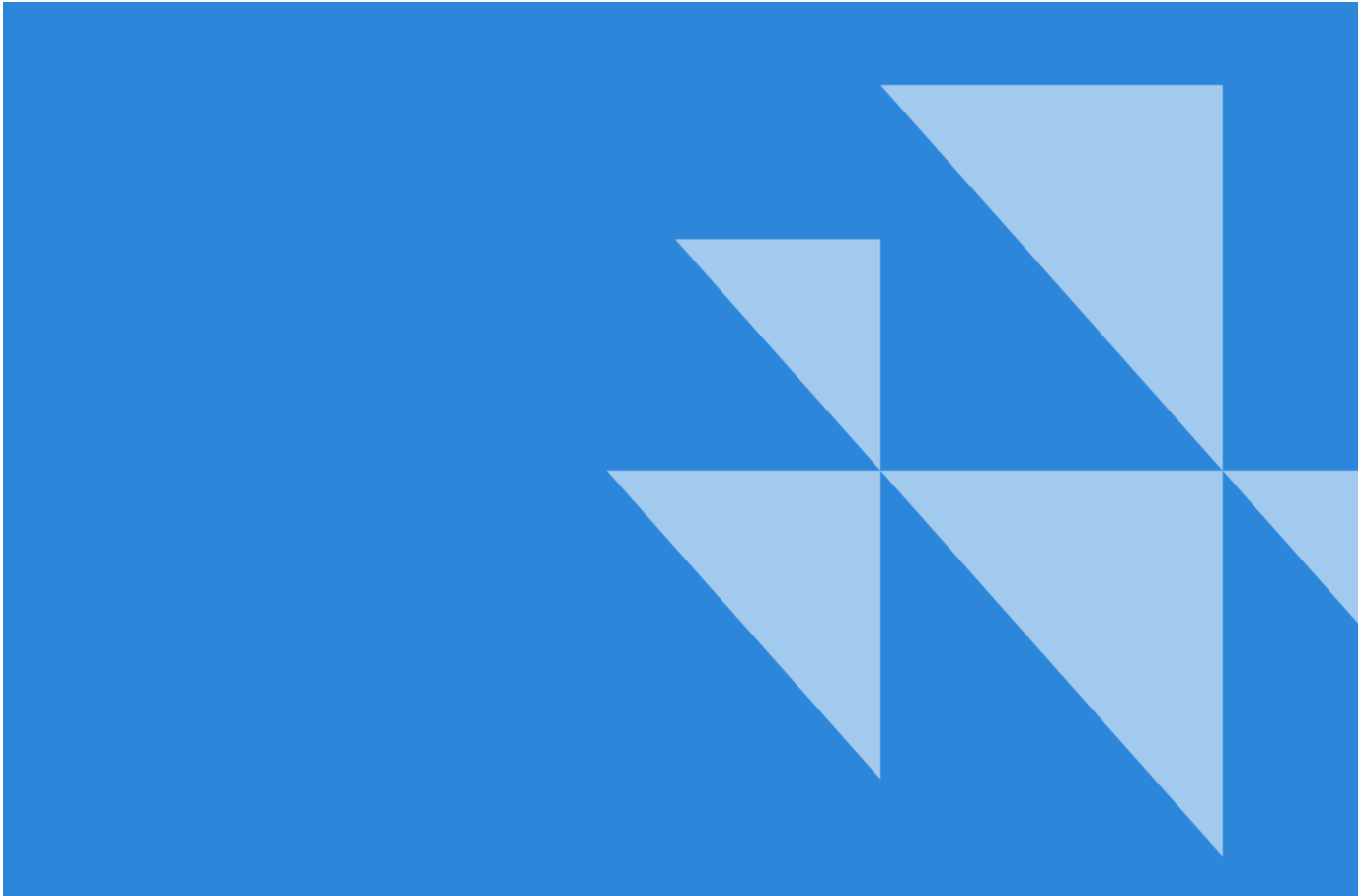


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## CDP Water Security 2020 Questionnaire

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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, Companhia Energética de Minas Gerais (Cemig) operates in the areas of generation, transmission, sale and distribution of electricity, energy solutions (Cemig SIM) and distribution of natural gas (Gasmig). The group consists of the holding company Companhia Energética de Minas Gerais (Cemig), the wholly-owned subsidiaries Cemig Geração e Transmissão S.A. (Cemig GT) and Cemig Distribuição S.A. (Cemig D), totaling 173 Companies, 15 Consortia and two FIPs (Private Equity Interest Fund), resulting in a footprint in 22 Brazilian states and the Federal District. From its inception, the Company has endeavored to innovatively and sustainably bring welfare to the regions it operates in. This decision helped make it the largest energy distributor in terms of power lines and networks, and one of the largest energy generation and transmission companies in Brazil. In addition to generation, transmission and distribution of power, Cemig also operates in the natural gas trade and distribution segment by means of Gasmig, which is the exclusive distributor of piped natural gas throughout the state of Minas Gerais. In addition, the Company has a direct (26.06%) and indirect (23.93%) interest in the capital stock of Light SA, where it is a member of the control block, and a 21.68% interest in the capital stock of Transmissora Aliança de Energia Elétrica S.A. - Taesa, giving it control of that company.

Cemig is a publicly traded company controlled by the Government of the State of Minas Gerais (51%), with its shares traded in São Paulo, in B3 S.A. (Brazil, Bolsa, Balcão), in the New York Stock Exchange (NYSE), and in Madrid, in the Latin American Securities Market (Latibex). The Company's consolidated net operating revenue was R\$ 25.39 billion in 2019, based on a mainly renewable-energy-source-based matrix.

Cemig's power generation complex nameplate capacity is 6,020 MW. 98.06% of which from hydraulic generation plants, 1.91% from wind, 0.02% from solar and 0.01%, from thermal generation. It is important to stress that, by late 2019, TPP Igarapé, the Company's only Thermal Power Plant, was shut down, making Cemig's generation complex 100% renewable. The Company also has 4,930 km of power transmission lines. In the area of electricity distribution, it is responsible for the management of the largest power distribution network in Latin America, over 539 thousand km in length. At the end of 2019, Cemig had 6,083 employees.

Thanks to its commitment to socio-environmental responsibility principles, its economic-financial strength, and technical excellence, the Company is internationally acknowledged as a benchmark in sustainability in its industry, and is positioned as one of the major vectors of consolidation in the Brazilian electricity sector. Cemig has been in Dow Jones Sustainability Index (DJSI World) for 20 years, and Dow Jones Sustainability Emerging Markets Index (DJSI Emerging Markets) for six years since their inception. It is also in the B3 Corporate Sustainability Index (ISE) for the 15th consecutive year, and was selected for the 9th time to be included in the Carbon Efficient Index (ICO2) created in 2010 by B3 and BNDES.

In 2019, Cemig was listed among the leading companies in climate change and water security management in Latin America, under the Climate Change and Water Security Programs, for the quality of the information disclosed to investors and the global market. Recognition was granted by CDP Latin America. This is the 8th consecutive year CDP has awarded the Company. The selection took into account the level of detail in the responses regarding criteria such as risk management, commitment to mitigations, and initiatives to reduce greenhouse gas emissions. The best results point to a high level of transparency in the disclosure of information related to the topic, providing investors with consistent content on climate change management and water security.

Mission: Provide clean and accessible energy integrated solutions to society, innovatively, sustainably, and competitively.

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

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 (storage, transmission, and distribution of natural gas)

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	0	0	0
Lignite	0	0	0
Oil	131	2.1	44884
Gas	0	0	0
Biomass	0	0	0
Waste (non-biomass)	0	0	0
Nuclear	0	0	0
Fossil-fuel plants fitted with carbon capture and storage	0	0	0
Geothermal	0	0	0
Hydropower	5903.4	95.9	1534558
Wind	115.2	1.9	327503
Solar	1.4	0.1	1419
Marine	0	0	0
Other renewable	0	0	0
Other non-renewable	0	0	0
Total	6151	100	15719394

## 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 2019	December 31 2019

## W0.3

(W0.3) Select the countries/areas for which you will be supplying data.

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

## 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	Direct Use: Cemig's generation plants are predominantly hydroelectric power plants encompassing 3,500 km2 of reservoirs, amounting to 98% of the Company's nameplate capacity. Thus, availability of water is vital in order not to impair the generation of energy. The amount of water available is sensitive to climatic variations, the consequences of the exploitation of other natural resources, is greatly affected by human actions, and is subject to regulations. Eventually (2021-2040), the power matrix will be diversified, and 30% of the capacity will be non-hydric. The Company is reducing its dependence on water by diversifying investments in its power generation matrix, expanding the participation of Distributed Generation projects, and encouraging the purchase of wind, solar and biomass energy. Indirect use: Water consumption by Cemig's suppliers is not relevant to the point of being considered in this context. Water consumption is relevant only at the most primary levels of the supply chain, such as in the manufacture of machined materials and concrete parts. This scenario is not expected to change in the short and medium term.
Sufficient amounts of recycled, brackish and/or produced water available for use	Not very important	Not very important	Direct Use: Most of Cemig's power generation does not use water consumptively. Its operations and administrative activities have basically low consumption, and the water recirculation rate is considered negligible in these operations. In 2017, Cemig held the Ideia Iluminada Contest, which aimed at fostering solutions geared at reducing fuel consumption, raising efficiency in energy and water consumption, and reducing the production of waste. Of the 44 projects submitted by Cemig employees, the winner was a system for using rainwater for consumption in the Company's main building in Vila Mariana neighborhood, in the city of Governador Valadares. The project opened in December 2018. Also, brackish water is not used by Cemig and Campaign does not produce water. Thus, the direct use importance was rated as not very important with no prospect of major changes in this scenario in the coming years. Indirect Use: Recycling percentage in operations of the Company's suppliers is considered negligible, bearing in mind that these suppliers have low dependence on water in their operations. Also, brackish water is not used by the Company's critical suppliers, and they do not produce water. Thus, the indirect use importance was rated as not very important with no prospect of major changes in this scenario in the coming years.

## (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%	Cemig monitors water collection by source (public utility supply, artesian well, and surface catchment) in all of its operations and administrative buildings. Monitoring of this water aspect is made on a monthly basis, the total volume collected at its facilities being recorded. In most - 64% - of these facilities, monitoring is performed using hydrometers installed in the water catchment system. In the other facilities - around 35% - this monitoring is carried out by measuring consumption, based on an estimate of 150 liters per employee per day. In addition, daily monitoring of the water levels of the main reservoirs of the Hydro Power Plants (HPPs) and the flow in the main rivers that make up Cemig's operations' water network is carried out.
Water withdrawals – volumes by source	100%	Cemig monitors water collection by source (public utility supply, artesian well, and surface catchment) in all of its operations and administrative buildings. Monitoring of this water aspect is made on a monthly basis, the total volume collected at its facilities being recorded. In most - 64% - of these facilities, monitoring is performed using hydrometers installed in the water catchment system for the several sources. In the other facilities - around 35% - this monitoring is carried out by measuring consumption, based on an estimate of 150 liters per employee per day. In addition, daily monitoring of the water levels of the main reservoirs of the HPPs and the flow in the main rivers that make up Cemig's operations' water network is carried out.
Entrained water associated with your metals & mining sector activities - total volumes [only metals and mining sector]	<Not Applicable>	<Not Applicable>
Produced water associated with your oil & gas sector activities - total volumes [only oil and gas sector]	<Not Applicable>	<Not Applicable>
Water withdrawals quality	100%	According to the guidelines of the Company's Biodiversity Policy, geared at creating more efficient strategies for biodiversity conservation and meeting state and federal resolutions, Cemig carries out Water Quality Monitoring. The water quality of Cemig's reservoirs is regularly monitored along a network of 47 reservoirs and more than 200 physical, chemical, and biological data catchment stations on the major watersheds of Minas Gerais. The monitoring is made upstream and downstream from the dams, so that the Company can identify if the watercourses are being impacted in any way. This monitoring acts as an assessment of the quality of the projects' effluent management, aiming at adjusting the parameters of the effluents to those set by the legislation. Analyzes and monitoring are made semiannually via the collection of physical, chemical and biological data on groundwater and surface water.
Water discharges – total volumes	100%	Cemig is responsible for the production of different classes of water effluents, namely, industrial effluents from demineralization operations for thermoelectric generation*, thermal effluents from equipment cooling processes in thermoelectric and hydroelectric generation, and administrative effluents for sanitary and administrative uses. All effluents generated by Cemig are monitored on a monthly basis. Total effluent volume produced is estimated based on the Brazilian standard NBR 7229 - Project, construction and operation of septic tank systems, which states the produced effluent volume should be estimated by calculating all consumed water and considering 80% discarded as effluents. *TPP Igarapé was shut down in late 2019
Water discharges – volumes by destination	100%	Cemig is responsible for the production of different classes of water effluents, namely, industrial effluents from demineralization operations for thermoelectric generation*, thermal effluents from equipment cooling processes in thermoelectric and hydroelectric generation, and administrative effluents for sanitary and administrative uses. All effluents generated by Cemig are monitored on a monthly basis. The total effluent volume produced is estimated based on the Brazilian standard NBR 7229 - Project, construction and operation of septic tank systems, which states the produced effluent volume should be obtained by calculating all consumed water and considering 80% as discarded as effluents. Destination of these effluents varies according to the conditions in each facility, from septic tanks at the facility itself, conventional treatment by a public utility, and return to the streams. *TPP Igarapé was shut down in late 2019
Water discharges – volumes by treatment method	100%	100% of the effluent generated is treated and the volumes generated and destined in each company installation are estimated according to normative principles considering that of all water consumed, 80% is an effluent. Most of it goes to conventional treatment systems, a public treatment network provided by local utilities. The rest goes to septic tanks within Cemig's own projects or to streams after due chemical adjustments. At TPP Igarapé, there is an internal process for treating the effluent involving pH adjustment, removal of suspended solids, and oils and greases which aims to meet the conditions for the discharge of effluent determined by Normative Resolution COPAM/CERH-MG nº 01, that provides classification of water and environmental guidelines for their classification, as well as establishing the conditions and effluent release patterns. The water used for power generation and equipment cooling is discharged into the tailrace system using a branch but is not measured.
Water discharge quality – by standard effluent parameters	100%	Also regarding effluents from HPPs, Cemig monitors the water quality both upstream and downstream from the dams to identify if the water courses are being impacted in any way. Grease traps are analyzed semiannually, and the water and oil separators tanks, monthly. Part of TPP Igarapé's effluent (which was shut down in late 2019) is industrial. The internal process for treating the effluent involves pH adjustment, removal of suspended solids, oils, and greases. Water quality of the discharge stream - Paraopeba River - is monitored downstream of the release to meet the law. For effluents destined for septic tanks inside the projects, discharge quality is monitored every six months, since this effluent volume and environmental impact are low. Only effluent from the oil and water separators tank is monitored monthly. Effluents from sanitary facilities are sent to the conventional treatment systems of local utilities.
Water discharge quality – temperature	100%	Cemig monitors water temperature upstream and downstream from its operations, so that the Company can identify if the watercourses are being impacted in any way. This monitoring acts as an assessment of the Company's effluent management quality, aiming at adjusting the parameters of the effluents to those set by the legislation. Regarding effluents from sanitary fixtures, 100% of them is sent to conventional treatment systems provided by local utilities and does not pose a risk to water bodies. So, the temperature parameter is not relevant for these effluents.
Water consumption – total volume	100%	All the water used in hydroelectric power generation is rated as non-consumptive. For thermoelectric generation, water consumption is monitored by demineralization and generation processes. For administrative consumption, based on monthly monitoring of water intake and effluent disposal in all of its operations, Cemig is able to monitor its total water consumption.
Water recycled/reused	Not relevant	Most of Cemig's power generation does not use water consumptively. The company consumes water only at TPP Igarapé and in administrative activities, the water recirculation rate being considered negligible in these operations. As there is no prospect of changes in the patterns of energy generation and water consumption, this scenario should not be changed in the short and medium terms.
The provision of fully-functioning, safely managed WASH services to all workers	100%	The provision of water, sanitation and hygiene services is fully satisfactory and is managed securely for all employees. Water from all the company's drinking fountains is analyzed quarterly to verify compliance with the water quality and freshness standards laid down by Ministry of Health Ordinance No. 05 from 09/28/2017 (Consolidation of the rules on health actions and services of the Unified Health System), Attachment XX, which determines microbiological criteria to be met by water samples collected during quarterly monitoring. The analyzes are performed by laboratories hired by the company that follow the criteria. In addition, all the company's units have an infrastructure with adequate sanitation.

## (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
Fulfillment of downstream environmental flows	100%	Cemig has an area dedicated to the management of water resources, which, via water planning, adopts operational measures in its hydroelectric plants aimed at calculating the optimal generation of each plant, thus ensuring the best use of water for generation without impacting other uses of the river basin. Each hydroelectric plant has its Operating Instruction defining its technical and operational parameters. The company also carries out efforts for integrated management of river basins it has projects on by participating in the National and State Water Resources Councils, River Basin Committees, Technical Councils and Working Groups, together with representatives of the government, other users of water resources and organized civil society.
Sediment loading	100%	Cemig monitors sediment loading at 86 stations located in its power plants, where water samples are collected and analyzed by an accredited laboratory. These analyzes allow the Company to assess the useful life of the reservoirs.
Other, please specify	Please select	

## 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	190719885	Higher	Total affluent volume from Cemig's plants in 2019 was 190,719,885 megaliters. In 2018, this volume was 136,164,070 megaliters. Collection in 2019 was higher than in 2018 due to the better hydrological conditions observed that year. This increase in total withdrawal does not represent a higher consumption since a large part of this water resource returns entirely to the course of the rivers where the plants operate. No significant variations in this volume are expected for the future (2021-2040), since Cemig will continue to maintain more than 96% of its energy matrix in water sources, coming from the 82 hydroelectric plants. In climate change scenarios, there is no assertive indication regarding change in water availability in the regions where Cemig's main plants are installed.
Total discharges	193230964	Higher	The following criteria for rating variations were used: Almost the Same = 0% to 10%; Major/Minor = 11% to 55%; Much Greater/Much Less = above 55%. Total discharges from Cemig's plants in 2019 were 193,230,964 megaliters. In 2018, this volume was 131,583,336 megaliters. The value of 2019 was higher than that of 2018 due to the greater affluent volume in 2019; also, there was a need to discharge 2,511,124 megaliters from Hydro Power Plants (HPPs) reservoirs in 2019. No significant variations in this volume are expected for the future (2021-2040), since Cemig will continue to maintain more than 96% of its energy matrix in water sources, coming from the 82 hydroelectric plants. In climate change scenarios, there is no assertive indication regarding change in water availability in the regions where Cemig's main plants are installed.
Total consumption	-2511124	Much lower	The following criteria for rating variations were used: Almost the Same = 0% to 10%; Major/Minor = 11% to 55%; Much Greater/Much Less = above 55%. In 2018, as the reservoirs were filled up in average, total consumption was positive. But in 2019, as there was, on average, a decrease in reservoirs storage, the total consumption was negative. No significant variations in this volume are expected for the future (2021-2040), since Cemig will continue to maintain more than 96% of its energy matrix in water sources, coming from the 82 hydroelectric plants. In climate change scenarios, there is no assertive indication regarding change in water availability in the regions where Cemig's main plants are installed.

## 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	% withdrawn from areas with water stress	Comparison with previous reporting year	Identification tool	Please explain
Row 1	Yes	1-10	About the same	Other, please specify (Digital Atlas of the Waters of Minas Gerais and Brazil's Water Resources Situation Report)	For all basins where there are hydroelectric plants, Cemig uses the digital Atlas of the waters of Minas Gerais. This tool consists on a georeferenced mapping, complete and updated on the surface water resources of the State of Minas Gerais. It is an unprecedented resource in Brazil and it is based on the technology of geographic information systems, which allows a great advance in the way of producing and transferring knowledge through the internet. To assess other basins outside the state of MG, the company uses the National Water Agency's Report on Brazil's Water Resources Situation. In addition to this devices, Cemig's reservoir operating teams use the Delft-FEWS system, considering the hydrological flow forecasting models, using the precipitation forecast data from the short, medium and long term ECMWF meteorological models and from the North American models GEFS and CFS. Cemig also considers withdrawals that are legally registered upstream, thus being able to anticipate water stress scenarios that account for affluent flows and existing funding, assisting in decision-making for the operation of plants and the sale of energy. The Emborcação HPP, which belongs to Cemig, is located in the hydrographic basin of the Paranaíba River, which has been under great pressure from other users of this system, basically users with the purpose of irrigation, in order to increase the flow of uses more and more. water withdrawn for irrigation. The impact estimates for the Emborcação HPP, in the next revision of physical guarantee, expected to occur in the year 2022, are of the order of 2.0% of the physical guarantee of the plant. This is only due to the increase in consumptive uses upstream.

## 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	190719661	Higher	Catchment of surface water at Cemig is mainly for energy generation. Total affluent volume from Cemig plants in 2019 was 190,719,661 megaliters. In 2018, this value was 136,163,853 megaliters. The 2019 figure was higher than 2018 due to the better hydrological conditions in that year. This volume variation is due to changes in rainfall in the period. We stress that not all collected water is consumed, since it is used to generate energy in hydroelectric plants. The water energy potential is leveraged. Cemig's only thermoelectric plant's trade operation is suspended by the electricity sector regulatory agency, at the request of the company. In 2019, Cemig started terminating the granting of its thermoelectric plant. Thus, the thermoelectric plant will stop consuming water. Surface water is collected for administrative consumption in a few facilities of the Company, and is equivalent to 30.1 megaliters.
Brackish surface water/Seawater	Not relevant	<Not Applicable>	<Not Applicable>	Cemig does not use brackish water in its operations. Therefore, this source is not relevant to Cemig. Due to its efforts to diversify the energy matrix and reduce dependence on water resources, the Company does not expect this source to become relevant.
Groundwater – renewable	Relevant	52.2	About the same	The abstraction of groundwater, through an artesian well, takes place in a few Cemig facilities, however the company considers all sources of water withdrawals it uses to be relevant. This withdrawal is only for administrative consumption purposes, in regions where there is no possibility of accessing the public water utility network and ground water is available. The volume of groundwater removed in 2018 was 49.84 mega liters, a volume very close to that recorded in 2019, which was expected, since there was no change in the standards and in the number of company facilities that resort to this source.
Groundwater – non-renewable	Not relevant	<Not Applicable>	<Not Applicable>	Cemig does not use non-renewable groundwater in its operations. Therefore, this source is not relevant to the Company. Moreover, this source is not expected to become relevant.
Produced/Entrained water	Not relevant	<Not Applicable>	<Not Applicable>	Cemig does not produce water in its operations. Therefore, this source is not relevant to the Company. In addition, due to the nature of Cemig's business, this source is not expected to become relevant.
Third party sources	Relevant	171.8	Lower	Almost all Cemig facilities use water from the public supply network in the several counties where the Company operates. This consumption is configured as administrative and sanitary consumption and is measured by the local sanitation concessionaire and charged directly to Cemig via monthly invoices. In 2018, 175.69 mega liters were measured, a volume very close to that measured in 2019 due to the maintenance of standards and the number of company facilities that use this source. For the upcoming years, the administrative consumption of water is expected to decrease due to the tendency of reduction in the number of company employees. Cemig considers all the sources of water it uses to be relevant.

## 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	193230785	Higher	The total volume affluent to Cemig's plants in 2019 was 193,230,785 megaliters, an increase of 45% in relation to the 131,583,785 mega liters registered in 2018. This volume refers to the use of water for energy generation, cooling equipment and any spillway maneuvers and returns fully to the watercourse under the same chemical conditions that were captured. The increase in the discarded volume is due to the increase in abstraction due to the greater natural inflows of the rivers. For Cemig, all forms of water disposal are relevant.
Brackish surface water/seawater	Not relevant	<Not Applicable>	<Not Applicable>	Cemig does not discharge brackish water. Therefore, this source is not relevant to the Company nor is it expected that this source will become relevant.
Groundwater	Relevant	41.7	About the same	In a few of Cemig facilities, administrative effluents are taken for septic tank treatment. The volume of this discharge is estimated to be 80% of the total volume of water consumed in the administrative areas of these facilities. As there were no changes in the standards and the number of facilities that carry out this destination, the volume registered in 2019 was very close to the 32.82 mega liters, registered in 2018. Cemig considers all forms of water disposal in its operations to be relevant.
Third-party destinations	Relevant	137.4	About the same	Except for installations that use on-site treatment with septic tanks, all Cemig facilities sent their administrative waste for treatment provided by local utilities, and the effluent volume is estimated based on a calculation considering that 80% of consumed water becomes an effluent. In 2019 the registered volume was slightly less than the 140.55 mega liters registered in 2018. The little variation is due to the fact that there were no significant variations in the standards and quantities of facilities that account for discharges from this destination. Cemig considers all forms of water disposal in its operations to be relevant.

## W-EU1.3

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

Yes

(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
0.43	Total water withdrawals	MWh	Lower	Cemig operates in the generation, transmission and distribution of electricity businesses; the latter two do not use water in the production process. Regarding the generation business, Cemig's generating complex is mainly made up of hydroelectric plants that produce energy without consuming the water used. Having only one thermal plant that uses water consumptively to generate energy, Cemig runs intensity calculations based on data related to this thermal plant performance. This indicator is used as an element to verify the plant's operational efficiency. The major improvement observed in 2019 was because TPP Igarapé generated practically twice as much energy than in the previous year. As the plant operated nonstop in the third quarter of 2019, its operation was optimized, resulting in this low water intensity. With the deactivation of the TPP Igarapé, Cemig is already devising a new way of calculating and evaluating its water intensity for 2020 that should take into account all the water withdrawal for energy generation in m <sup>3</sup> and the Company's net energy production in MWh.

W2. Business impacts

W2.1

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

Yes

W2.1a

(W2.1a) Describe the water-related detrimental impacts experienced by your organization, your response, and the total financial impact.

Country/Area & River basin

Brazil	Rio Doce
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Type of impact driver & Primary impact driver

Physical	Declining water quality
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Primary impact

Reduction or disruption in production capacity

Description of impact

On November 5, 2015, a dam of mineral waste from Samarco Mineração SA company, located in Mariana, Minas Gerais, collapsed. The dam is located at the head of the Doce River watershed, which resulted in an environmental disaster of great magnitude and repercussion. The breach of the dam released an estimated volume of 34 hm<sup>3</sup> of mineral waste, water and materials used in its construction, causing several socioeconomic and environmental impacts in the Rio Doce Basin. At the time of the Fundão dam rupture, power generation stopped at the Candonga, Baguari and Aimorés hydroelectric plants, which Cemig holds ownership interest in. Since then, Hydro Power Plant (HPP) Candonga has remained inoperative and the Cemig Group maintains a monitoring of suspended solids in the reservoir, besides assessing safety issues at the plant's facilities. Regarding guaranteed power output, Candonga Plant is less than 1% of the Cemig Group.

Primary response

Other, please specify (Infrastructure maintenance )

Total financial impact

0

Description of response

Cemig holds a 45% ownership interest in Aliança Energia company, a partner at the Candonga Hydroelectric Power Plant, resulting in a 22.5% interest in that plant. Since 2015, the Candonga reservoir is undergoing maintenance, paid for by Samarco, in order to return that plant to operation. In order to honor the energy sales contracts signed before the incident, Aliança Energia acquired all the necessary amount in the free energy market, which initially produced a negative result. Considering the incident was the responsibility of a third party, Aliança Energia filed a court petition asking the National Electric Energy Agency - ANEEL to maintain the plant's commercial operation, keeping it in the Energy Reallocation Mechanism - MRE, including with retroactive effect to the date of the incident. In April 2017, HPP Candonga obtained a court win, through an injunction, guaranteeing the plant's permanence in the MRE, retroactive to incident time. In December 2017, the court ruled granting the preliminary decision of having the plant remain in the MRE. The judgment was appealed, but the appeal has not yet been heard by the court. Thus, for now, it cannot be said that the incident suffered by HPP Candonga in 2015 caused losses Cemig's energy sales from that plant.

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?**

In line with the guidelines of the Company's Biodiversity Policy, whose premise is to establish more efficient strategies for biodiversity conservation and comply with state and federal resolutions, Cemig carries out a Water Quality Monitoring. This monitoring acts as an essential tool in the identification and gathering of information for the assessment and control of environmental impacts in aquatic ecosystems in all stages of its undertakings - from the design of the project to its operation. Also, Cemig has a Service Instruction – IS62 that rates minimum environmental requirements for rating of impacts to water ecosystems following the prerogatives of the National Environment Council - CONAMA Resolution 357, which provides for the classification of water bodies and environmental guidelines for their classification, and CONAMA 274, which defines criteria for bathing in Brazilian waters, in order to ensure the necessary conditions primary contact recreation, such as swimming, water skiing and diving from Cemig's reservoir.

The water quality of Cemig's reservoirs is regularly monitored along a network that includes 47 reservoirs and more than 200 physical, chemical, and biological data collection stations on the major watersheds of Minas Gerais. Collections for water quality monitoring generate a volume of information that is analyzed and stored in an extensive database called Siságua.

Water quality indexes are applied to assess degradation condition of water resources. These indexes aim at simplifying, quantifying, analyzing, synthesizing, and communicating data obtained during the monitoring. In order to translate and help communication with the stakeholders, Cemig uses the Water Quality Index - IQA, which it makes available at the Siságua System. The creation of the IQA was based on an opinion survey among specialists in water quality, who pointed out the variables to be assessed, their relative weight, and the condition with which each parameter is presented, according to a rating scale. This index takes nine evaluation parameters into account (pH, BOD, thermotolerant coliforms, total nitrogen, total phosphorus, temperature, turbidity, total residue, dissolved oxygen) and IQA is calculated by the weighted product of the water quality for these variables.

Cemig holds information campaigns for aspects that may interfere with water quality and energy generation, such as on the golden mussel, cyanobacteria, aquatic macrophytes, reservoir silting, ferro-bacteria, and others. One of the most relevant cases that pose risks to the health of the population is the presence of cyanobacteria in streams, because of their capacity to produce toxins. In relation to macrophytes, Cemig has monitoring programs in reservoirs impacted by eutrophication in order to assess the need to remove these plants and minimize their impacts on power generation. In hydroelectric reservoirs, the uncontrolled growth of macrophytes causes problems in the turbines, forcing frequent discharges using the spillways to remove the plants, thus wasting water and decreasing power production.

As a way of controlling water quality, the ROA - Environmental Occurrence Report procedure is also carried out; this is an internal form of Cemig used to report and record environmental events at the Company's facilities. With regard to possible occurrences of water pollution, the ROA is completed by the operation team to report situations of leakage of lubricating oils and other toxic products in the water, seeking to point out the causes and actions taken to stop the problem. After the ROA is completed, it is sent to the areas of interest.

Another important contribution of Cemig to spread knowledge about the water quality in its reservoirs is the constant improvement- via Research and Development Projects - R&D - of methodologies for the understanding and measurement of pollutants present in the water. Currently, there is a research project (R&D 610) for the development of passive samplers for the detection of emerging contaminants, defined as "toxic products that are not removed or eliminated by traditional water treatment processes for human consumption". We can define passive sampling as a set of extraction methods that allows the monitoring of different environmental pollutants over the long term. This study will include identification and quantification of pesticides at ultra-trace level to assess contamination of marginal lagoon waters and the São Francisco River.

#### W-E U3.1a

**(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	Water contamination by lubricating oils, greases and other products may occur during equipment maintenance in hydroelectric power generation operations. In the TPP Igarapé operations, there is a process of water demineralization to be used in generation that produces an industrial effluent. This effluent may contain chemical changes that modify the water pH. In substations of the energy transmission and distribution system there is equipment with insulating oil inside. Any leakage of this oil may contaminate the streams.	Compliance with effluent quality standards Measures to prevent spillage, leaching, and leakages Community/stakeholder engagement Emergency preparedness Other, please specify (● Oil regeneration and reuse)	The major risk of negative impact from Cemig's water pollution is the presence of oil in the waters of Hydro Power Plants (HPPs). All operating procedures within the Plant are conducted based on service instructions and quality standards. Any type of incident related to contamination or leakage is recorded and consolidated in an Environmental Occurrence Report - ROA. In 2019, 16 occurrences of oil spills were recorded in 8 facilities, namely: HPP Emborcação (4), HPP Irapé (2), HPP Amador Aguiar II (1), Small Power Plant (SPP) Neblina (1), HPP Nova Ponte (2), SPP Poço fundo (1), HPP Queimado (1), HPP Três Marias (4). In all, 1,265 liters of oil were spilled, with 5 events of oil spills in water and 11 events of oil spills on floors. Corrective measures were adopted for all recorded occurrences and, in the event of spillage on the ground, all contaminated solid waste was removed and disposed of correctly. Concerning TPP Igarapé, part of its effluent is rated as industrial effluent. This project has an internal process for treating the effluent involving pH adjustment, removal of suspended solids, and oils and greases, before the effluent is released into the receiving stream. Due to the treatment carried out, the effluent is often released with higher quality than the receiving stream. The receiving stream water quality - the Paraopeba River - is monitored downstream of the release point to compliance with the quality standards provided for in the legislation. In most of its substations, Cemig has a device called a water and oil separator intended to contain oil in the event of any leakage. These devices are monitored to verify compliance with environmental legislation and in 2019 there were no occurrences recorded in these facilities. Additionally, there are emergency response plans in the company.

### W3.3

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

Yes, water-related risks are assessed



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

Full

**Risk assessment procedure**

Water risks are assessed as part of an enterprise risk management framework

**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

ISO 31000 Risk Management Standard

Other, please specify (The SAP RM (Risk Management) software )

**Comment**

A Cemig possui uma política de gestão de riscos que orienta não apenas as empresas Cemig D e Cemig GT, mas também todas as subsidiárias integrais, sendo aprovada pelo Conselho de Administração. Dispõe ainda, de um software de gerenciamento de riscos, o SAP RM (Risk Management), que possibilita que o processo de mapeamento de riscos seja feito continuamente, à medida em que a atualização das informações, as verificações e as avaliações dos controles e planos de ação são informadas pelos titulares de cada atividade dentro do sistema.

**Supply chain****Coverage**

Partial

**Risk assessment procedure**

Water risks are assessed as part of an enterprise risk management framework

**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

Other

**Tools and methods used**

COSO Enterprise Risk Management Framework

ISO 31000 Risk Management Standard

Other, please specify (The SAP RM (Risk Management) software )

**Comment**

Cemig has a risk management policy that directs not only Cemig D and Cemig GT companies, but also all wholly-owned subsidiaries, and is approved by the Board of Directors. It also has a risk management software - SAP RM (Risk Management) - that allows the risk mapping process to be carried out continuously, as the updating of information, checks and assessments of controls and action plans are communicated by the holders of each activity within the system.

**Other stages of the value chain****Coverage**

Partial

**Risk assessment procedure**

Water risks are assessed as part of an enterprise risk management framework

**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**

COSO Enterprise Risk Management Framework

ISO 31000 Risk Management Standard

Other, please specify (The SAP RM (Risk Management) software )

**Comment**

In the analyzed scenarios, the company assesses the impacts due to regulatory changes and on the price structure that may impact the operation of its projects. Cemig participates in Water Resources Councils and Watershed Committees, Technical Councils, Working Groups, and also works with Industry Associations, monitoring the regulatory and tariff scenario, contributing to decision-making regarding regulation of water uses in the watersheds and their impacts.

## (W3.3b) Which of the following contextual issues are considered in your organization's water-related risk assessments?

	Relevance & inclusion	Please explain
Water availability at a basin/catchment level	Relevant, always included	Cemig operates in the electricity generation, transmission and distribution businesses, and transmission and distribution do not use water in the production process. In relation to the generation business, Cemig's generator park is predominantly composed of hydroelectric plants, which places the company in a context of high dependence on water resources for energy production. Cemig is aware of the importance of water resources for the maintenance of its business and for society. So, it has established a Water Resources Policy to define the principles that guide Company actions related to the theme. In carrying out its activities, Cemig undertakes to adopt practices of rational, integrated and sustainable use of water resources, prevention and defense against critical hydrological events, both of natural origin and from the inappropriate use of natural resources, and considering the needs of current and future generations. Also, Cemig has an area dedicated to the management of water resources, which, via water planning, adopts operational measures in its hydroelectric plants aimed at calculating the optimal generation of each thus ensuring the best use of water for generation without impacting other uses of the river basin. Each existing hydroelectric plant has an Operating Instruction defining its technical and operational parameters. In order to monitor water conditions in the basin it is present in, Cemig operates a hydrometeorological network with 583 monitoring spots, 232 of which are rainfall, 224 for discharges in streams, 74 for monitoring reservoir and river levels, and 53 climatological stations that monitor rainfall, temperature, air humidity, wind speed and direction, solar radiation, and atmospheric pressure.
Water quality at a basin/catchment level	Relevant, always included	Water quality can also directly influence the operations of hydroelectric plants and Cemig's relationship with its stakeholders. So as to minimize the risk associated with water quality in its reservoirs, Cemig regularly monitors a network covering the main hydrographic basins of the State of Minas Gerais at over 200 data collection points that, in addition to the physical and chemical parameters laid down in Brazilian legislation, also monitor biological groups such as phytoplankton, zooplankton and zoobenthos. The water quality in Cemig's reservoirs is regularly monitored along a network including 42 reservoirs and over 180 data collection stations. In addition, sediment monitoring is carried out at 86 stations located in its hydroelectric plants, where water samples are collected and analyzed by an accredited laboratory. All data produced is stored in SISÁGUA database, which is part of Minas Gerais Water Management Institute (IGAM) database. SISÁGUA enables adequate and uniform spatial and temporal assessment, so that the data obtained can be used by the company in all units its and also by partners. Monitoring is the measurement or verification of water quality and quantity parameters. Monitoring - ongoing or periodic - of the condition and quality control of the water body is carried out in accordance with National Environment Council - CONAMA Resolution 357 of 2005 and according to CONAMA Resolution 274 of 2000, which lay down levels for the balneability, in order to ensure the necessary conditions for primary contact recreation, such as swimming, water skiing, and diving. Statewide, the joint COPAM-CERH-MG Normative Resolution from 1/2008 must also be complied with.
Stakeholder conflicts concerning water resources at a basin/catchment level	Relevant, always included	Cemig considers this aspect as relevant as, at the end of 2019, 98% of its energy matrix came from water sources (82 hydroelectric plants, 47 Hydro Power Plants – HPPs and 35 Small Power Plants - SPPs). That is why Cemig monitors and follows up on conflicts with stakeholders through its active participation in Water Resources Councils, Watershed Committees, Technical Councils, and Work Groups, that include several watershed users and other stakeholders. Conflicts over use priority and the impacts caused to the watersheds are discussed and decided upon in such venues, with the participation of bodies that manage water resources. Cemig participates in 5 federal watershed committees and 20 state watershed committees. In addition, Cemig coordinates the Progra Proximidade, certified by ISO 9001, which is committed to working with the main stakeholders, such as government, civil defense, fire brigade, military police, water resources and environment management bodies, hydrographic basin committees hydrographic, municipal authorities, local communities, industry associations and other large users, which allow the identification of water-related conflicts with other users and promote social development in the communities surrounding the hydroelectric plants. Throughout the year, work meetings are held with these stakeholders and, through this program, the company also monitors the news published in the various communication channels, as well as receives demands during periods of flood or drought and acts to resolve possible conflicts with communities located in river basins where it has hydroelectric projects.
Implications of water on your key commodities/raw materials	Relevant, always included	Cemig considers this aspect as relevant as 98% of its energy matrix came from water sources (82 hydroelectric plants, 47 Hydro Power Plants – HPPs and 35 Small Power Plants - SPPs). In this context, water is Cemig's major raw material. Cemig monitors the amount of water available in rivers and its plants in real time through 262 telemetry stations belonging to the Telemetry, and Hydrometeorological Monitoring System (STH). In order to monitor water conditions in the basin it is present in, Cemig operates a hydrometeorological network with 583 monitoring spots, 232 of which are rainfall, 224 for discharges in streams, 74 for monitoring reservoir and river levels, and 53 climatological stations that monitor rainfall, temperature, air humidity, wind speed and direction, solar radiation, and atmospheric pressure. This monitoring makes it possible to analyze trends and estimate the frequency of events that may impact Cemig's operations, in addition to specifying the necessary measures to mitigate them, providing feedback for risk management tools. The tool employed is SISÁGUA.
Water-related regulatory frameworks	Relevant, always included	Cemig considers this aspect as relevant as 98% of its energy matrix came from water sources (82 hydroelectric plants, 47 Hydro Power Plants – HPPs and 35 Small Power Plants - SPPs). That is why Cemig actively participates in all water resource deliberative and regulatory venues, both at the federal and state levels, working on the drafting of policies and guidelines and, at the same time, monitoring regulatory trends, and is a major subsidy for the elaboration of impact estimates on the Company's projects at the local level. Estimates of potential regulatory changes include alterations in the rules for granting concessions, financial compensation, charging mechanisms and pricing structure. Charges for large hydroelectric plants are already regulated and there is no provision for regulatory changes in the short and medium term; as for Small Hydroelectric Plants, charging for water use is considered exempt under current legislation. For the use of untreated water in administrative areas and for thermoelectric generation, the several Hydrographic Basin Committees are deploying their respective collection mechanisms. The tool used to monitor regulatory aspects is CONDOR - an internal regulatory monitoring system.
Status of ecosystems and habitats	Relevant, always included	Cemig monitors the presence of invasive species, such as the golden mussel mollusk, which can lead to incrustations in pipes, pumps and equipment that, if not properly controlled, damage the equipment, damaging or making energy production unviable. This monitoring is carried out in person through periodic inspections of the equipment and through research and studies developed within Cemig's R&D program. Cemig operates fluviosedimentometric stations in order to monitor the sediment input and deposition in the reservoirs, in order to quantify and characterize the sediments brought by the rivers in some places of interest, to estimate the useful life of existing reservoirs and future uses. The silting up of reservoirs can lead to reductions and limitations in the productive capacity of hydroelectric plants.
Access to fully-functioning, safely managed WASH services for all employees	Relevant, always included	All Cemig employees are served by the appropriate water, sanitation and hygiene services. The concern with health, well-being and the adequate working conditions of employees makes this topic relevant to the company. In all installations, water potability control for human consumption is carried out according to the Ministry of Health Ordinance No. 05 of 28/09/2017, which determines microbiological criteria to be met by the monitored water samples. Samples are collected quarterly and analyzed in laboratories contracted by Cemig.
Other contextual issues, please specify	Not considered	N/A

## (W3.3c) Which of the following stakeholders are considered in your organization's water-related risk assessments?

	Relevance & inclusion	Please explain
Customers	Relevant, always included	An unfavorable hydrology scenario reduces hydroelectric generation in Brazil and, therefore, companies are unable to meet 100% of the volume planned in the agreements (guaranteed power output). Thus, the National Power System Operator (ONS) must engage thermal plants to meet part of the national demand. The greater the water deficit, the greater the chances of the Company having to buy energy in the short-term market to meet the requirements of the contracts. The impact of the materialization of this risk for that stakeholder will depend on the trade and risk management strategies adopted by Cemig, which may become from higher energy rates to an energy supply crisis. Thus, because they are directly impacted by the materialization of risk, customer engagement is important. To engage its customers, Cemig carries out the Energy Efficiency Program to disseminate the concept of responsible use of electricity, in addition to advertising campaigns with energy saving tips. This engagement is ongoing and covers all the company grant area.
Employees	Relevant, always included	In 2019, the total volume of water used for administrative purposes was 234,668 m <sup>3</sup> . This amounts to 90% of the total water volume used by the Company consumptively, which shows the importance of its employees to assessing water risks. The use of water for administrative purposes showed a reduction of only 2% in relation to 2018. Cemig believes there is room for more efficiency in the administrative use of water, which may reduce this consumption via actions aimed at the administrative management of water resources. To engage employees on this issue, the company conducts specific communications to raise awareness of the use of water, in addition to promoting campaigns that encourage individual consumption reduction initiatives such as the Illuminated Idea Contest, which aimed to promote solutions aimed at reducing the consumption of water, fuels, efficiency in the consumption of energy, water and reduction in the generation of waste.

Investors	Relevant, always included	An unfavorable hydrology scenario reduces hydroelectric generation in Brazil and, therefore, companies are unable to meet 100% of the volume planned in the agreements (guaranteed power output). Thus, the National Power System Operator (ONS) must engage thermal plants to meet part of the national demand. Cemig considers this aspect as relevant as 98% of its energy matrix came from water sources (82 hydroelectric plants, 47 Hydro Power Plants – HPPs and 35 Small Power Plants - SPPs). The greater the water deficit, the lower the energy generated at these plants, forcing the Company to purchase energy in the short-term market to meet contractual requirements. Moving the short-term market produces a higher cost for Cemig's power generation and this scenario will always impact the Company's earnings and, consequently, the interest of investors. That is why they must be engaged in risk assessments. The impact of materialization of this risk for that stakeholder will depend on the energy trade and risk management strategy adopted by Cemig. As a way of engaging with investors, Cemig holds meetings and conferences where it presents the level of storage in the reservoirs and the possible strategies for buying and selling energy.
Local communities	Relevant, always included	For operating its reservoirs, Cemig mapped the major agents in communities upstream and downstream of the plants, always proactively reporting on situations of severe floods and droughts. These situations directly affect communities and, therefore, it is important to engage them in water risk assessments. The Proximidade Program was created in order to boost ties between communities, the Company, and local Civil Defense teams. Therefore, the form of engagement with communities is through the Proximidade Program, which, in 2019, held 8 meetings covering 9 plants and 24 municipalities with the theme "Emergency Action Plan Preparation - Readiness and Emergency Culture", continuing with the 2018 meetings.
NGOs	Relevant, always included	Cemig always seeks to protect local communities as a whole. The direct channel between NGOs and the Company is through the Proximidade Program and Cemig's participation in water resources venues, where such organizations play an important role in representing civil society. NGOs participate actively and strategically in the drafting of laws and regulations of the National Water Resources Policy and the National Water Resources Management System. NGOs also participate in technical discussions between the main collegiate bodies that draft rules and lay down guidelines, such as the National Water Resources Council (PNRS), the State Water Resources Council (CNRS), the Federal and State Watershed Committees, the Technical Councils, and working groups, especially those dealing with the development of strategic plans for water resources and the regulation of Concessions and charging for water use. Therefore, the way to engage with NGOs is through Proximidade Program.
Other water users at a basin/catchment level	Relevant, always included	The use of water for the purpose of generating electricity is subject to the regulatory environment, the procedural order of the hydrothermal matrix of the National Interconnected System (SIN) being the responsibility of the National Power System Operator (ONS). Necessarily, the multiple uses of water by other users of the watershed must be taken into account in the operation and management of the reservoirs that Cemig uses for energy generation. This implies multiple environmental and safety restrictions. In periods of severe drought, as the one in the 2013 to 2017 period, the monitoring and forecasting of reservoir levels, as well as constant engagement with public authorities, civil society and users, were paramount in ensuring energy generation together with maintaining the other uses of water. Engagement is carried out via the Proximidade Program, where company specialists notify the operating conditions of the reservoirs and by participation in watershed committees. As a benchmark for engagement with users, we can mention the management of HPP Três Marias reservoir (396 MW), which in 2011-2018 was subject to restrictions due to the low rainfall rate. The management policy adopted by Cemig, the National Power System Operator (ONS) and the National Water Agency (ANA) ensured the feasibility of the Jaiba Irrigation Project (a grain and vegetable producer center in the São Francisco Watershed region). All decisions to provide for this important project are defined by a committee led by ANA, with the participation of ONS, Cemig, Chesf and the Watershed Committee, and several other institutions, during meetings held every two weeks.
Regulators	Relevant, always included	Cemig participates in the National Water Resource Council, State Water Resources Council-MG, Watershed Committees, Technical Councils, and Working Groups, Class Associations (Abrage), public hearings where the Watershed Master Plans, resolutions, bills, normative deliberations, and regulations for granting and charging for the use of water resources are discussed, drafted and approved. In these venues, the expertise of its specialists is used to act in the drafting of policies and guidelines for the regulation of water uses in watersheds. These policies and guidelines are laid down by regulatory bodies and directly impact Cemig's business, which makes the engagement of this stakeholder important. The engagement method consists of holding meetings to present technical information on reservoir management.
River basin management authorities	Relevant, always included	Cemig participates in the Water Resources and Watershed Committees, Technical Councils, Work Groups and works with Industry Associations (ABRAGE, APINE and ABRAGEL), which provide complete monitoring of the regulatory and tariff scenario, thus justifying the importance of engaging these stakeholders. In these venues, the Company establishes a dialogue with these local players, exposing the expected scenarios and assessing the possible impacts that changes in the occupation and use of water resources may cause to the Company's activities. The engagement method consists of holding meetings to present technical information on reservoir management.
Statutory special interest groups at a local level	Relevant, always included	Cemig participates in the Water Resources and Watershed Committees, Technical Councils, Work Groups and works with Industry Associations (ABRAGE, APINE and ABRAGEL), which provide complete monitoring of the regulatory and tariff scenario, thus justifying the importance of engaging these stakeholders. In these venues, the Company establishes a dialogue with these local players, exposing the expected scenarios and assessing the possible impacts that changes in the occupation and use of water resources may cause to the Company's activities. The engagement method consists of holding meetings to present technical information on reservoir management.
Suppliers	Relevant, always included	The Company carries out the geographic mapping of its critical suppliers, identifying whether they are located in areas under water stress. It was found that all of these suppliers are located in Brazil, so they are not exposed to water stress. In addition, Cemig conducts audits of its critical suppliers where it can identify non-conformities in relation to the use of water resources, and in 2020, questions with specific requirements on the appropriate use of water resources will be included in the audits. These non-conformities impact Cemig, due to its joint responsibility for the impacts of its supply chain. Therefore, it is important to engage suppliers. The engagement method is via face-to-face audits at suppliers' facilities.
Water utilities at a local level	Relevant, always included	Cemig maintains a grant control tool for all Company units in order to always monitor the validity of certificates, aiming at the continuity of water supply for local activities. Due to the high relevance of the potential impact of this non-continuity, it is important to engage local water supply companies in this process. The engagement method consists of holding meetings to present technical information on reservoir management.
Other stakeholder, please specify	Not considered	N/A

### W3.3d

#### (W3.3d) 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.

Corporate risk management is an integral part of Cemig's Corporate Governance practices, whose relevant activity is the mapping of events that may interfere with the achievement of the strategic objectives laid down by the Company, the so-called Top Risks. The modeling and analysis of operations from the point of view of risk management aims to optimize investments in activity control, reduce costs and losses, improve performance and, as a consequence, help achieving the goals set by the Company. Eventually, opportunities are identified and developed according to the Company's interests.

When a risk is first mapped at Cemig, the Company's corporate methodology instructs the following steps must be followed: identification - corresponding to understanding the scope, causes, and impacts of the risk; quantification - where the probability of occurrence is estimated, and the possible impacts, should that risk materialize; treatment - the survey of all actions and controls that act to mitigate that risk, as well as the mitigating effect of these actions on the mapped impacts; and monitoring - which consists of inserting the risk in the corporate tool, managing self-assessments of controls, mitigating initiatives, and validating risk with its holder. When there is a need to review a risk that has already been mapped, all information is updated via the system. With risk mapping, a report is produced containing the major pieces of information relating to that risk, the Risk Report, if it is a Top Risk.

Areas certified in ISO 9001, 14001 and OHSAS 18001 run their risk analysis based on ISO 31000 Risk Management Standard guidelines. The Committee of Sponsoring Organizations of the Treadway Commission - COSO, a world benchmark on the subject, stresses the importance of taking corporate risks into account, both when defining and monitoring the strategy. This way of bringing risks closer to the strategy allows the organization to anticipate and understand that changes can go beyond causing potential crises, and can also create opportunities.

The company has a risk management software - SAP RM (Risk Management) - that allows the risk mapping process to be carried out continuously, as the updating of information, and assessments of controls and action plans are communicated by the holders of each activity within the system.

In 2019, mapping of Top Risks was guided by themes prioritized by the Corporate Risks Monitoring Committee - CMRC and validated by the Executive Board and Board of Directors, covering the Holding, Distribution, Generation, Transmission and Marketing businesses and registered at SAP RM. The mapped risks also include those of a socio-environmental nature, linked to water resources and climate changes. Reporting of Top Risks to the Executive Board and the Board of Directors, as well as CMRC's treatment recommendations for each case, are continuous and strict according to the streamflow approved by the Committee.

Cemig's current risk management policy is a public document that guides not only Cemig D and Cemig GT companies, but also all wholly-owned subsidiaries, approved, and is approved by the Board of Directors. This policy also explains the risk appetite to be followed, is guided by principles that reflect the best market practices and, in particular, is aligned with the governance model called "Three Lines of Defense".

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

Cemig uses scales to classify risks and opportunities according to their financial impacts, intangible impacts, probability of occurrence, and relevance to the Company, with the distribution of percentage estimates between the points in each of the scales. Based on these scales, Cemig prioritizes each risk, which allows the ranking of risks within a matrix of exposure to risks/opportunities containing the risks/opportunities surveyed throughout the process. In addition, the aforementioned "financial impacts" variable used to define the risk/opportunity position in the exposure matrix, information on the financial implications of risks/opportunities is specifically fed with their controls and measures. Considering this, the system calculates the inherent risk/opportunity (that is, without management actions) cost/return, the residual risk/opportunity (after implementing controls), and the planned residual risk/opportunity (after implementing measures). This allows decision-making prioritized based on a robust financial analysis of scenarios with and without risk/opportunity management. At the moment, this analysis includes only the Company's direct operations.

An example of risks mapped with assessed financial impact is directly related to water availability. 2019 was another year of low hydrology in the Southeast region. The average ANE (Affluent Natural Energy) was below 80% of the historical average, against 90% in 2018. The long sequence of low hydrologies has kept reservoirs in the Southeast at levels below 60% at the end of the wet period, which historically have been low volumes. During the dry period, there was a rapid depletion that took reservoirs in the Southeast to values

close to historical lows. The Southeast Average DSP (Difference Settlement Price) in 2019 was R\$ 227.10/ MWh, about 20% below the average PLD of 2018. Despite the worsening in hydrology and storage throughout the year in the Southeast, generation surpluses in the North in the first semester and in the Northeast in the second, contributed to keeping the price lower. Thus, the GSF (Generation Scaling Factor) performed better in 2019 when compared to 2018, with an average value of 0.91 in 2019, against 0.84 in 2018.

### 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 exposed to water risk	% company-wide facilities this represents	Comment
Row 1	1	1-25	In order to guarantee its production of electric energy in the long term, and thus preserve its business plan, a hydroelectric project has a sanctioned streamflow for the right to use water resources. This sanctioned streamflow is part of the Watershed Water Resources plan, which establishes the streamflow percentage intended for each use for each type of user in the watershed. Recently, the Paranaíba River watershed has been under great pressure by irrigation users due to an increasing streamflow of consumptive uses for irrigation. Besides other hydroelectric plants located in the basin, there is Hydro Power Plant (HPP) Emborcação, which belongs to Cemig. Whenever consumptive uses are increased upstream of the watershed, hydroelectric plants downstream may suffer loss in guaranteed power output in periodic reviews, with a direct impact on their revenues. Just to give an idea, impact estimates for HPP Emborcação in the next guaranteed power output revision - scheduled for 2022 - amount to 2.0% of the plant's guaranteed power output. This is only due to the increase in consumption upstream.

## 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	Rio Paraiba
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### Number of facilities exposed to water risk

1

### % company-wide facilities this represents

1-25

### Production value for the metals & mining activities associated with these facilities

<Not Applicable>

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

Less than 1%

### % company's global oil & gas production volume that could be affected by these facilities

<Not Applicable>

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

Less than 1%

### Comment

Estimated impact on Hydro Power Plant (HPP) Emborcação guaranteed power output in the next review due to the increase in upstream collection for irrigation is around 10 MW in average. This is less than 1% of Cemig's guaranteed power output.

## 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 (In all watershed Cemig has hydroelectric generation projects)
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### Type of risk & Primary risk driver

Physical	Severe weather events
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### Primary potential impact

Reduction or disruption in production capacity

### Company-specific description

Climate changes can cause changes in rainfall patterns and produce extreme rain and drought events, as well as changes in their geographic distribution. In addition, there may be a change in the average amount of precipitation, changing the amount of water that reaches the reservoirs of the 82 hydroelectric plants in Cemig's generating complex. As Cemig's electricity production is basically hydraulic, 98% at the end of 2019, these changes may cause a reduction in its generation capacity. 2019 saw an improvement in hydrological conditions when compared to previous years, as the rainfall regime intensified, thus regulating storage in the Company's main reservoirs. Cemig's main accumulation reservoirs in December 2019, presented the following water availability: Camargos (15.99%), Emborcação (15.31%), Irapé (15.42%), Nova Ponte (18.20%), Queimado, (23.11%), Três Marias (48.01%). At the Três Marias HPP reservoir, where the reservoir level is monitored daily, there was an average annual increase of 102% in the useful volume of the reservoir. This way, year-end 2019 DSP was an average of R\$ 227.10, lower than the R\$ 288.57/MWh of 2018 (3rd highest in the past 10 years). Another factor affected by the system situation was Generation Scaling Factor (GSF), which states hydropower generation as a percentage of the seasonal guarantees of a plant's outtake. The GSF (Generation Scaling Factor) also showed improvement when compared to 2018, ending 2019 with averaging 0.91 against 0.84 (4th lowest in the last 10 years) in 2018.

### Timeframe

Current up to one year

### Magnitude of potential impact

High

### Likelihood

Likely

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

Yes, a single figure estimate

### Potential financial impact figure (currency)

3500000000

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

<Not Applicable>

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

<Not Applicable>

#### Explanation of financial impact

Cemig operates in the energy generation and distribution sectors; in order to define financial impact, it is necessary to make up a possible scenario combining negative factors that can affect energy purchases of the distribution companies and the operation of the generation companies, including (i) an adverse period in terms of rainfall, resulting in high spot prices; (ii) seasonalization of the Energy Reallocation Mechanism (MRE) guaranteed power output, allocating large volumes of energy in a certain period of the year, resulting in very low MRE adjustment factors. In this scenario, the factors reflect a significant increase in the expenses of the distributors with energy purchase, causing a big mismatch in the company's cash flow. In 2018, a year when this scenario occurred, the Company's tariff account registered a deficit of over R\$ 3.5 billion.

#### Primary response to risk

Use risk transfer instruments

#### Description of response

The Company's Board constantly manages its energy purchase contracts to mitigate the risk of exposure to the short-term market. Monitoring of the Generation Scaling Factor (GSF), which relates hydraulic generation to the seasonal physical guarantee of the plants, provides an outlook the exposure of hydroelectric players to the short-term market. Cemig participates in the Energy Reallocation Mechanism, which is a financial mechanism that aims to share the hydrological risks that affect generation agents. The negotiations are carried out through the Electric Energy Trading Chamber. The exposure caused by the GSF is mitigated throughout the year by risk management and renegotiation of hydrological risk.

#### Cost of response

15000000

#### Explanation of cost of response

Current management cost is associated with the maintenance of an electric energy planning, purchase and sale team (70 people). These people act in this risk and in other processes related to the trade of energy. Cost is recurrent.

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#### Country/Area & River basin

Brazil	Other, please specify (In all watershed Cemig has hydroelectric generation projects)
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#### Type of risk & Primary risk driver

Physical	Severe weather events
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#### Primary potential impact

Reduced revenues from lower sales/output

#### Company-specific description

Undesirable impacts on reservoirs due to siltation, which could occur more quickly or (in an optimistic scenario) more slowly, depending on how the change in precipitation and hydrological levels occur in each reservoir. Cemig monitors reservoir silting in several ways, including mapping changes in the shape of reservoir beds due to sedimentary deposits, monitoring of reduction in the volume of reservoirs, reservoir life studies, and monitoring of sedimentation volume. The most critical reservoirs are: Rio de Pedras SHPP (9.28 MW), Salto Grande HPP (102 MW).

#### Timeframe

More than 6 years

#### Magnitude of potential impact

Medium

#### Likelihood

Unlikely

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

Yes, an estimated range

#### Potential financial impact figure (currency)

<Not Applicable>

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

111331.08

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

3437118500

#### Explanation of financial impact

Less than 0.5% of Cemig GT's net operating revenue. It occurs due to the reduction or disturbance in hydroelectric plant power generation capacity, caused by the accumulation of sediments in the reservoir.

#### Primary response to risk

Other, please specify (Monitor the sediment load being released into the water body)

#### Description of response

This risk is managed through a series of actions such as mapping the change in the reservoir bed morphology due to sediment deposit, monitoring the decrease in the volume of reservoirs, studying the useful life of the reservoirs, and monitoring of sediment input. Monitoring of sediments at Cemig is currently carried out at 86 stations located in the vicinity of each of its Hydro PowerPlants - HPP and its Small Power Plants - SPP.

#### Cost of response

1650000

#### Explanation of cost of response

Costs are annual and associated with the maintenance of equipment and meteorological teams, the maintenance of the telemetry and hydrometeorological monitoring system, with sediment monitoring services in 86 stations located in the hydroelectric plants.

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## Country/Area & River basin

Brazil	Other, please specify (In all watershed Cemig has hydroelectric generation projects)
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## Type of risk & Primary risk driver

Regulatory	Regulatory uncertainty
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### Primary potential impact

Increased operating costs

### Company-specific description

Charges for use of water for large hydroelectric plants is already regulated, there are no regulatory changes expected in the short and medium run. For Small Hydroelectric Plants, charging for the use of water is considered exempt pursuant current legislation. A regulatory change suspending the exemption from charging for the use of water for Small Power Plants -SPPs, plants with installed power less than 30MW, would cause an additional cost for Cemig's generating complex. Altogether, Cemig has 62 SPPs, amounting to 12% of the company's nameplate capacity.

### 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)

1352590

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

<Not Applicable>

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

<Not Applicable>

### Explanation of financial impact

Financial impact refers to the estimate for levying of taxes on Small Hydroelectric Plants (SPPs). For large hydroelectric plants, that figure is calculated using the equation  $(7.00\% \times \text{generated energy in MWh} \times \text{TAR})$ . Reference Updated Tariff (TAR) for 2019 is R\$77.38/MWh, a 4.53% variation against 2018. In this way, a projection of the financial impact of an eventual charge for the use of water in the SHPs is calculated following the same equation, as in 2019 249.712 MWh were generated by Cemig's SHPs:  $7.00\% \times \text{R } \$ 77.38 \times 249.712 = \text{R } \$ 1,352,590$ .

### Primary response to risk

Engage with regulators/policymakers

### Description of response

Cemig's work to manage the risks of regulatory changes occurs through participation in appropriate forums for discussions on the topic, such as the National Water Resources Council, the State Water Resources Council-MG, Hydrographic Basin Committees, and Sector Associations, where they are discussed, drafted and approved the River Basin Master Plans, normative resolutions, bills of law, and regulations for granting and charging for the use of water resources. Cemig has, within its Generation and Transmission Directorate, a Generation Expansion and Operation Superintendence, which through the team of engineers and hydrologists of the Energy Planning Management transits in these environments, in order to act in the elaboration of policies and guidelines regarding the regulation of water uses in basins. In tandem, the company has a Relationship and Sectorial Regulation Supervisory Board that monitors regulatory changes and calls on a water resource management team whenever the theme is relevant. Estimates of potential regulatory changes include alterations in the rules for granting concessions, financial compensation, charging mechanisms and pricing structure.

### Cost of response

364000

### Explanation of cost of response

Costs to manage that regulatory change risk are associated to the maintenance of the water resource management team and the institutional relation and sectorial regulation team.

## 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 (Em todas as hidrelétricas da Cemig)
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### Stage of value chain

Use phase

### Type of risk & Primary risk driver

Reputation & markets	Changes in consumer behavior
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### Primary potential impact

Reduced revenues from lower sales/output

### Company-specific description

Unfavorable hydrological scenarios lead to constant increases in energy price, which, associated with the country's adverse economic scenario, increases the risk of default by consumers or theft of energy. In 2019, a total of 1,057,638 power outages were performed due to non-payment of the service, 67,117 more than in 2018. Losses from default directly impact Cemig D's cash, as the company needs to pay the energy bill from the generators, regardless of whether it receives payment from final consumers; the transmission service; charges in the electricity sector and 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)

199000000

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

<Not Applicable>

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

<Not Applicable>

### Explanation of financial impact

Financial impact is related to revenue loss and the consequent pressure on the distributor utility cash from the risk of not covering the system maintenance and operation costs. The financial impact is for the year 2019 and refers to losses due to default. The impact is calculated based on all billings not received in the year. The final amount of the impact is a sum of all invoices issued by Cemig and not paid by consumers. The amount is disclosed in Cemig D Administration Report.

### Primary response to risk

Direct operations	Other, please specify (Engagement with consumers )
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### Description of response

In order to mitigate that risk, the Company uses several communication and collection tools to inhibit an increase in defaults. The measures adopted include telephone calls, sending of e-mails, SMSs, collection letters, blacklisting of defaulting customers, judicial collection, and cutting of the power supply. For the second year in a row, the Company did over 1 million supply interruptions (power cuts) in the several consumer classes. In 2019, Cemig promoted several combat actions, including carrying out 300 thousand inspections throughout the state of Minas Gerais, amounting to an increase of 62% against 2018, when 185 thousand inspections were carried out. These inspections meant an R\$ 88.21 million increase in Cemig's revenue.

### Cost of response

14842380

### Explanation of cost of response

The costs involve the team responsible for gaging default and the whole action plan and measures to reduce commercial losses. For 2020, the effective implementation of new dialogue and collection tools with defaulting consumers is expected, such as: 1. technological platform for solving extrajudicial conflicts for debt negotiation; 2. protest of notarial debt securities; 3. hiring of a partner company specialized in collecting complex debts. Thus, with the intensification of the application of debt collection tools, the Company is confident in the trend of reducing default rates for the coming years.

## 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) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.****Type of opportunity**

Products and services

**Primary water-related opportunity**

New R&amp;D opportunities

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

The opportunity is related to the expansion and development of a new business linked to distributed generation. With that strategy, Cemig reduces its risk exposure related to oscillations in energy purchase due to adverse hydrological scenarios and gains revenues with the new distributed generation service portfolio. Throughout 2019, Cemig's operating model in the distributed mini-generation market was perfected, and Cemig SIM! was created from the synergy between Cemig Geração Distribuidora and Efficientia. The latter is a company that provides distributed generation and electric energy services through solar farms installed in the State of Minas Gerais, also offering solutions in energy efficiency, energy storage, and electric mobility. In February 2019, Cemig's first mini distributed generation plant, PVU Janaúba, started operating with 5MW of power. It was built and operated in partnership with Mori Energia Holding S.A. The project is located in the municipality of Janaúba, in the northern region of the state of Minas Gerais, and generates energy to offset the consumption of commercial and industrial customers supplied at low voltage. CEMIG SIM aims at expanding its nameplate capacity to up to 142 MW by 2021, already with investments in 2019 close to R\$ 300 million.

**Estimated timeframe for realization**

Current - up to 1 year

**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)**

150000000

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

&lt;Not Applicable&gt;

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

&lt;Not Applicable&gt;

**Explanation of financial impact**

The financial impact is related to the growth estimate of the distributed generation market in the state of Minas Gerais via projects to be deployed by Cemig. From the publication of Resolution 482, which establishes the general conditions for the access of microgeneration and distributed mini-generation to the electricity distribution systems, the electric energy compensation system, in 2012, to December 2019, 33,880 generating units have already been connected by the Company, 33,745 (99.6%) of which are photovoltaic solar, 97, thermal (biogas), 31, hydraulic, and 7, cogeneration (biomass) sources, totaling an installed capacity of 407.4 MW with Distributed Generation. In 2019, 22,403 new installations were carried out by the Company, which practically tripled the total number of utility connections in Cemig's concession area in just one year. This number represents an increase of 294% against the total installations carried out until 2018. These figures show the potential of that market and intervention opportunities for Cemig.

**Type of opportunity**

Other

**Primary water-related opportunity**

Other, please specify (Relacionamento com a comunidade)

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

In a quest to promote a closer relationship and foster social development in the communities surrounding reservoirs, establish initial readiness of the Emergency Action Plan (PAE), and publicize Cemig's environmental actions conducted in the dam reservoirs in communities close to hydroelectric plants, Cemig carries out the Proximidade Program. In that Program, meetings are held where specialists give objective lectures to clarify operational aspects of the plants to the population. Other issues, such as dam safety and safe coexistence with the electrical system, are also among the topics covered. In 2019, some "Preparing the PAE" Work Meetings were held, moving on with the activities started in 2018. With the eight meetings held in 2019, there were 21 work meetings, covering 9 plants and 24 counties. Cemig officially delivered the Emergency Action Plans for the 34 dams within the legal deadline of 30/Apr/2019. As these are documents that are constantly updated, the COMPDEC coordinators have a link to access the document, which will always be in its latest version. The other Integration Workshops will be held during 2022.

**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)**

20000

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

&lt;Not Applicable&gt;

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

&lt;Not Applicable&gt;

**Explanation of financial impact**

The financial impact was estimated by calculating the spontaneous media (favorable news) of Proximidade Program via its advertising in newspapers, websites, radio, TV and other media. The calculation of spontaneous media is made by measuring the space in cm<sup>2</sup> or cm / col (or time if it is TV and Radio) achieved by the initiative in a publication of a printed newspaper and calculating the value of the investment necessary for the publication of an advertisement equivalent to the same size / duration on that particular vehicle. In 2019 the respective values were composed of, 40% on radio, 35% on TV and 25% in other media

## 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)**

HPP Emborcação

**Country/Area & River basin**

Brazil	Rio Parnaíba
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**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

**Oil & gas sector business division**

&lt;Not Applicable&gt;

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

9253120

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

Higher

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

9253120

**Withdrawals from brackish surface water/seawater**

0

**Withdrawals from groundwater - renewable**

8.53

**Withdrawals from groundwater - non-renewable**

0

**Withdrawals from produced/entrained water**

0

**Withdrawals from third party sources**

1.47

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

10725847

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

Higher

**Discharges to fresh surface water**

10725838.31

**Discharges to brackish surface water/seawater**

0

**Discharges to groundwater**

0

**Discharges to third party destinations**

7.69

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

-1472.71

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

Much lower

**Please explain**

Inside Emborcação plant, water is collected for three purposes. 1. The water is taken directly from the river for energy generation, so all the water collected is returned to the river. 2. The water is collected directly from the river to cool the generation equipment, so all the water collected is returned to the river. 3. The water is collected from an underground source and supplied by the municipal utility for administrative consumption; so, 80% of the collected water is discarded in the utility network. In 2019, the plant produced more energy due to greater inflow on Paranaíba River, hence the increase in water intake. Also due to greater inflows in 2019, the the Hydro Power Plant (HPP) ended up pouring water from its reservoir, discarding a larger volume than it collected. Negative consumption means the reservoir depleted (reduced the level) throughout the year.

**(W5.1a) For the facilities referenced in W5.1, what proportion of water accounting data has been externally verified?****Water withdrawals – total volumes****% verified**

76-100

**What standard and methodology was used?**

The data were verified in the scope of the external audit of the 2019 Annual and Sustainability Report, conducted by Bureau Veritas Certification Brazil (Bureau Veritas). The verification scope covered the Global Reporting Initiative Standards and Principles for Sustainability Reports regarding the GRI Standards, including the electricity sector Supplement. Bureau Veritas developed a set of interviews and evidence checks, verifying information from the various GRI indicators and topics.

**Water withdrawals – volume by source****% verified**

76-100

**What standard and methodology was used?**

The data were verified in the scope of the external audit of the 2019 Annual and Sustainability Report, conducted by Bureau Veritas Certification Brazil (Bureau Veritas). The verification scope covered the Global Reporting Initiative Standards and Principles for Sustainability Reports regarding the GRI Standards, including the electricity sector Supplement. Bureau Veritas developed a set of interviews and evidence checks, verifying information from the various GRI indicators and topics.

**Water withdrawals – quality****% verified**

76-100

**What standard and methodology was used?**

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

**Water discharges – total volumes****% verified**

76-100

**What standard and methodology was used?**

The data were verified in the scope of the external audit of the 2019 Annual and Sustainability Report, conducted by Bureau Veritas Certification Brazil (Bureau Veritas). The verification scope covered the Global Reporting Initiative Standards and Principles for Sustainability Reports regarding the GRI Standards, including the electricity sector Supplement. Bureau Veritas developed a set of interviews and evidence checks, verifying information from the various GRI indicators and topics.

**Water discharges – volume by destination****% verified**

76-100

**What standard and methodology was used?**

The data were verified in the scope of the external audit of the 2019 Annual and Sustainability Report, conducted by Bureau Veritas Certification Brazil (Bureau Veritas). The verification scope covered the Global Reporting Initiative Standards and Principles for Sustainability Reports regarding the GRI Standards, including the electricity sector Supplement. Bureau Veritas developed a set of interviews and evidence checks, verifying information from the various GRI indicators and topics.

**Water discharges – volume by treatment method****% verified**

76-100

**What standard and methodology was used?**

The company has an Environmental Management System (ISO 14001) and Quality Management System (ISO 9001) that check the treatment systems and release conditions of effluents at company units. The discharge conditions must meet DN COPAM/CERH-MG 1/2008, which provides on the classification of water bodies and environmental guidelines for their pigeonholing, as well as laying down the conditions and standards for effluent release, among other provisions.

**Water discharge quality – quality by standard effluent parameters****% verified**

76-100

**What standard and methodology was used?**

The company has an Environmental Management System (ISO 14001) and Quality Management System (ISO 9001) that check compliance with legal requirements. The discharge conditions must meet DN COPAM/CERH-MG 1/2008, which provides on the classification of water bodies and environmental guidelines for their pigeonholing.

**Water discharge quality – temperature****% verified**

76-100

**What standard and methodology was used?**

The company has an Environmental Management System (ISO 14001) and Quality Management System (ISO 9001) that check the treatment systems and release conditions of effluents at company units. The discharge conditions must meet DN COPAM/CERH-MG 1/2008, which provides on the classification of water bodies and environmental guidelines for their pigeonholing.

**Water consumption – total volume****% verified**

76-100

**What standard and methodology was used?**

The data were verified in the scope of the external audit of the 2019 Annual and Sustainability Report, conducted by Bureau Veritas Certification Brazil (Bureau Veritas). The verification scope covered the Global Reporting Initiative Standards and Principles for Sustainability Reports regarding the GRI Standards, including the electricity sector Supplement. Bureau Veritas developed a set of interviews and evidence checks, verifying information from the various GRI indicators and topics.

**Water recycled/reused**

**% verified**

76-100

**What standard and methodology was used?**

The amount of water recycled at the company is not yet significant.

**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 Commitment to safely managed Water, Sanitation and Hygiene (WASH) in local communities Acknowledgement of the human right to water and sanitation Recognition of environmental linkages, for example, due to climate change Other, please specify (Actions focused on water conservation and preservation of water sources, safe management of their reservoirs, climatological and quantitative monitoring of water, and water and sedimentometric quality)	Cemig is aware of the importance of water resources for the maintenance of its business and for society. So, it has established a Water Resources Policy in order to define the principles that govern the Company's actions on the theme. The Policy, approved by the Executive Board, applies to all of the Company's operations. When carrying out its activities, the Company undertakes to adopt practices of rational, integrated and sustainable use of water resources, prevention and defense against critical hydrological events, both of natural origin and resulting from the undue use of natural resources, considering the water availability and current and future generation needs. That policy has the following principles: Water Resource Management, Water Resource Conservation, Participation in Public Administration and compliance with the Legislation for Water Resources, Safe Reservoir Management, Water Weather and Quantitative Monitoring, Water Quality and Sediment Monitoring, Relations with Stakeholders, and Development. Survey.

**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)	The person with the highest level of direct responsibility for water issues at Cemig is the Director of Generation and Transmission, who reports directly to the Presidency of the Company, with the Presidency being the highest level of the Executive Board, which is considered a group that belongs to the Company's management. The functional attributions of this Director, defined and approved by the Board of Directors, are: to manage the processes and activities of generation and transmission of electric energy; to manage the strategic generation indicators, such as: efficient management of generation assets, costs and results, plant availability, dam safety, risk and liability mitigation. Since most of Cemig's power generation is from hydroelectric sources, the Director of Generation and Transmission has his activities fully linked to water issues that affect Cemig's operations. During his managerial career at the company, he worked in all areas of the generation and transmission segment. The Beginning of the Proximidade Platform usability tests in 2019, was an example of a strategic decision taken by this Director. The Proximidade Platform is a georeferenced system to support the operation command system for easy-to-use emergency events. Through it, it is possible to build a continuous relationship between the affected community and preparedness and response bodies, together with Cemig's projects, thus creating a culture of readiness for extreme events in the reservoirs. This brings enormous gains to the preparation and response process of the company and stakeholders, members of the Hydrographic Basin Committee, local communities and the technical teams that operate the reservoirs. Thus, the Proximidade Platform becomes a management tool for risks related to water issues.

## 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	Monitoring implementation and performance Overseeing acquisitions and divestiture Overseeing major capital expenditures Reviewing and guiding annual budgets Reviewing and guiding business plans Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding strategy Reviewing and guiding corporate responsibility strategy Reviewing innovation/R&D priorities Setting performance objectives	Cemig has indicators for the management of water resources, which are periodically analyzed, showing a trend to meet the targets and allowing for any interventions that may prove necessary. The Plant Energy Planning Efficiency Index - IEPE stands out. It measures the efficiency of the energy operation of Cemig's hydroelectric plants by comparing the verified energy generation with the optimal generation, taking into account the observed discharges, the maintenance of generating units, and compliance with operational restrictions. This indicator is aligned to the Generation businesses corporate map, linked to the strategic goal of "Increase operational efficiency". The greater its result means better the planning for the use of water to generate electricity. Just like in the past few years, there was practically no overflow in the plants due to the low inflows seen in the period. This ended up contributing to IEPE result once again exceeding the target, which for this year of 2018 was 93%. The result for IEPE 2019 remained at 93.23%.

## 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).

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

Chief Operating Officer (COO)

**Responsibility**

Managing water-related risks and opportunities

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

More frequently than quarterly

**Please explain**

The person with the highest level of direct responsibility for water at Cemig is the Director of Generation and Transmission, who reports directly to the CEO. As water is the main raw material for power generation, the Director of Generation and Transmission daily monitors water risks using the level of the Company's reservoirs, and also weather forecasts. The most relevant information on the matter is presented weekly at the Executive Board meetings, and monthly at the Board of Directors meetings.

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

Other, please specify (Risk Monitoring 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 the fulfillment of the duties related to the management of corporate risks by monitoring them and recommending mitigation actions. We can highlight the following duties: Promote the discussion of strategic and operational issues in the Corporate Risk Management Process; Continuously monitor the scenario the Company operates in and its corporate risk matrix, in order to identify major risks and recommend priority mitigating actions to be presented to the Executive Board; Continuously monitor the scenario the Company operates in and its corporate risk matrix, in order to identify the main risks and recommend priority mitigating actions to be presented to the Executive Board; Recommend guidelines and procedures to be adopted in the Corporate Risk Monitoring Process for approval by the Executive Board.

**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	The variable remuneration (PLR) of the Directors is linked to the Company result indicators. The weight of the result of these indicators for members of the Executive Board is 70%. Also, a specific indicator basket was defined, reflecting the contribution of each Executive Board to the business, weighing 30%. Since 2012, the PLR paid to the Officers is conditioned to the achievement of individual corporate goals defined by the Board of Directors according to the Company's strategy. Specifically for managers, starting in 2020, a basket of indicators will be considered, deployed from the corporate strategic indicators. Thus, among others, ISUSTENT will be one of the variable remuneration indicators in the Communication and Sustainability Department - DPR/CS, Total Distribution Loss Indicator - IPTD in Cemig Distribution Department - DCD and Energy Impacted by the Guaranteed Power Output Decrease Mechanism - EIMRGF in Generation and Transmission Board - DGT.

**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 (● Chief Operating Officer (COO))	Other, please specify (Improvements in efficiency – direct operations)	In Brazil, energy provided by National Interconnected System (SIN) is the reference for national energy supply. For this, the Ministry of Mines and Energy grants each plant a certificate corresponding to the maximum amount of energy it can sell, called Guaranteed Power Output. As the hydroelectric plants do not deliver the energy provided by their Guaranteed Power Output to the system, and this almost always occurs due to the low water availability, the Guaranteed Power Output of the enterprise is recalculated by the Physical Guarantee Reduction Mechanism. This Guaranteed Power Output reduction limits the maximum amount of energy that the project can sell, reducing its future revenues. The EIMRGF indicator tracks the total amount of energy (MWh) impacted by the Guarantee Reduction Mechanism, considering the Guaranteed Power Output of all generation projects. The verified values and the result projections of this indicator reflect the performance of the operational availability of each plant (directly related to the affluent flow), in an accumulated period of 60 months, compared to a reference value for this availability, defined by ANEEL. This result can be up to 10% of the Director of Generation and Transmission's variable remuneration. To receive this benefit, the indicator must be <28,000 Mwh. For PLR 2020_2021, the target was reset to <= 5,776 MWh.
Non-monetary reward	Other, please specify (Employees)	Other, please specify (Efficiency project or goal - direct operations)	In 2017, Cemig held the Ideia Iluminada Contest, which aimed at fostering solutions geared at reducing fuel consumption, raising efficiency in energy and water consumption, and reducing the production of waste. Of the 44 projects submitted by Cemig employees, the winner was a system for using rainwater for consumption in the Company's main building in Vila Mariana neighborhood, in the city of Governador Valadares. The project opened in December 2018. And its results were disclosed in an internal publication as a way of acknowledging the effort carried out.

**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 actively participates in all deliberative and regulatory venues on water resources at the federal and state levels, such as the National and State Water Resources Councils, Watershed Committees. With operations focused on Minas Gerais, Cemig is a member of 21 state and 04 federal watershed committees and is also a member of the Brazilian Association of Electricity Generating Companies (Abrage), with effective performance in the Water Resources Working Group (GTRH). As a result, Cemig influences the drafting of policies and guidelines and, at the same time, monitors regulatory trends, an important subsidy for the elaboration of impact estimates on the Company local projects.

The employees who participate in these forums are technically prepared, always being specialists in water resources, to represent the company's interests and always guided by the Company's ethical principles and code of conduct, which provides guidelines such as: i) act in accordance with the Constitution, Cemig's law, regulation and internal rules; ii) act in a professional manner, committed to Cemig's activities, its mission, vision, values and principles; iii) act in a way that does not create conflicts with Cemig's interests; iv) respect Cemig's interests in all professional relationships that are established. In the event of a misconduct, the code of ethics itself regulates these situations with mechanisms for reporting the investigation by the ethics committee.

## 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)

## 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	The main drivers of Cemig's business strategy are defined in the context of (i) the business plan for the following fiscal year and (ii) the updated long-term strategy with analysis of risks and opportunities for at least the next five years. The current strategic plan is designed for two timeframes, 2025 and 2040, considered as medium and long term and related to balanced growth, both through new projects and via mergers and acquisitions, with the main commitments of sustainable growth and adding value to shareholders in the long term. Aiming at expanding installed capacity through a low risk portfolio. One of the guidelines is the recovery of its capacity to generate energy from renewable sources (hydroelectric, wind and solar). In this line of action and considering the importance of diversifying energy sources as a way to minimize the impact on energy supply in a situation of hydric stress, as Cemig's main source of generation is hydroelectric, the strategy of purchasing incentivized energy (wind and solar) through auction stands out.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	16-20	The major drivers of Cemig's business strategy are defined for two timeframes: 2025 and 2040, the medium and long term. In this line of action, the strategy to expand the installed capacity of existing plants stands out. The company has an area dedicated to analyzing scenarios, risks and opportunities and market trends that is responsible for preparing the strategic planning. The company's strategic planning considers aspects of eco-efficiency and environmental management, establishing goals to reduce water consumption throughout the company and increase production efficiency through energy planning. Risks and opportunities related to water are classified and prioritized in exposure matrices by the Corporate Risk Monitoring Committee and presented to the Executive Board. The medium and long term strategy (2020 to 2040) includes the recovery of generation capacity by acting as an energy trader in the free market and also via participation in energy auctions, in addition to taking advantage of solar and wind energy opportunities.
Financial planning	Yes, water-related issues are integrated	16-20	There is financial planning in which water issues are integrated in order to mitigate the risks of loss of hydroelectric generation capacity due to unfavorable future hydrological scenarios, considering the medium and long term (2020 to 2040). One of the strategies adopted was financial planning for the purchase of renewable energy (solar and wind) through auctions. In 2018, Cemig acquired 431.49 MWm in this auction mode.

### 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)

69

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

-44

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

-37

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

19

##### Please explain

CAPEX data for 2019 refer to the modernization of the Hydrometeorological Telemetry System (STH). OPEX data is operation of the hydrometeorological network and financial compensation for the use of water resources (CFURH) - more information: [http://www.cemig.com.br/en-us/Company\\_and\\_Future/Sustainability/water\\_resources/Pages/amounts\\_paid\\_by\\_cemig.aspx](http://www.cemig.com.br/en-us/Company_and_Future/Sustainability/water_resources/Pages/amounts_paid_by_cemig.aspx). CAPEX variation before the current cycle relates to the amount invested in the modernization of STH. OPEX reduction is partly assigned to decrease in amount paid for financial compensation (-10% against the previous cycle). For 2020, an increase in investment is expected due to deploying of the Emergency Action Plan, and also the continued upgrading of STH. CAPEX and OPEX variation remains significant due to the need for adjustments and compliance with industry regulatory demands. OPEX is expected to continue to decline in the coming years.

### W7.3

#### (W7.3) Does your organization use climate-related scenario analysis to inform its business strategy?

	Use of climate-related scenario analysis	Comment
Row 1	Yes	Based on the Corporate Risk Management System, Cemig analyzes scenarios and determines the degree of financial exposure to risks, considering the probability of occurrence and its impact, and lays down control measures for the following risks: reservoir silting, forecast weather deviations, loss of PCH physical security, and decreased water availability with impacts on trade. The company also invests in research projects and weather forecasting tools that can impact its business. Acquisition of a weather radar and inclusion in R&D projects GT 0552-Evaporation of the Reservoir of Hydro Power Plant (HPP) Funil: Characterization of the Water Footprint and Strategic R&D Project No. 010/2008 "Effect of Climate Change on the generation of electricity" stand out.

### W7.3a

#### (W7.3a) Has your organization identified any water-related outcomes from your climate-related scenario analysis?

Yes

### W7.3b

#### (W7.3b) What water-related outcomes were identified from the use of climate-related scenario analysis, and what was your organization's response?

	Climate-related scenarios and models applied	Description of possible water-related outcomes	Company response to possible water-related outcomes
Row 1	RCP 2.6 Other, please specify (RCPs 4.5; 6.0; 8.5 )	The result of Strategic R&D Project 010/2008 "Effect of Climate Change on Electricity Generation" indicates an increase in air temperature in all regions of Brazil and a reduction in rainfall, mainly in the Amazon and Northeast Region and an increase in the South Region. For hydrology simulation, the MGB-IPH distributed hydrological model was used, developed to represent the processes of rain turning into runoff in large-scale watersheds. Two generating centers were considered: Existing Generating Center (PGE), which are the existing plants, and Future Generating Center (PGF), the set of plants expected to start operating in the year 2030. The calculation of assured energy (EASS) was made for the 2040, 2070 and 2100 timeframes. Future 01 (2011-2040), Future 02 (2041-2070), Future 03 (2071-2099). Another project developed by Cemig was R&D GT 0552 - Evaporation of the Funil hydroelectric plant reservoir: Water Footprint Characterization. Three Hydro Power Plants (HPPs) installed in cascade were evaluated and the following impacts were considered: reduction/increase in energy production potential, impact on the water footprint, possible interruptions in the production of electricity due to low water availability. Climate change impacts on runoff simulation considered scenarios RCP 4.5 and RCP 8.5, simulated by the Eta-HadGEM2-Es and Eta-MIROCC5 regional climate models.	The company has an area specialized in water resources management and a risk management area. They are responsible for identifying water risks, qualifying and quantifying impacts and defining actions to minimize risks. The following control measures were established: real-time monitoring of the amount of water available in rivers and plants using 262 telemetric stations belonging to the Telemetry and Hydrometeorological Monitoring System (STH); sediment monitoring at 86 stations located in its hydroelectric plants, where water samples are collected and analyzed by an accredited laboratory. In 2019, 2-Cemig operated a hydrometeorological network monitoring 767 variables; it is distributed along 240 hydrometeorological stations, including 187 for the monitoring of rains, 105 for watercourse levels and discharges, 57 for monitoring reservoir and river levels, and also 36 climatological stations that monitor temperature, air humidity, wind speed and direction, solar radiation and atmospheric pressure. These stations are placed in strategic locations in Minas Gerais, Goiás, Rio de Janeiro, Espírito Santo and Santa Catarina; their data are received in real time at the Company's headquarters in Belo Horizonte

### 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 electric energy generation industry pays a tax called Financial Compensation for the Use of Water Resources for Hydropower Generation (CFURH), established by Law 7,990 of 1989. Cemig, as the whole industry that uses water to produce hydropower, was charged for the use of the water resource defined and implemented for his hydropower plants even before the Watershed Committees for the rivers they are deployed at were established. Collection for hydropower plants with nameplate capacity over 30 MW was established and started for all state and federal watersheds in August 2000, with enactment of Law 9,984. It is also important to mention ours is the only sector subject to annual updating of amounts charged by the restatement and review of the Reference Updated Tariff (TAR). In 2018, the value was R\$74.03 and, for 2019, it was R\$77.38/MWh, a 4.53% variation against 2018.



## 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	The Sustainability Management is responsible for assessing, proposing and monitoring water use and consumption goals and other topics related to the water issue. The goals proposed by that area are presented to the Sustainability Committee, and validated by the Board. After approved by the Executive Board, they are entered into the Sustainability Plan. Monitoring is made via articulation with other areas of the company, mainly areas of operation and planning. The results are verified annually and, when necessary, the targets are reviewed and updated.

### W8.1a

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

**Target reference number**

Target 1

**Category of target**

Water consumption

**Level**

Company-wide

**Primary motivation**

Recommended sector best practice

**Description of target**

Reduce, by 2020, the Company's water consumption by 4%, based on consumption in 2011.

**Quantitative metric**

% reduction in total water consumption

**Baseline year**

2011

**Start year**

2012

**Target year**

2020

**% of target achieved**

100

**Please explain**

Cemig's water consumption occurs in the operational and administrative areas linked to hydroelectric generation, transmission, and electricity distribution. Since the goal was established in 2012, Cemig has been following a path of reducing consumption quite sharply. This reduction has been verified every year, and in 2019, a 90% reduction was achieved in relation to 2011. For the next year, the goal should be revised for a more challenging scenario for the company. This is the result of measures such as changing processes, managing consumption of facilities and acting more quickly in correcting leaks, retrofitting the Júlio Soares building - consisting in replacing water pipes and adapting the building infrastructure - in addition to implementing new equipment that reduces consumption.

**Target reference number**

Target 2

**Category of target**

Water use efficiency

**Level**

Business activity

**Primary motivation**

Increased revenue

**Description of target**

Reduce water consumption at the Thermal Power Plant (TPP) Igarapé: reduce water consumption in at least 5% by 2020, based on the consumption in 2007.

**Quantitative metric**

% reduction in total water discharge

**Baseline year**

2007

**Start year**

2013

**Target year**

2020

**% of target achieved**

100

**Please explain**

The search for a reduction in water consumption at the TPP Igarapé is directly related to the efficiency of that project. In recent years, Cemig carried out a series of reforms and process improvements at TPP Igarapé, identifying and fixing leaks and inappropriate water uses, which led to the achievement of the goal. In 2019, consumption at TPP Igarapé totaled 19,427m<sup>3</sup> against, 25,501 m<sup>3</sup> in 2018 and 42, 081m<sup>3</sup> consumed in the base year, 2007. For 2020, this goal will be discontinued, as TPP Igarapé was deactivated and is no longer part of Cemig's generating matrix.

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**Target reference number**

Target 3

**Category of target**

Water use efficiency

**Level**

Business

**Primary motivation**

Increased revenue

**Description of target**

Have, in 2019, an Efficiency Index in Energy Planning of Plants (IEPE) greater than 93%. The Plant Energy Planning Efficiency Index - IEPE measures the efficiency of the energy operation of Cemig's hydroelectric plants by comparing the verified energy generation with the optimal generation, taking into account the observed discharges, the maintenance of generating units, and compliance with operational restrictions.

**Quantitative metric**

Other, please specify (Efficiency % in water used for energy generation)

**Baseline year**

2019

**Start year**

2017

**Target year**

2019

**% of target achieved**

99.5

**Please explain**

In 2017, when the index was created, a Plant Energy Planning Efficiency Index - IEPE goal of over 92.5 was established, and the results determined confirmed the goal was achieved. Since then, the goal is updated annually, always with a view at a better indicator performance. For 2019, the goal was having a Plant Energy Planning Efficiency Index (IEPE) greater than 93%. The amount determined in 2019 was slightly below the goal, reaching 92.59%

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

Promotion of water data transparency

**Level**

Company-wide

**Motivation**

Brand value protection

**Description of goal**

Disclose information regarding management and use of water by Cemig. The company aims to participate in the main sustainability indexes and ratings and for that, it discloses its practices relating to the topic. Thus, it set reporting to CDP WATER as a goal and achieving assessment level A. This result is relevant for the company, as Cemig's generation is has 98% hydroelectric and, by standing out, it can bring in investors and increase its market value. For that goal, Cemig has engaged the water management team and established a partnership with a specialist consultancy on the subject to support the reporting process to CDP. In addition, the company has shown evolution in its practices and achieving level A consolidates the result of that effort.

**Baseline year**

2014

**Start year**

2016

**End year**

2020

## Progress

Cemig answered the CDP WATER questionnaire for two years as an exercise, no submission. From 2016, we started submitting the questionnaire and, in 2017 and 2018 we were included in A- category; in 2019, we got the A aware, the best result in the CDP assessment criteria.

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### Goal

Engaging with local community

### Level

Site/facility

### Motivation

Risk mitigation

### Description of goal

Pursuant to Law No. 12,344/2010 and Resolution 696 of the Brazilian Electricity Regulatory Agency - Aneel, every business enterprise - meaning a private or governmental player with legal interest on the lands the dam and reservoir are located in or that exploits the dam for their own benefit or that of the community - shall draw up an Emergency Action Plan - PAE. One of the Plan assumptions is that one of the planning stages must approach the engagement with stakeholders; in the case of Cemig, this means the communities in the whole coverage area of its dams. Thus, Cemig has as a goal holding 24 External PAEs in some 45 counties. This indicator is relevant, as the document focuses on presenting the risk of flooding caused by normal floods and possible dam breach events. The objective is to build a culture of readiness for flood situations in the communities established along the rivers where Cemig's plants are located. In 2019, there were Work Meetings of "Preparation for PAE", continuing the activities started in 2018. With the eight meetings that took place in 2019, there were a total of 21 work meetings, covering 9 plants and 24 municipalities.

### Baseline year

2015

### Start year

2016

### End year

2020

### Progress

In 2019, Cemig officially delivered the Emergency Action Plans for the 34 dams within the legal deadline set by the supervisory body. Cemig prepared specific External PAEs for the 34 dams, as determined in a Normative Resolution. The dams run by Cemig impact the life dynamics of 85 different municipalities, and in some cases, the same municipality is included in two PAEs, since there are two dams operating in its territory. In 2019, 8 meetings were held, attended by 20 of the 38 municipalities of interest invited, where the official presentations of the External PAEs for 11 dams were held. At those meetings, the studies of Propagation of Flood-Inundation Areas for exceptional Dam Breach and Flood Season scenarios were discussed, with indications for determining Meeting Points and Escape Routes, etc.

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### Goal

Watershed remediation and habitat restoration, ecosystem preservation

### Level

Business

### Motivation

Reduced environmental impact

### Description of goal

Carry out the Intelligent Monitoring of Water Quality in Hydroelectric Reservoirs Through the Development of a Photogrammetric Algorithm R&D project, aiming at using satellite images to monitor water quality, without going into the field. It is proposed to increase the availability and accuracy of the data obtained with environmental monitoring of water quality and surrounding reservoirs by the development of algorithms for processing high resolution images, obtained by unmanned aerial vehicles (UAVs), together with satellite images and data traditionally obtained in the field. Três Marias Reservoir-MG is expected as a case study. This project is relevant, as 98% of the company generation is hydroelectric and the monitoring of water quality is an important variable to ensure operation and avoid environmental sanctions.

### Baseline year

2018

### Start year

2018

### End year

2022

### Progress

i) Algorithms to assess water quality and reservoir surroundings in the study area, from multispectral images; ii) Methodologies for calibration and validation of algorithms for analyzing water quality and the reservoir environment from multispectral images; iii) Optimization of the monitoring network, considering location of the stations, frequency of monitoring, and the most important parameters for the characterization of water quality in the study region, using multivariate statistical analyzes; iv) Application and validation of statistical tools for integrating historical series for monitoring water quality in order to meet the various purposes of the network, such as analyzing the trend water quality evolution, identifying critical pollution areas, and verifying management effectiveness of water quality recovery actions; v) Development of protocols for automation and optimization of water quality monitoring processes, combined with traditional methods.

## 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	Cemig's profile was verified.	ISAE 3000	Bureau Veritas Certification Brazil was hired by Companhia Energética de Minas Gerais S.A. (CEMIG) to carry out an independent verification of its 2019 Sustainability Report. The scope of that verification adopted standards and principles of the Global Reporting Initiative for Sustainability Reports, including the Supplement for the electricity sector and refers to account rendering of the period from January 01 to December 31, 2019. The verification covered: 1. Interviews with those responsible for material themes and the Report contents; 2. Analysis of documentary evidence provided by CEMIG for the period covered by the Report (2019); 3. Assessment of the systems used to compile data; 4. Analysis of activities of engagement with stakeholders carried out by CEMIG; 5. Assessment of the methodology used to determine the material topics forming the basis of the Report based on the sustainability context and scope of published information. The verification level adopted was Limited, according to requirements of ISAE 30002 standard. That verification excluded: • Out-of-reported-period activities; • Positioning statements (statements of opinions, beliefs, objectives, or future interventions) by CEMIG; • Preciseness of economic-financial data contained in that Report, taken from financial statements and verified by independent auditors; • That verification was subject to these limitations: • Data Exactitude and Reliability were verified through sampling, solely in light of information and data related to material themes presented in the Report; • Economic information presented in the Report were verified specifically against the GRI Balance principle; • Although energy and emission indicators have been verified, we did not run a full analysis of the Green House Gas (GHG) emission inventory.
W1 Current state	Data for industrial water, consumption water, and effluents were verified.	ISAE 3000	Bureau Veritas Certification Brazil was hired by Companhia Energética de Minas Gerais S.A. (CEMIG) to carry out an independent verification of its 2019 Sustainability Report. The scope of that verification adopted standards and principles of the Global Reporting Initiative for Sustainability Reports, including the Supplement for the electricity sector and refers to account rendering of the period from January 01 to December 31, 2019. The verification covered: 1. Interviews with those responsible for material themes and the Report contents; 2. Analysis of documentary evidence provided by CEMIG for the period covered by the Report (2019); 3. Assessment of the systems used to compile data; 4. Analysis of activities of engagement with stakeholders carried out by CEMIG; 5. Assessment of the methodology used to determine the material topics forming the basis of the Report based on the sustainability context and scope of published information. The verification level adopted was Limited, according to requirements of ISAE 30002 standard. That verification excluded: • Out-of-reported-period activities; • Positioning statements (statements of opinions, beliefs, objectives, or future interventions) by CEMIG; • Preciseness of economic-financial data contained in that Report, taken from financial statements and verified by independent auditors; • That verification was subject to these limitations: • Data Exactitude and Reliability were verified through sampling, solely in light of information and data related to material themes presented in the Report; • Economic information presented in the Report were verified specifically against the GRI Balance principle; • Although energy and emission indicators have been verified, we did not run a full analysis of the Green House Gas (GHG) emission inventory.
W3 Procedures	Information in the item "Water Resources" were verified within the verification scope of the 2019 Sustainability Annual Report	AA1000AS	Bureau Veritas Certification Brazil was hired by Companhia Energética de Minas Gerais S.A. (CEMIG) to carry out an independent verification of its 2019 Sustainability Report. The scope of that verification adopted standards and principles of the Global Reporting Initiative for Sustainability Reports, including the Supplement for the electricity sector and refers to account rendering of the period from January 01 to December 31, 2019. The verification covered: 1. Interviews with those responsible for material themes and the Report contents; 2. Analysis of documentary evidence provided by CEMIG for the period covered by the Report (2019); 3. Assessment of the systems used to compile data; 4. Analysis of activities of engagement with stakeholders carried out by CEMIG; 5. Assessment of the methodology used to determine the material topics forming the basis of the Report based on the sustainability context and scope of published information. The verification level adopted was Limited, according to requirements of ISAE 30002 standard. That verification excluded: • Out-of-reported-period activities; • Positioning statements (statements of opinions, beliefs, objectives, or future interventions) by CEMIG; • Preciseness of economic-financial data contained in that Report, taken from financial statements and verified by independent auditors; • That verification was subject to these limitations: • Data Exactitude and Reliability were verified through sampling, solely in light of information and data related to material themes presented in the Report; • Economic information presented in the Report were verified specifically against the GRI Balance principle; • Although energy and emission indicators have been verified, we did not run a full analysis of the Green House Gas (GHG) emission inventory.
W4 Risks and opportunities	Information in the item "Risk Management" were verified within the verification scope of the 2019 Sustainability Annual Report	AA1000AS	Bureau Veritas Certification Brazil was hired by Companhia Energética de Minas Gerais S.A. (CEMIG) to carry out an independent verification of its 2019 Sustainability Report. The scope of that verification adopted standards and principles of the Global Reporting Initiative for Sustainability Reports, including the Supplement for the electricity sector and refers to account rendering of the period from January 01 to December 31, 2019. The verification covered: 1. Interviews with those responsible for material themes and the Report contents; 2. Analysis of documentary evidence provided by CEMIG for the period covered by the Report (2019); 3. Assessment of the systems used to compile data; 4. Analysis of activities of engagement with stakeholders carried out by CEMIG; 5. Assessment of the methodology used to determine the material topics forming the basis of the Report based on the sustainability context and scope of published information. The verification level adopted was Limited, according to requirements of ISAE 30002 standard. That verification excluded: • Out-of-reported-period activities; • Positioning statements (statements of opinions, beliefs, objectives, or future interventions) by CEMIG; • Preciseness of economic-financial data contained in that Report, taken from financial statements and verified by independent auditors; • That verification was subject to these limitations: • Data Exactitude and Reliability were verified through sampling, solely in light of information and data related to material themes presented in the Report; • Economic information presented in the Report were verified specifically against the GRI Balance principle; • Although energy and emission indicators have been verified, we did not run a full analysis of the Green House Gas (GHG) emission inventory.
W6 Governance	Information in the item "Water Resources" were verified within the verification scope of the 2019 Sustainability Annual Report	AA1000AS	Bureau Veritas Certification Brazil was hired by Companhia Energética de Minas Gerais S.A. (CEMIG) to carry out an independent verification of its 2019 Sustainability Report. The scope of that verification adopted standards and principles of the Global Reporting Initiative for Sustainability Reports, including the Supplement for the electricity sector and refers to account rendering of the period from January 01 to December 31, 2019. The verification covered: 1. Interviews with those responsible for material themes and the Report contents; 2. Analysis of documentary evidence provided by CEMIG for the period covered by the Report (2019); 3. Assessment of the systems used to compile data; 4. Analysis of activities of engagement with stakeholders carried out by CEMIG; 5. Assessment of the methodology used to determine the material topics forming the basis of the Report based on the sustainability context and scope of published information. The verification level adopted was Limited, according to requirements of ISAE 30002 standard. That verification excluded: • Out-of-reported-period activities; • Positioning statements (statements of opinions, beliefs, objectives, or future interventions) by CEMIG; • Preciseness of economic-financial data contained in that Report, taken from financial statements and verified by independent auditors; • That verification was subject to these limitations: • Data Exactitude and Reliability were verified through sampling, solely in light of information and data related to material themes presented in the Report; • Economic information presented in the Report were verified specifically against the GRI Balance principle; • Although energy and emission indicators have been verified, we did not run a full analysis of the Green House Gas (GHG) emission inventory.

Disclosure module	Data verified	Verification standard	Please explain
W7 Strategy	Information in the item "Strategy" were verified within the verification scope of the 2019 Sustainability Annual Report	AA1000AS	Bureau Veritas Certification Brazil was hired by Companhia Energética de Minas Gerais S.A. (CEMIG) to carry out an independent verification of its 2019 Sustainability Report. The scope of that verification adopted standards and principles of the Global Reporting Initiative for Sustainability Reports, including the Supplement for the electricity sector and refers to account rendering of the period from January 01 to December 31, 2019. The verification covered: 1. Interviews with those responsible for material themes and the Report contents; 2. Analysis of documentary evidence provided by CEMIG for the period covered by the Report (2019); 3. Assessment of the systems used to compile data; 4. Analysis of activities of engagement with stakeholders carried out by CEMIG; 5. Assessment of the methodology used to determine the material topics forming the basis of the Report based on the sustainability context and scope of published information. The verification level adopted was Limited, according to requirements of ISAE 30002 standard. That verification excluded: • Out-of-reported-period activities; • Positioning statements (statements of opinions, beliefs, objectives, or future interventions) by CEMIG; • Preciseness of economic-financial data contained in that Report, taken from financial statements and verified by independent auditors; • That verification was subject to these limitations: • Data Exactitude and Reliability were verified through sampling, solely in light of information and data related to material themes presented in the Report; • Economic information presented in the Report were verified specifically against the GRI Balance principle; • Although energy and emission indicators have been verified, we did not run a full analysis of the Green House Gas (GHG) emission inventory.
W8 Targets	Information in the item "Strategy" were verified within the verification scope of the 2019 Sustainability Annual Report	AA1000AS	Bureau Veritas Certification Brazil was hired by Companhia Energética de Minas Gerais S.A. (CEMIG) to carry out an independent verification of its 2019 Sustainability Report. The scope of that verification adopted standards and principles of the Global Reporting Initiative for Sustainability Reports, including the Supplement for the electricity sector and refers to account rendering of the period from January 01 to December 31, 2019. The verification covered: 1. Interviews with those responsible for material themes and the Report contents; 2. Analysis of documentary evidence provided by CEMIG for the period covered by the Report (2019); 3. Assessment of the systems used to compile data; 4. Analysis of activities of engagement with stakeholders carried out by CEMIG; 5. Assessment of the methodology used to determine the material topics forming the basis of the Report based on the sustainability context and scope of published information. The verification level adopted was Limited, according to requirements of ISAE 30002 standard. That verification excluded: • Out-of-reported-period activities; • Positioning statements (statements of opinions, beliefs, objectives, or future interventions) by CEMIG; • Preciseness of economic-financial data contained in that Report, taken from financial statements and verified by independent auditors; • That verification was subject to these limitations: • Data Exactitude and Reliability were verified through sampling, solely in light of information and data related to material themes presented in the Report; • Economic information presented in the Report were verified specifically against the GRI Balance principle; • Although energy and emission indicators have been verified, we did not run a full analysis of the Green House Gas (GHG) emission inventory.

## W10. Sign off

### W-F I

**(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 Cemig's business depends on, since 98% of the electricity generated in 2019 came from hydroelectric plants and, from 2020 on, it will be 100%, thanks to the deactivation of the TPP Igarapé. The company acknowledges its role in conserving this resource and the potential impacts of its activities on water availability.

Given that, Cemig takes a series of actions that enable the management and prevention of possible impacts related to water availability on business, and invests in practices that place it in a situation of greater security given the several possible scenarios, using modern techniques and equipment, such as the Storm Location System, a Telemetry, and Hydrometeorological Monitoring System, mathematical models of hydrological simulation and weather and climate forecasting.

Currently, Cemig operates a hydrometeorological network that monitors 767 variables. The network is distributed along 240 hydrometeorological stations, including 187 for the monitoring of rains, 105 for watercourse levels and discharges, 57 for monitoring reservoir and river levels, and also 36 climatological stations that monitor temperature, air humidity, wind speed and direction, solar radiation and atmospheric pressure. These stations are placed in strategic locations in the states of Minas Gerais, Goiás, Rio de Janeiro, Espírito Santo and Santa Catarina; their data are received in real time at the Company's headquarters in Belo Horizonte

The water quality of Cemig's reservoirs is regularly monitored along a network that includes 47 reservoirs and more than 200 physical, chemical, and biological data collection stations on the major watersheds of Minas Gerais. These collections generate a volume of information that is analyzed and stored in an extensive database called Siságua. Siságua allows for analysis of time and space development of reservoirs and their surroundings, and its features allow for a differentiated management structure. By producing fast, accurate and useful information, the system supports a more efficient management of water reservoirs.

In order to move forward, fill gaps, expand the approaches adopted in the assessment and monitoring of streams and bring innovation to technologies to support the management of water resources, Cemig's Water Quality Center carried out several Research and Development (R&D) projects throughout 2019.

Finally, due to its business, Cemig has an active participation in decision-making panels and forums dedicated to dealing with issues related to water resources. The Company is also present in the technical discussions of the main collegiate bodies for drafting rules and establishing guidelines, such as the National Water Resources Council (CNRH) (via ABRAGE), the State Water Resources Council (CERH), the Federal and State Watershed Committees, Technical Councils and working groups, with an emphasis on those dealing with the preparation of water resource master plans, the regulation of the Grant and the Charge for the Use of Water Resources. Cemig represents the users of water resources for hydroelectric power generation in the State Minas Gerais State Water Resources Council (CERH/MG), 4 watershed committees under the Federal Government regulation, and 20 watershed committees in rivers under state regulation.

## 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	Chief Executive Officer	Chief Executive Officer (CEO)

## 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

SW0.1

(SW0.1) What is your organization's annual revenue for the reporting period?

	Annual revenue
Row 1	25390306

SW0.2

(SW0.2) Do you have an ISIN for your organization that you are willing to share with CDP?

Yes

SW0.2a

(SW0.2a) Please share your ISIN in the table below.

	ISIN country code	ISIN numeric identifier (including single check digit)
Row 1	BR	CMIGACNOR6

SW1.1

(SW1.1) Could any of your facilities reported in W5.1 have an impact on a requesting CDP supply chain member?

No, CDP supply chain members do not buy goods or services from facilities listed in W5.1

SW1.2

(SW1.2) Are you able to provide geolocation data for your facilities?

	Are you able to provide geolocation data for your facilities?	Comment
Row 1	Yes, for all facilities	

SW1.2a

(SW1.2a) Please provide all available geolocation data for your facilities.

Identifier	Latitude	Longitude	Comment
Edifício Sede (Júlio Soares)	19	43	Nesse Edifício ocorre o maior consumo administrativo de água. O consumo de água em 2019 foi de 42.850,00 m3, sendo uma média de consumo por empregado de 26,95 (m3/empregado). Informações adicionais sobre consumo de água no capítulo: 14.7 CONSUMO DE ÁGUA, páginas 212 a 214 do Relatório Anual e de Sustentabilidade 2019, disponível no link: <a href="http://www.cemig.com.br/RAS/relatorio2019/Paginas/relatorio2019.pdf">http://www.cemig.com.br/RAS/relatorio2019/Paginas/relatorio2019.pdf</a>

SW2.1

(SW2.1) Please propose any mutually beneficial water-related projects you could collaborate on with specific CDP supply chain members.

**Requesting member**

Caixa Econômica Federal

**Category of project**

Promote river basin collective action

**Type of project**

Invite customer to collaborate with other users in their river basins to reduce impact

**Motivation**

A Cemig participa de vários Comitês de Bacias no Estado de Minas Gerais e promove medidas preservação desse recurso e matêm um diálogo permanente com as comunidades afetadas. Através do Programa Proximidade a empresa leva informações sobre Plano de Atendimento de Emergências e assuntos específicos relacionados a gestão das hidrelétricas. A parceria com a CAIXA seria de grande ajuda para fomentar as ações em prol da conservação dos recursos hídricos.

**Estimated timeframe for achieving project**

2 to 3 years

**Details of project**

Participar de projetos de conservação de matas ciliares e preservação de nascentes no Estado de MG.

**Projected outcome**

Promoção da conservação dos recursos hídricos, melhoria do relacionamento com as comunidades afetadas e preservação da biodiversidade.

**Requesting member**

MRV Engenharia e Participações

**Category of project**

Promote river basin collective action

**Type of project**

Invite customer to collaborate with other users in their river basins to reduce impact

**Motivation**

A Cemig participa de vários Comitês de Bacias no Estado de Minas Gerais e promove medidas preservação desse recurso e mantém um diálogo permanente com as comunidades afetadas. Através do Programa Proximidade a empresa leva informações sobre Plano de Atendimento de Emergências e assuntos específicos relacionados a gestão das hidrelétricas. A parceria com a MRV seria de grande ajuda para fomentar as ações em prol da conservação dos recursos hídricos.

**Estimated timeframe for achieving project**

2 to 3 years

**Details of project**

Participar de projetos de conservação de matas ciliares e preservação de nascentes no Estado de MG.

**Projected outcome**

Promoção da conservação dos recursos hídricos, melhoria do relacionamento com as comunidades afetadas e preservação da biodiversidade

**SW2.2****(SW2.2) Have any water projects been implemented due to CDP supply chain member engagement?**

No

**SW3.1****(SW3.1) Provide any available water intensity values for your organization's products or services.****Product name**

Igarapé Thermal Power Plant

**Water intensity value**

0.43

**Numerator: Water aspect**

Water consumed

**Denominator**

Generated energy (MWh)

**Comment**

A Usina Termelétrica de Igarapé (capacidade instalada de 131 MW) opera em situações de contingência, ou seja, quando os níveis dos reservatórios estão baixos . A Cemig atua nos negócios geração, transmissão e distribuição, sendo que nesses dois últimos não utilizam água no processo produtivo. Em relação ao negócio geração, o parque gerador da Cemig é predominantemente composto por usinas hidrelétricas, possuindo apenas uma usina térmica que faz uso consuntivo da água, mesmo assim sendo despachada apenas para atender a contingências do setor elétrico. Assim, os cálculos são relativos à sua usina térmica. Espera-se que a intensidade hídrica da termelétrica permaneça constante, visto que não há projetos de tornar a usina mais eficiente. Assim, a variação do indicador é causada pela extensão de operação da usina termelétrica durante o ano ou por eventuais vazamentos. Essa usina foi desativada no final de 2019, e a partir de 2020 a empresa vai adotar outra método de intensidade.

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

English

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

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

**Please confirm below**

I have read and accept the applicable Terms