the highest level of direct responsibility for the water issue at Cemig is the Generation and Transmission Officer, who reports directly to the CEO. As water is the main raw material for energy generation, the Generation and Transmission Officer and his/her team monitor and assess water risks daily based on the level of the Company's reservoirs and monitor weather forecasts. The most relevant information on the subject is presented weekly at Board meetings and monthly at Board of Directors' meetings.

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**Name of the position(s) and/or committee(s)**

Risk committee



### Responsibility

Assessing water-related risks and opportunities

### Frequency of reporting to the board on water-related issues

More frequently than quarterly

### Please explain

This Committee is responsible for advising the Executive Board in fulfilling the responsibilities related to managing and monitoring corporate risks and recommending mitigation actions. The following attributions can be highlighted: Promote the discussion of strategic and operational issues in the Corporate Risk Management Process; Continuously monitor the scenario into which the Company is inserted and its corporate risk matrix to identify the main risks and recommend mitigating actions to be proposed to the Executive Board; Continuously monitor the scenario into which the Company is inserted and its corporate risk matrix to identify the main risks and recommend mitigating actions to be proposed to the Executive Board; Recommend, for approval by the Executive Board, guidelines and procedures to be adopted in the Corporate Risk Monitoring Process.

## W6.4

**(W6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?**

	Provide incentives for management of water-related issues	Comment
Row 1	Yes	Since 2012, the Profit Sharing Bonus (PSB) awarded to Officers has been conditioned to the achievement of individual corporate goals established by the Board of Directors, according to the Company's strategy. Specifically, for managers, superintendents, and directors, from 2020 onwards, a basket of indicators broken down from the corporate strategic indicators began to be considered. Thus, in 2021, ISUSTENT represented 5% of the PSB bonus awarded to the DCS Officer (Department of Communication and Sustainability - DPR/CS). EIMRGF also represented 5% of the PSB bonus awarded to the Generation and Transmission Officer.

## W6.4a

**(W6.4a) What incentives are provided to C-suite employees or board members for the management of water-related issues (do not include the names of individuals)?**

	Role(s) entitled to incentive	Performance indicator	Please explain
Monetary reward	Board/Executive board Other C-suite Officer	Supply chain engagement	In Brazil, the energy provided by the National Interconnected System (SIN) is the

	<p>Generation and Transmission Board; Communication and Sustainability Board</p>	<p>Other, please specify</p> <p>Energy Impacted by the Guaranteed Power Output Decrease Mechanism</p>	<p>reference for national supply. The Ministry of Mines and Energy (MME) grants each plant a certificate that corresponds to the maximum amount of energy that it can sell, also known as Guaranteed Output. The EIMRGF indicator tracks the total amount of energy (MWh) impacted by the Guarantee Reduction Mechanism, considering the Guaranteed Output of all generation projects considered.</p> <p>It is valid for centrally dispatched HPPs and with the participation of CEMIG GT in the operation and/or maintenance processes. The verified values and the result projections of this indicator reflect the performance of the operational availability of each plant (directly related to inflow), cumulatively for a 60-month period, compared to a reference value for this availability defined by ANEEL. The result can represent up to 10% of the variable remuneration of the Generation and Transmission Officer. To receive this benefit, the indicator must be &lt; 28,000 MWh.</p> <p>As for the 2020/21 PSB, the target was reset to <math>\leq 5,776</math> MWh. Cemig also uses ISUSTENT, an indicator that assesses Cemig's performance in sustainability indices such as ISE, CDP, and Dow Jones Sustainability Index, which include management and engagement with suppliers as one of their critical topics. ISUSTENT represented 5% of the PSB bonus awarded to the Communication and Sustainability Board in 2021.</p>
<p>Non-monetary reward</p>	<p>No one is entitled to these incentives</p>		<p>At Cemig, there are no non-monetary rewards to C-suite employees or board members associated with water issues.</p>

## W6.5

**(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?**

Yes, direct engagement with policy makers

Yes, other

## W6.5a

**(W6.5a) What processes do you have in place to ensure that all of your direct and indirect activities seeking to influence policy are consistent with your water policy/water commitments?**

Cemig is part of the regulatory scenario, supporting the formulation of laws and regulations for the water sector. The Company participates in all forums dedicated to water resources of interest (National and State Water Resources Councils, Hydrographic Basin Committees, Technical Chambers and Working Groups). With operations focused on Minas Gerais, Cemig is a member of 20 state watershed committees, 04 federal committees, and the Brazilian Association of Electric Power Generation Companies. Cemig encourages intra and intersectoral articulation in Water Resources Forums to anticipate, mitigate or neutralize policies that are not adherent to the Electricity Sector and to the Company. Cemig has a Water Resources Policy, which guides the performance of the Company and its employees. Furthermore, there are normative instructions intended to ensure the alignment of the activities carried out with the policy guidelines. These topics are targeted by internal training sessions, reaching 100% of the workforce. In the event of inconsistencies concerning guidelines and instructions, the Company has a whistleblowing channel. Complaints are classified and dealt with, and disciplinary measures are applied when the deviation is proven. The employees who participate in these forums are specialists in water resources and prepared to represent the interests of the Company, ensuring consistency between the Company's actions and discourse.

## W6.6

**(W6.6) Did your organization include information about its response to water-related risks in its most recent mainstream financial report?**

Yes (you may attach the report - this is optional)

 DFP.pdf

## W7. Business strategy

### W7.1

**(W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?**

	Are water-related issues integrated?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water-related issues are integrated	16-20	<p>The main guidelines of Cemig's business strategy are defined within the scope of (i) the business plan for the following year and (ii) the updated long-term strategy with an analysis of risks and opportunities for at least the next five years. The current strategic planning is designed for both medium and long-term horizons, 2025 and 2040, which are related to balanced growth through new projects and mergers and acquisitions.</p> <p>The main commitments, in this sense, are sustainable growth and adding value for shareholders in the long term to expand installed capacity through a low-risk portfolio. One of the guidelines is the recovery of its energy generation capacity from renewable sources (hydroelectric, wind, and solar).</p> <p>For situations of water stress, Cemig's long-term business goals include the importance of diversifying energy sources to minimize the impact on the energy supply.</p> <p>Therefore, the expansion of solar and wind energy generation has been crucial.</p> <p>In 2021, the estimated installed solar capacity of Cemig SIM reached 49 MW in miniGD. In this sense, Cemig plans to expand this capacity to diversify the Company's energy sources. Since hydroelectric power is Cemig's primary source of generation, the strategy of purchasing incentivized energy (wind and solar) through auctions is also noteworthy.</p>
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	16-20	<p>The main guidelines of Cemig's long-term business strategy are defined for 2040. In this line of action, the strategy of expanding the installed capacity of existing plants stands out. The Company has an area dedicated to analyzing scenarios, risks and opportunities, and market trends, which is responsible for developing strategic plans.</p> <p>The Company's strategic planning considers eco-efficiency and environmental management aspects,</p>

			<p>setting goals to reduce water consumption throughout the Company and increase production efficiency through energy planning.</p> <p>Water-related risks and opportunities, such as extreme hydrological events, dam failure, inefficiency in adapting to climate change impacts, investment plans for operational vulnerability improvements, etc., are classified and prioritized in exposure matrices by the Corporate Risk Monitoring Committee and submitted to the Executive Board.</p> <p>The long-term strategy includes recovery of generation capacity by acting as an energy trader in the free market, participating in energy auctions, and taking advantage of solar and wind energy opportunities.</p>
Financial planning	Yes, water-related issues are integrated	16-20	<p>The Brazilian electrical system has undergone transformations that affect Cemig directly. Therefore, financial planning integrates water issues, such as unfavorable future hydrological scenarios, expansion of the energy matrix based on wind and solar sources, and the consequent reduction of hydroelectric generation to mitigate long-term risks involving loss of water and hydroelectric generation capacity.</p> <p>One of the strategies adopted by Cemig was financial planning to diversify its energy matrix through purchasing renewable energy from solar and wind sources. Thus, the Company plans to expand its operations and customer base and offer new products and services in anticipation of a new hydrological and climate context. Over the next five years, the Company will invest 3.5 billion in solar energy and 1.2 billion in wind energy, corresponding to 57% and 22% of total investments in renewable energy generation.</p>

## W7.2

**(W7.2) What is the trend in your organization’s water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?**

Row 1

**Water-related CAPEX (+/- % change)**

-98

**Anticipated forward trend for CAPEX (+/- % change)**

93

**Water-related OPEX (+/- % change)**

-15

**Anticipated forward trend for OPEX (+/- % change)**

13

**Please explain**

In 2021, CAPEX dropped due to the Hydrometeorological Telemetry System (STH) renovation. Only an energy forecast model (CEPLEX) was acquired. Regarding OPEX, the amount spent also dropped, mainly due to the postponement of some field activities impacted by the COVID-19 pandemic. As for future trends, an increase in investment is expected in 2022, mainly due to the acquisition of equipment for the Meteorological Radar and sensors for the Storm Localization System - SLT. The significant variation in CAPEX and OPEX is expected to continue due to adjustment needs and compliance with regulatory demands in the sector. OPEX It is likely to drop in the coming years.

**W7.3**

**(W7.3) Does your organization use scenario analysis to inform its business strategy?**

	Use of scenario analysis	Comment
Row 1	Yes	<p>Using results from climatological models and hydrological rainfall-runoff transformation models, Cemig builds inflow scenarios for the main basins of the National Interconnected System. Based on these scenarios, Cemig feeds the official hydrothermal optimization models in use in the Brazilian Electricity Sector (Newave and Decomp), which determines the operating policy of the Brazilian generating complex and the energy price in the short-term market.</p> <p>Based on the analysis of scenarios, Cemig determines the degree of financial exposure to risks, considering the likelihood of occurrence and associated impacts, and defines control measures for the following risks: siltation of reservoirs, weather forecast deviations, loss of SHP guaranteed output, and lower water availability with impacts on commercialization.</p>

**W7.3a**

**(W7.3a) Provide details of the scenario analysis, what water-related outcomes were identified, and how they have influenced your organization's business strategy.**

Type of scenario	Parameters, assumptions, analytical choices	Description of possible water-related outcomes	Influence on business strategy

	analysis used			
Row 1	Water-related Climate-related	<p>To estimate climate change impacts until 2100, the risk was assessed based on an analysis of scenarios available in phase 6 of the Coupled Model Intercomparison Project (CMIP6). Until 2020, the data were those listed in phase 5 of the said project (CMIP5). The Intergovernmental Panel on Climate Change's fifth report used four representative concentration pathways (RCPs) to represent possible future scenarios related to greenhouse gas emissions.</p> <p>In this new version, the old greenhouse gas concentration scenarios (RCP2.6, RCP4.5, RCP6.0, and RCP8.5) were replaced with new versions, which account for the socio-economic aspects of public policies that address the emission of greenhouse gases. They are known as Shared Socioeconomic Pathways (SSPs). They are divided into 5 "narratives," which differ from each other according to the relationship between society, economy, demography, consumption, and environmental policy: SSP1 (extremely</p>	<p>Impacts on Water Availability - An analysis of the hydrographic basins of interest pointed to different results, i.e., while water availability in the Paranaíba basin drops by up to 15% for all time horizons, it rises 10% and up in the Jequitinhonha basin. In the São Francisco basin (Minas Gerais), there are no significant changes. Despite this fact, overall, water availability tends to decrease as the analysis horizon extends, with all basins showing a decrease concerning previous periods.</p>	<p>The Company has a specialized water resource and risk management department responsible for identifying water risks, qualifying and quantifying impacts, and defining risk minimization actions.</p> <p>As for the climate scenarios, the following control measures have been defined: real-time monitoring of the amount of water available in rivers and plants through 262 telemetric stations that are part of the Hydrometeorological Telemetry and Monitoring System (STH); and sediment monitoring at 86 HPP monitoring stations.</p> <p>Currently, Cemig operates a hydrometeorological network composed of 583 stations, 232 of which for rainfall monitoring, 224 for river flow monitoring, 74 for reservoir and river WL monitoring, and 53 weather stations, which monitor rainfall, temperature, air humidity, wind speed and direction, solar radiation and atmospheric pressure. These stations are installed in strategic locations in the states of Minas Gerais, Goiás, Rio de Janeiro, Espírito Santo, and Santa Catarina. The collected data is received in real-time at the Company's headquarters in</p>

	<p>optimistic), SSP2, SSP3, SSP4, and SSP5 (extremely pessimistic).</p> <p>The cited studies used data from five climate models: CNRM-CM6-1, HadGEM3-GC31, CAMS-CSM1-0, GFDL-ESM4, and INM-CM5-0. All these applied to the SSPs (Shared Socio-Economic Pathways) scenarios described above.</p> <p>Additionally, changes in rainfall regimes were also analyzed – As almost all of Cemig's generating complex is made up of HPPs, changes in total rainfall and its dispersion impact some of the Company's activities. Rainfall assessments are carried out for each IPCC scenario for all the Company's HPPs to refine strategic decisions.</p> <p>Changes in wind speed and radiation were also considered: Although Cemig's wind/solar generating park is not representative of the Company's generation matrix, the analyses allow supporting the long-term operating strategy, expanding decisions, and identifying new sites. In addition, the IPCC scenarios are used to verify whether these locations will remain the</p>		<p>Belo Horizonte.</p> <p>By 2027, Cemig will implement a new DDP (Distributor Development Plan), structured to resolve deficiencies and monitor actions implemented to mitigate climate change impacts. Another initiative to reduce water dependence is investments in solar and wind energy, which until 2025 will represent 79% of investments in the expansion of the energy generating complex.</p>
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		most suitable or if their performance will be impacted due to climate change.		
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## W7.4

### (W7.4) Does your company use an internal price on water?

#### Row 1

#### Does your company use an internal price on water?

Yes

#### Please explain

Since 1990, the electricity generation sector has paid a sectoral tax called Financial Compensation for the Use of Water Resources for Hydroelectric Generation (CFURH), established by Law No. 7,990 of 1989.

Cemig and the entire sector that uses water for hydroelectric energy production were charged for using water resources in its HPPs even before the Basin Committees were created. The tax was imposed on HPPs with installed capacity greater than 30 MW for using water resources from federal and state river basins as of August 2000, upon publication of Law No. 9,984. It is the only sector with an updated reference tariff (TAR) readjusted annually. In 2021, the amount charged was R\$ 83.78/MWh, i.e., a variation of 5.2% compared to 2020 (R\$ 79.62/MWh).

## W7.5

### (W7.5) Do you classify any of your current products and/or services as low water impact?

	Products and/or services classified as low water impact	Definition used to classify low water impact	Please explain
Row 1	Yes	In recent years, Cemig has invested in diversifying its energy sources, aiming to mitigate water and climate risks that could cause significant impacts on the Company. Thus, investments in wind and solar energy production have been increasing every year, with sources	The current CAPEX plan (2021-2025) proposes an investment of R\$ 6.7 billion in new projects, of which R\$ 3.25 billion will be invested in wind power generation, R\$ 1.26 billion in solar energy by 2025, R\$ 1.19 billion for repowering and maintenance of HPPs, R\$ 1.0 billion in Cemig SIM, a Cemig Group company created in 2019 with a

		considered to have low water impact.	focus on innovation, energy efficiency and energy solutions.
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## W8. Targets

### W8.1

**(W8.1) Describe your approach to setting and monitoring water-related targets and/or goals.**

	Levels for targets and/or goals	Monitoring at corporate level	Approach to setting and monitoring targets and/or goals
Row 1	Company-wide targets and goals Business level specific targets and/or goals Activity level specific targets and/or goals Site/facility specific targets and/or goals	Targets are monitored at the corporate level Goals are monitored at the corporate level	<p>To guide the establishment of responsibilities, commitments, goals, and objectives, Cemig has a Water Resources Policy, whose main guidelines are the adoption of practices of rational use and prevention and defense against critical hydrological events. In addition, Cemig considers the multiple uses of water by other users of the hydrographic basin when deciding on the operation and management of its reservoirs, which implies multiple environmental and safety constraints.</p> <p>Sustainability Management is the area responsible for assessing, proposing, and monitoring water consumption and use targets and other issues related to the water issue.</p> <p>The goals proposed by that area are submitted to the Sustainability Committee and then validated by the Executive Board. When approved by the Executive Board, the goals are incorporated into the Sustainability Plan. Monitoring is carried out through articulation with other areas of the Company, especially the operational and planning areas. The results are verified annually, and, when necessary, the goals are reviewed and updated.</p> <p>Cemig's Sustainability Committee has an advisory role rather than deliberative attributions. Still, at its discretion, it may summon employees or support groups from the Company to ensure the complete and effective execution of the activities.</p>

### W8.1a

**(W8.1a) Provide details of your water targets that are monitored at the corporate level, and the progress made.**

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**Target reference number**

Target 1

**Category of target**

Water consumption

**Level**

Company-wide

**Primary motivation**

Recommended sector best practice

**Description of target**

6% reduction in administrative water consumption, with 2019 as the target base year and 2025 as the target year.

**Quantitative metric**

% reduction in total water consumption

**Baseline year**

2019

**Start year**

2020

**Target year**

2025

**% of target achieved**

3

**Please explain**

Water is consumed in Cemig's operational and administrative areas linked to hydroelectric generation, transmission, and distribution of electric energy.

Cemig established a 6% reduction in water consumption in 2020, with 2019 as the base year and 2025 as the target year. The Company, in 2021, failed to reach the reduction target, remaining 9% above the stipulated target.

The existence of civil works explained the increase in water consumption from artesian wells and utility companies to replace equipment and/or install new equipment. There was also an increase of 53% in surface water abstraction compared to the base year due to the reopening the seedling nurseries at the Itutinga Environmental Station.

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**Target reference number**

Target 2

**Category of target**

Water pollution reduction

**Level**

Other, please specify  
Hydropower Plants

**Primary motivation**

Reduced environmental impact

**Description of target**

Meet, in 2021, 100% of the environmental conditions associated with all HPPs in operation, with 2020 as the base year. The Company continuously adopts this goal, which is updated and monitored annually.

**Quantitative metric**

Other, please specify  
Percentage of compliance with environmental conditions established by the competent environmental bodies for HPPs.

**Baseline year**

2020

**Start year**

2020

**Target year**

2021

**% of target achieved**

99.3

**Please explain**

Cemig annually monitors compliance with the environmental conditions established by the competent environmental bodies for all the Company's hydroelectric plants. The corporate goal is that all plants should meet 100% of the requirements.

The quality of water associated with hydroelectric plants is contemplated in the environmental conditions. One of the actions to meet these conditions is the preparation of Environmental Plans for the Conservation and Use of the Surroundings of Artificial Reservoirs (PACUERA).

All generation facilities have an effluent treatment system, not necessarily a WWTP, but simplified systems such as septic tanks. Such plans propose actions that reconcile the human use observed in the surroundings of the reservoir.

## W8.1b

**(W8.1b) Provide details of your water goal(s) that are monitored at the corporate level and the progress made.**

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### Goal

Promotion of water data transparency

### Level

Company-wide

### Motivation

Brand value protection

### Description of goal

Annually disclose all information regarding the management and use of water by Cemig. To measure this goal, Cemig monitors how the Company performs in the review of the annual report to the CDP Water Security questionnaire and uses, as an indicator, the evolution of the grade obtained in the reported years. The rates range from A (highest grade) to F (lowest grade). As the transparency criterion is part of the final grade of the report, Cemig always seeks to obtain the highest possible grade (grade A), that is, the higher, the better: the higher the grade received, the greater the adherence to the transparency of the information. Obtaining the maximum grade contributes to the achievement of the proposed objective. In addition, it allows Cemig to integrate the main existing sustainability indices and ratings. This result is also relevant for the Company since it can increase its market value and attract more investors. To achieve grade A, Cemig has engaged the water management team in establishing better management practices. Additionally, Cemig has a partnership with a specialist consulting firm on the subject to support the reporting process to CDP.

### Baseline year

2014

### Start year

2016

### End year

2021

### Progress

Goal progress is tracked exclusively through the CDP Water Security score. Cemig answered the questionnaire for two years as training without submitting it. The questionnaire was first submitted in 2016, and in 2017 and 2018, the Company was ranked as category A-. In 2019, 2020, and 2021, the Company was awarded the maximum score (grade A), demonstrating progress in the actions taken and success in disclosing information regarding the management and use of water.

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**Goal**

Engaging with local community

**Level**

Site/facility

**Motivation**

Risk mitigation

**Description of goal**

Under law no. 12,344/2010 and ANEEL Resolution 696, Cemig must prepare Emergency Action Plans – EAPs.

Engagement with stakeholders should be included in one of the phases of the Plan. All communities located in the vicinities of dams must participate in this engagement phase.

The goal's success is conditioned on preparing 100% of the required External EAPs. When reached, it will ensure compliance with law 12,344/2010 and dissemination of information concerning the risk of flooding caused by ordinary floods and possible dam failure events. Ensuring the engagement of the local community on this issue is of paramount importance, as it enables the dissemination of a culture of readiness for flood situations along the rivers where Cemig's plants are installed.

**Baseline year**

2015

**Start year**

2016

**End year**

2025

**Progress**

Cemig prepared specific External EAPs for the 42 dams, as determined in the Normative Resolution. The 42 dams operated by Cemig impact the life dynamics of 122 municipalities, and in some cases, the same municipality is covered by two EAPs since two dams are operated therein.

Also, in 2021, 50 meetings/workshops were held with civil defense agencies (COMPDECs) to present the updated dam EAPs with dam break and intense rainfall studies outlining meeting points and escape routes.

The actions listed below were also discussed and taken with a focus on the SRZ (self-rescue zone) located downstream from the dams:

1. Action to register roofs and permanent dwellers for 61 municipalities;

2. Proposition of escape routes and meeting points for the 61 municipalities; and

3. Warning signs posted in 43 municipalities.

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### **Goal**

Watershed remediation and habitat restoration, ecosystem preservation

### **Level**

Business

### **Motivation**

Reduced environmental impact

### **Description of goal**

Improve the monitoring of water quality in reservoirs through satellite imagery.

This goal will be made possible via an R&D project, its success linked to the development of a study titled "Intelligent Monitoring of Water Quality in Hydroelectric Reservoirs through the Development of a Photogrammetric Algorithm."

The scope of the study proposes increasing the availability of environmental monitoring data on water quality in the vicinities of reservoirs and data accuracy. To this end, algorithms will be developed for processing high-resolution images obtained by unmanned aerial vehicles (UAVs) in combination with satellite imagery and data traditionally collected onsite. The Três Marias Reservoir-MG will serve as a case study.

This project is relevant as 98% of the electricity generated by the company comes from HPPs, and the monitoring of water quality represents a vital variable to guarantee the operation and avoid environmental sanctions.

### **Baseline year**

2019

### **Start year**

2019

### **End year**

2023

### **Progress**

The project started in 2019 by developing the first studies and definitions of the work plans. The project progress will be measured from the delivery of the intended results; the project success indicators are listed below:

- i) development of algorithms to assess water quality in the vicinities of the reservoirs based on multispectral images;
- ii) Application of methodologies for calibration and validation of algorithms used to

- assess water quality in the vicinities of the reservoir;
- iii) Optimization of the monitoring network;
- iv) Application of statistical tools for integrating time series of water quality monitoring data to meet the various purposes of the network;
- v) Development of protocols for automation and optimization of water quality monitoring processes combined with traditional methods.
- vi) Assessment of the water quality based on images of the Tres Marias HPP Reservoir;
- vii) Ecosystem assessment of water quality in the Tres Marias HPP reservoir;
- viii) Field data analysis and integration with drone data and hydrobiological data;
- ix) Development of algorithms, validation studies, and empirical and analytical models to be used;
- x) Results of actions developed with stakeholders in the Target area.

In 2021, the following results were achieved by the project: (iii); (iv), (v) and (x). Items (iv) (v), (vi), (vii), (viii) and (ix), despite being completed, are also in continuous update status.

## W9. Verification

### W9.1

**(W9.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1a)?**

Yes

### W9.1a

**(W9.1a) Which data points within your CDP disclosure have been verified, and which standards were used?**

Disclosure module	Data verified	Verification standard	Please explain
W0 Introduction	Overview of the Company, reporting year, reporting consolidation method, organizational activities	ISAE 3000	<p>The annual independent verification of Cemig's Sustainability Report is based on the best practices established in the Principles for Sustainability Reports, GRI Standards, and the ISAE 3000 assurance standard.</p> <p>Every year, Cemig submits its Sustainability Report for independent verification to ensure the legitimacy of its content. The audit process comprised (i) a review of disclosures, information, and data present in the draft version of the</p>



			<p>sustainability report (ii) interviews with strategic employees, both to understand the report data and the management processes involved with the material topics, and (ii) review of supplemental documentation sent by Cemig to Bureau Veritas-BVC.</p> <p>General company data and the report preparation approach presented in Cemig's sustainability report are, therefore, subject to verification.</p>
W1 Current state	Data on administrative water consumption and effluents were verified.	ISAE 3000	<p>The annual independent verification of Cemig's Sustainability Report is based on the best practices established in the Principles for Sustainability Reports, GRI Standards, and the ISAE 3000 assurance standard.</p> <p>Every year, Cemig submits its Sustainability Report for independent verification to ensure the legitimacy of its content. The audit process comprised (i) a review of disclosures, information, and data present in the draft version of the sustainability report (ii) interviews with strategic employees, both to understand the report data and the management processes involved with the material topics, and (ii) review of supplemental documentation sent by Cemig to Bureau Veritas-BVC.</p> <p>General company data and the report preparation approach presented in Cemig's sustainability report are, therefore, subject to verification.</p>
W3 Procedures	The information contained in the item "Water Resources" was verified within the scope of the 2021 Annual Sustainability Report.	ISAE 3000	<p>The annual independent verification of Cemig's Sustainability Report is based on the best practices established in the Principles for Sustainability Reports, GRI Standards, and the ISAE 3000 assurance standard.</p> <p>Every year, Cemig submits its</p>

			<p>Sustainability Report for independent verification to ensure the legitimacy of its content. The audit process comprised (i) a review of disclosures, information, and data present in the draft version of the sustainability report (ii) interviews with strategic employees, both to understand the report data and the management processes involved with the material topics, and (ii) review of supplemental documentation sent by Cemig to Bureau Veritas-BVC.</p> <p>General company data and the report preparation approach presented in Cemig's sustainability report are, therefore, subject to verification.</p>
W4 Risks and opportunities	The information contained in the item "Risk Management" was verified within the scope of the 2021 Annual Sustainability Report, contemplating time horizons and types of risk	ISAE 3000	<p>The annual independent verification of Cemig's Sustainability Report is based on the best practices established in the Principles for Sustainability Reports, GRI Standards, and the ISAE 3000 assurance standard.</p> <p>Every year, Cemig submits its Sustainability Report for independent verification to ensure the legitimacy of its content. The audit process comprised (i) a review of disclosures, information, and data contained in the draft version of the sustainability report (ii) interviews with strategic employees, both to understand the report data and the management processes involved with the material topics and (ii) review of supplemental documentation sent by Cemig to BVC.</p> <p>The Sustainability Report - chapter on Climate Change - details the time horizons the company considered in its risk assessments and presents some examples of water risks related to climate change and water issues.</p>
W6 Governance	The information contained in the item "Water Resources" was verified	ISAE 3000	<p>The annual independent verification of Cemig's Sustainability Report is based on the best practices established in the</p>

	within the scope of the 2021 Annual Sustainability Report		<p>Principles for Sustainability Reports, GRI Standards, and the ISAE 3000 assurance standard.</p> <p>Every year, Cemig submits its Sustainability Report for independent verification to ensure the legitimacy of its content. The audit process comprised (i) a review of disclosures, information, and data present in the draft version of the sustainability report (ii) interviews with strategic employees, both to understand the report data and the management processes involved with the material topics, and (ii) review of supplemental documentation sent by Cemig to Bureau Veritas-BVC.</p> <p>General company data and the report preparation approach presented in Cemig's sustainability report are, therefore, subject to verification.</p>
W7 Strategy	The information contained in the item "Strategy" was verified within the scope of the 2021 Annual Sustainability Report.	AA1000AS	<p>The annual independent verification of Cemig's Sustainability Report is based on the best practices established in the Principles for Sustainability Reports, GRI Standards, and the ISAE 3000 assurance standard.</p> <p>Every year, Cemig submits its Sustainability Report for independent verification to ensure the legitimacy of its content. The audit process comprised (i) a review of disclosures, information, and data contained in the draft version of the sustainability report (ii) interviews with strategic employees, both to understand the report data and the management processes involved with the material topics and (ii) review of supplemental documentation sent by Cemig to BVC.</p> <p>In the Sustainability Report, Cemig presents strategic decisions based on the 2021-2025 strategic plan, influenced by</p>

			business opportunities enhanced by climate change and its impacts on the water issue.
W8 Targets	Information in the item "Targets" were verified within the verification scope of the 2021 Sustainability Annual Report	ISAE 3000	<p>The annual independent verification of Cemig's Sustainability Report is based on the best practices established in the Principles for Sustainability Reports, GRI Standards, and the ISAE 3000 assurance standard.</p> <p>In the Sustainability Report, Cemig presents goals from the 2021-2025 strategic and sustainability plans.</p>

## W10. Sign off

### W-FI

**(W-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.**

Water is the strategic resource on which Cemig's business depends since, after the Igarapé HPP was decommissioned in 2019, 100% of the electricity generated in 2021 came from hydroelectric power plants. Cemig acknowledges its role in conserving this resource and the potential impacts of the Company's activities on water availability.

Given the above, Cemig takes actions that enable the management and prevention of possible impacts related to water availability on its business and invests in practices that place it in a safer situation in the face of the various possible scenarios through the use of modern techniques and equipment, such as the Storm Tracking System, Telemetry and Hydrometeorological Monitoring System, mathematical models for hydrological simulation and weather and climate forecast.

Currently, Cemig operates a hydrometeorological network composed of 583 stations, 232 of which for rainfall monitoring, 224 for river flow monitoring, 74 for reservoir and river WL monitoring, and 53 weather stations, which monitor rainfall, temperature, air humidity, wind speed and direction, solar radiation and atmospheric pressure. These stations are installed in strategic locations in the states of Minas Gerais, Goiás, Rio de Janeiro, Espírito Santo, and Santa Catarina. The collected data is received in real-time at the Company's headquarters in Belo Horizonte.

The water quality of Cemig's reservoir is regularly monitored through a network that includes 46 reservoirs and more than 176 physicochemical and biological data collection stations in the main hydrographic basins of Minas Gerais. The data collected generate a volume of information that is analyzed and stored, forming an extensive database called Siságua. Siságua makes it possible to analyze the temporal and spatial evolution of the reservoirs and

their surroundings, and its improvement provides a differentiated management structure. By generating fast, accurate and valuable information, the system allows water reservoirs to be managed more efficiently.

For purposes of proceeding with the monitoring program filling in gaps, expanding the approaches adopted in the assessment and monitoring of water bodies, and bringing innovation to technologies to support the management of water resources, Cemig's Water Quality Center implemented several Research and Development (R&D) projects in 2021, such as project GT0656 - Individual Notification Device (IND) in the event Dam Emergencies. The project includes the development of software and communication infrastructure, and, unlike the current flood-warning sirens, which are subject to theft and vandalism, the devices (IND) will include features for integration with the user's environment, thus improving availability and reliability, which are essential for this type of system.

Finally, due to the nature of its business, Cemig actively participates in decision-making bodies and forums dedicated to dealing with issues related to water resources. For example, the Company attends technical meetings held by the main bodies that formulate rules and guidelines, such as the National Water Resources Council (CNRH) (via ABRAGE), the State Water Resources Council (CERH), the Federal and State Hydrographic Basin Committees, the Technical Chambers and working groups, especially those responsible for water permits and that develop master plans for water resources. Cemig represents users of water resources for the generation of hydroelectric energy in the State Council of Water Resources of the State of Minas Gerais (CERH/MG), in 4 federal river basin committees, and 20 state river basin committees.

## W10.1

**(W10.1) Provide details for the person that has signed off (approved) your CDP water response.**

	Job title	Corresponding job category
Row 1	Sustainability and Communication Director	Other C-Suite Officer

## W10.2

**(W10.2) Please indicate whether your organization agrees for CDP to transfer your publicly disclosed data on your impact and risk response strategies to the CEO Water Mandate's Water Action Hub [applies only to W2.1a (response to impacts), W4.2 and W4.2a (response to risks)].**

Yes

## Submit your response

**In which language are you submitting your response?**

English

**Please confirm how your response should be handled by CDP**

	<b>I understand that my response will be shared with all requesting stakeholders</b>	<b>Response permission</b>
Please select your submission options	Yes	Public

**Please confirm below**

I have read and accept the applicable Terms