



**ANNUAL AND  
SUSTAINABILITY  
REPORT  
2019**

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# ABOUT THIS REPORT



**[102-1]** Cemig, Companhia Energética de Minas Gerais (Minas Gerais Power Utility Company) presents here its Annual Sustainability Report - RAS 2019, which includes the strategies and actions adopted by the Company, as well as its performance regarding environmental, economic and social aspects in 2019.

**[102-50; 102-52]** RAS is a document published by Cemig on an annual basis, containing information regarding the period from January to December. The information contained therein covers the entire corporation, and this version is for the year of 2019.

The main objective of RAS is to contribute to foster Cemig's transparent dialogue with its stakeholders by providing relevant information about the Company's activities and performance in environmental, economic, social, and governance aspects. The process of putting the RAS together allows Cemig's several areas to gather information and data that demonstrate the evolution of administrative aspects, as well as to analyze the facts that influence the Company's performance in the period.

**[102-45]; [102-56]** The accounting data presented in this report refer to the group of companies where the Cemig holding has operational control; the exceptions to that are mentioned throughout the report. As companies under this umbrella can be found in the Cemig Group's organizational chart presented in the chapter titled 'Cemig', 'Main Equity Interests' section. These data were consolidated based on criteria laid down in Brazilian law and previously audited by Ernst & Young Auditores Independentes S.A. The Company's Financial Statements are presented according to the International Financial Reporting Standards - IFR in thousands of R\$ (except where another currency is indicated), available on Cemig's website. <sup>2</sup>

Regarding non-accounting information, RAS 2019 may cover other subsidiaries of the Cemig Group; there will be an explicit statement in the text in cases where this limitation applies. The terms "Cemig", "Business" or "Company" refer to the Cemig holding and its consolidated subsidiaries (Cemig D and Cemig GT). The name "Parent Company" is used to refer solely to the Cemig holding as an individual company, and does not include its subsidiaries.

**1** - For further details, see the explanatory notes to the Standardized Financial Statements - DFP, on Cemig's website. Available at: <http://ri.cemig.com.br/divulgacao-e-resultados/central-de-resultados#2019>.  
**2** - The financial information audit report can be viewed at the end of the document by following the link [http://ri.cemig.com.br/ptb/18677/2453\\_746939.pdf](http://ri.cemig.com.br/ptb/18677/2453_746939.pdf).

**[102-51; 102-54]** RAS 2019, like the previous report, was prepared following the GRI Standards, Core option, and meets the following assumptions:

- Full compliance with the GRI Standards;
- Assurance of legacy and comparability with data and information presented in previous reports<sup>3</sup>

In order to prepare RAS 2019, a Company took inspiration from the value-generation approach proposed by the integrated report guidelines of the International Integrated Reporting Council - IIRC, including the value generation diagram, which displays the capitals taken into account and the impacts produced by its performance. It also provides information regarding integration between the Company's programs and projects, as well as their contributions to the UN's Sustainable Development Goals - SDGs.

**[102-56]** As a guarantee of the quality and content of the information available here, Cemig's executive board requested an independent outside verification of all the content in RAS 2019. The verification process of the report was carried out by Bureau Veritas according to the following methods: Verification of the Application of the Principles for Global Reporting Initiative - GRI Standards and the Electric Utilities Sector Supplement <sup>4</sup>. This outside verification included a selection of the content presented, a review of priority material topics for Cemig, as well as an assessment of the accuracy and veracity of the information included in RAS 2019. The result of this effort is in the Assurance Statement issued by Bureau Veritas, attached to the end of this report.

Also regarding the assurance of the data included in this report, all pieces of information regarding greenhouse gas (GHG) emissions and their sources and precursors were also audited by Bureau Veritas within the scope of Cemig 2019 GHG Emissions Inventory. <sup>5</sup>

**[102-48]** This report contains information and data from previous reports that may have been revised or changed. The change indication includes the reason for reframing the information (change due to alterations in the period or base year or in the measurement method, resulting from changes in the Company due to mergers and/or acquisitions).

**3** - For this reason, information from the GRI Sector Supplement for the Power Sector (G3) is also included.

**4** - This report used as a reference the indicators in the GRI G3 Electric Utilities Sector Supplement (EU-G3), the latest version made available by GRI in Portuguese. The GRI Standard does not yet include updated Sector Supplements. However, Cemig chose to keep a report of this information, as it is relevant to the sector and its stakeholders. This information is accompanied by a footnote referring to EU-G3 indicators.

**5** - The audit report of the Inventory information can be viewed by following the link [http://www.cemig.com.br/pt-br/A\\_Cemig\\_e\\_o\\_Futuro/sustentabilidade/nossos\\_programas/mudancas\\_climaticas/Paginas/Inventarios-de-emissoes.aspx](http://www.cemig.com.br/pt-br/A_Cemig_e_o_Futuro/sustentabilidade/nossos_programas/mudancas_climaticas/Paginas/Inventarios-de-emissoes.aspx).

The GRI Contents Index is at the end of the Report; it includes location and content markers and references to GRI topics.

**[102-53]** Questions about this report can be sent by e-mail to the Corporate Sustainability Oversight Department ([sustentabilidade@cemig.com.br](mailto:sustentabilidade@cemig.com.br)) or the Investor Relations Oversight Department ([ri@Cemig.com.br](mailto:ri@Cemig.com.br)).

## COVID-19 PANDEMIC

Cemig is monitoring the potential impacts of COVID-19 on its business and the market it works in; but it is not yet possible to estimate the pandemic effects on the Company and its stakeholders.

Since the second half of March, when coronavirus started to spread in Brazil, Cemig has been directing its efforts to ensure continuous power supply safely and responsibly to all its 8.7 million customers.

In order to contribute to containing the pandemic, Cemig chose to follow the guidelines from the World Health Organization - WHO and the Ministry of Health of Brazil in what is appropriate to its activities, as well as those from the competent state authorities, so as to help keeping the virus from spreading. Measures such as restrictions on national and international traveling, suspension of technical visits and events at Cemig's facilities, the use of means of communication and home office were some of the Company's immediate actions. To support society to face challenging scenarios to combat the pandemic, Cemig has implemented actions to make the flow of payments for power bills more flexible for customers benefiting from the social tariff (for example, low-income citizens, public hospitals, small businesses, and others). Since early April 2020, Cemig has been implementing the "We are not alone" campaign, whose objective is to ensure funds to allow for the donation of respirators and medical equipment to the public hospitals network in the state of Minas Gerais. These funds originate from a joint action with customers, and the Company immediately

guaranteed the allocation of R\$ 5 million for these acquisitions. It is estimated that the total amount may reach 40 million (for additional information about the campaign, go to <https://nosnaoestamossozinhos.cemig.com.br/>)

Throughout 2020, the Company expects to be able to monitor the effects of these actions, as well as to have elements to design appropriate risk management measures to contain the effects of this pandemic on the company's operations, as well as on the people who make up its workforce, suppliers, customers and, when possible and appropriate, on the communities it interfaces with.

# 1.1

## MESSAGE FROM THE BOARD

**[102-14]** When we look back to 2019, we are pleased to note the great progress we have made along the several aspects. We have shown growing results, when compared to previous years, whether financial results or operational efficiency, or the focus on serving our customers.

In this renewed environment of the Company, we reviewed Cemig's strategic planning with the participation of Senior Management and the management body, analyzing the major global trends in the energy sector and Cemig's strategic positioning in this environment, with its challenges and opportunities.

Among the strategic guidelines laid down, we highlight the commitment to a significant investment in our core business, obtaining adequate financial leveraging and ensuring operational efficiency, thus guaranteeing excellence in serving our customers and meeting regulatory requirements.

For us to be successful, the engagement, commitment, and talent of our employees are essential, and we have laid down specific goals and indicators so that everyone can follow the strategic map and understand their individual contributions to the deployment of the strategy.

Cemig's results, which were already following an upward curve, displayed significant growth in 2019. Our net income was R\$ 3,127 million, a significant increase of 84% over the previous year, when it was R\$ 1,700 million. Likewise, our cash generation, as measured by EBITDA, grew 15.7%, from R\$ 3,781 million in 2018 to R\$ 4,376 million in 2019.

Another issue worth mentioning is the significant decrease in our indebtedness. In 2017, we had a financial leverage, measured by the net debt/EBITDA ratio of 3.52; this was reduced to 3.08 by the end of 2019, with prospects for a further reduction in 2020. Cemig, benefiting from the reopening of the capital market, focused its efforts on managing debt, thus reducing cost. The decrease in the size and cost of the debt associated with the extension of the term matches the objective of obtaining higher credit quality, resulting in better rating assessments and, consequently, a reduction in Cemig's capital cost.

In 2019, one of the factors that most contributed to our success was Cemig D's new level of efficiency and profitability, which came from a history of losses in 2016 and 2017. Thanks to disciplinary actions in cost management, greater operational efficiency, and prudent investments approved in the last tariff review, we obtained a profit of R\$ 1,644 million and an EBITDA of R\$ 2,200 million in 2019, an increase of 207.4% and 43.4%, respectively, against the previous year. Among the cost reduction measures, the organizational restructuring that took place in 2019 stands out. It involved a 25% reduction in managerial positions and the implementation of the Voluntary Severance Program, which 458 employees participated in.

Among the measures that have been adopted to increase revenue, the most noteworthy are those related to the reduction of delinquency and non-technical losses, through a significant increase in the number of inspections to consumer units, the renegotiation of overdue debts, and the improvement in the relationship with our customers. We expect significant benefits and results from those actions in 2020, with the confirmation of Cemig D's alignment with regulatory coverage.

It is important to mention that we never forget the quality of service to our customers. We invested approximately R\$ 900 million in 2019, and investments are expected to almost double, reaching R\$ 1.7 billion, in 2020. These significant investments will cause a growth in the distributor utility's revenue, gains in customer satisfaction, and a reduction in expenses with operation and maintenance of assets. These will ensure we will be able to keep providing quality and efficient service to the population of Minas Gerais along our concession area.

One of the major news at Cemig GT was our return to public auctions for new investments in transmission. Although we did not win any of the lots tendered, participation in the auctions amounts to a new situation for the Company, which is now in proper and competitive financial conditions to increase its transmission investment program in the coming years, either through reinforcements in its concession area approved by the Regulatory Body, or by winning the next auctions.

A significant event in 2019 for the consolidated result was the final judgment in favor of Cemig in a lawsuit where we challenged the collection of ICMS tax in the Pasep/Cofins tax base, amounting to tax credits close to R\$ 7 billion. Of this amount, R\$ 3 billion is owned by Cemig that, after taxes, had a significant effect on our net income, close to R\$ 2 billion; upon receipt, this amount will contribute even further to a speedier reduction of our debt ratios. It should be noted that, in February 2020, the Company managed to raise R\$ 1.4 billion in recorded deposits in court, which contributed to the improvement of the Company's liquidity.

Cemig D consumers were also benefited. Power bills were already reduced by an average of 1% as of June 2019, due to this new criterion for measuring Pasep/Cofins tax brackets, thus effectively contributing to the tariff modality. In addition to that, as from the receipt of tax credits and the definition of refunding criteria by Aneel, we will begin the process of returning part of the credits to consumers, in amounts surpassing R\$ 4 billion.

In line with our discourse of disposal of interests that are not included in the core of our strategic planning, we reduced our share in Light from

49% to 22%; this amounted to an inflow of R\$ 625 million in our cash, which funds were fully invested in Cemig's businesses.

We created Cemig SIM, the result of a synergy between Cemig Geração Distribuidora and Efficientia. The latter is a company that will provide 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, with investments in 2019 close to R\$ 300 million.

We are acknowledged as a sustainable company, concerned with the impact of our actions on the environment and society. Our only fuel-oil-powered plant is being decommissioned, and we will start generating energy from 100% renewable sources. Also, we are the company that most invests in culture in the State. We were once again included in the BM&F/Bovespa Corporate Sustainability Index and the Dow Jones Sustainability Index, which we have been included in since 1999. We are signatories to the United Nations Global Compact and have a prominent position in several other national and international sustainability ratings, which shows the recognition awarded to our actions in that area.

Concerning the external environment, after a period of recession and downside, the Brazilian macroeconomic scenario begins to show signs of recovery. The country is expected to resume growth in 2020 at levels higher than those noticed in recent years, which will certainly have positive impacts on our results.

In conclusion, we have good reason to be optimistic about the future. In this scenario, Cemig's Management, its managerial body and high-quality group of employees are committed and motivated to ensure the progress and sustainability of our operations, guaranteeing an adequate return to shareholders and meeting the expectations of other stakeholders.

We are grateful for the commitment and talent of our employees, shareholders and other stakeholders in the converging effort to maintain Cemig's recognition as a company of relevance and prominence in the Brazilian electricity sector.

## 1.2

# MATERIALITY

**[102-46; 102-49]** The process of defining the structure and content of RAS 2019 was carried out through a structured exercise. This exercise aimed at identifying and prioritizing topics (and/or subjects) that are significant for our stakeholders and the Company.

By surveying multiple sources and consulting with stakeholders (Cemig leaders and managers), it was possible to identify and evaluate topics relevant enough to make up the report of the Company's contribution to sustainable development.

By applying variations of the same method focused on consulting significant outside sources<sup>6</sup> and internal sources<sup>7</sup>, environmental, economic, social, and governance topics that reflect the impacts and topics of interest for the decision-making processes of stakeholder categories were selected and prioritized.

Cemig believes that the reviews aimed at adjusting the set of metrics commonly used are appropriate, as these do not substantially alter the metrics that have been monitored for some years. Maintaining year-to-year comparability is important for performance management, and for stakeholders to make assessments regarding Cemig.

**6** - Such as prominent benchmarks in the context of Sustainable Development, such as the Sustainability Accounting Standards Board - SASB and the Dow Jones Sustainability Index - DJSI in order to identify the most relevant topics/impacts for companies in the electricity utilities sector.

**7** - Company's documents, media clipping prepared by Cemig, and consultations of relationship managers with internal and external stakeholders.

In this way, the company has decided to perform materiality calibration but has not so far carried out a thorough review process: it believes those metrics are appropriate, since, in theory, material topics should not change drastically from year to year (despite the current speed of changes in the economic and social scenarios, as well as external influences, such as regulation and markets).

In identifying topics and subjects of interest and those related to impacts, consultations were not carried out with the other categories of stakeholders besides Cemig's managers and leaders. For the RAS 2019 Materiality exercise, successive steps were defined and executed in order to ascertain:

- Stakeholders' outlook (direct and indirect consultations with certain categories of stakeholders);
- Experts' outlooks (review of the sustainability context);
- Materiality outlook (selection and prioritizing of topics).

Prioritizing of the topics identified as material was carried out by applying the tests in the Materiality Principle of the GRI Standard. Grouping up into GRI and non-GRI topics was done in two phases: **(i)** the consulting firm applied the standards from the GRI 101 (2016) standard to group up the identified topics; **(ii)** the results were discussed with Cemig, which consolidated the review/grouping up of material topics.

Governance topics were not included in the prioritizing stage, as they are mandatory for reporting and are invariably a priority for the Company.

The entire process complied with the Principles for Defining Report Contents and it has been considered that all the requirements contained in the Materiality Principle and prescribed by the GRI Standards have been met.

**[102-40; 102-42]** Regarding engagement with

stakeholders, Cemig has an internal procedure<sup>8</sup> for identifying, selecting, and prioritizing stakeholders, called Stakeholder Mapping. This procedure describes the actions and methods used by the Company to identify Cemig's major stakeholders, based on the following criteria: **(i)** responsibility; **(ii)** influence, **(iii)** proximity, **(iv)** dependence, **(v)** representation, **(vi)** strategy statement and policies. Based on these criteria and the Communication Policy<sup>9</sup>, Cemig defined the following groups as stakeholders for its Sustainability Report:

- Government authorities;
- Shareholders and investors;
- Customers;
- Consumers;
- Communities in general (NGOs, the society, universities, etc.);
- Employees;
- Suppliers;
- The press.

8 - Cemig SE/AS - 0012/2010 Procedure.

9 - The Policy is available at: [https://www.Cemig.com.br/pt-br/A\\_Cemig\\_e\\_o\\_Futuro/sustentabilidade/nossos\\_programas/sociais/Documents/PoliticaComunicacao.pdf](https://www.Cemig.com.br/pt-br/A_Cemig_e_o_Futuro/sustentabilidade/nossos_programas/sociais/Documents/PoliticaComunicacao.pdf)

The external references that guided the identification of the most relevant topics/impacts for companies in the electricity utilities sector supported the consideration for the stakeholders whose relationship managers should be consulted. This served to determine the topics of interest and potential impacts of the following categories of stakeholders: in-house and outsourced workforce, critical suppliers, shareholders and investors, corporate customers, captive customers, communities potentially impacted by activity and operation.

CATEGORY OF THE STAKEHOLDER INCLUDED	Manner of consultation	Relationship Manager
Workforce	Indirect consultation with the person responsible for managing the relationship with the stakeholder category	People Hiring and Development Department, Labor Relations Department, Occupational Health and Safety Department, and Organization and Compensation Department
Suppliers	Indirect consultation with the person responsible for managing the relationship with the stakeholder category	Supply and Logistics Department; Supplier and Material Qualification Department
Investors	Indirect consultation with the person responsible for managing the relationship with the stakeholder category	Investor Relation Department
Customers	Indirect consultation with the person responsible for managing the relationship with the stakeholder category	Customer Relation Strategy and Control Department; High Voltage and Medium Size Customer Relation Department

**Table 1:** List of stakeholders consulted in 2019

Besides, the members of the Sustainability Committee were individually consulted using questionnaires, and also collectively, using a discussion on preliminary results during a meeting of that Committee. This consultation was preceded by an interview with the Head of Institutional Relations and Communication.

**[102-43]** Regarding the management of the relationship with stakeholders, Cemig has operated continuously throughout the years utilizing management departments and teams dedicated exclusively to answering the demands received. This practice supports the Company in keeping a relationship with its stakeholders and efforts to help them understand important matters related to its activities up to date.

The interactions with stakeholders follow provisions in Cemig's Communication Policy, which guides communication with the different categories of stakeholders in order to maintain and boost its brand credibility and support the addition of value in internal and external relationships.

Concerning the engagement process related to the sustainability report, and/or to the definition of material topics, Cemig defined a progressive approach, stated in its contract with a Consulting Firm that supports it in the process of preparing the RAS. This consultancy firm is expected to propose the methodology to be used in the engagement for the RAS process, and must follow the requirements of GRI ("GRI 100 Universal Standards"), and, in principle every 2 years, it must carry out an engagement exercise<sup>10</sup> to identify expectations, interests and needs of stakeholders, to keep the RAS aligned with them. The identification of material topics for some categories of stakeholders was carried out through (i) interviews with those responsible for managing the relationship with them; (ii) an analysis of the demands received via the communication channels with the

company; and (iii) a media analysis. Also, several national and international publications from the energy sector were surveyed.

Concerning the context of sustainability, for RAS 2019, a review of documents on sustainability in the energy sector, sustainability reports, and national/international initiatives to which Cemig adhered was carried out, together with documents that incorporate the outlook of domestic regulations and international agreements relevant to the Company.

**[102-44; 102-47; 103-1]** The list of material topics and topics<sup>11</sup> and the description of why they are material for Cemig is updated in the table below.

**10** - In this contract, Cemig proposed flexible baroding for engagement, whether it is carried out face-to-face or based on surveys, information available in-house in relationship channels with the various categories of stakeholders, and some other way acceptable by GRI to be proposed by the Consulting Firm.

**11** - In this report, "material topics" are considered as the grouping up categories of the GRI Standards that respond to the organization's material topics.

Priority material topic	Category of Stakeholders interested in the topic	Description - GRI 103-1	GRI topic	Topic boundaries		SDGs
				Internal Impact	External Impact	
Biodiversity and Protection of Habitats	Experts and Organizations of the Sector	The relationship to biodiversity and its preservation is inherent to Cemig's business. The Company operates in 2 important Brazilian biomes, the Cerrado and the Atlantic Forest, and is responsible for managing over 3,500 km <sup>2</sup> of freshwater in its reservoirs. The impacts on biodiversity and habitat protection are mainly related to energy generation and transmission activities.	Biodiversity (304)		✓	
			Environmental Compliance (307)			
Compliance and Ethical Conduct	Top Management;	The Brazilian business background has been marked by proven cases of unethical conduct in the public and private sectors. Compliance, ethics, and transparency fostering initiatives have been presented and deployed. As a semi-public corporation, Cemig engages in and endorses these initiatives with a high degree of priority.	Ethics and Integrity (102-14 and 102-15)	✓		
	Sustainability Committee;		Anti-corruption (205)			
	Workforce;		Social and Economic Compliance (419)			
	Investors;					
Development of Local Communities and Risk Management	Top Management;	Cemig is responsible for providing part of the Brazilian population with access to electricity; this way, the expansion of its operations is directly related to the development of communities. On the other hand, the proximity to generation plants and transmission and distribution networks directly impacts the safety of local communities. Thus, engagement with communities and risk management are vital to the activity of generation and supply of energy. Cemig values life and addresses this topic with a high degree of priority and relevance.	Strategy (102-14 and 102-15); Governance (102-18 to 102-39)	✓	✓	  
	Captive Customers;		Economic Performance (201)			
	Sustainability Committee;		Customer Health and Safety (216)			
	Experts and Organizations of the Sector;		Local Communities (413)			

Management Efficiency	Top Management;	Cemig has invested heavily in the efficiency of its management. As a semi-public corporation, Cemig's results are in the public interest and directly impact the government and citizens of the state of Minas Gerais. In this sense, Cemig's management team is committed to fostering the Company's operational efficiency, reliability, and resilience.	Governance (102-18 to 102-39)			 
	Experts and Organizations of the Sector;		Economic Performance (201)			
	Investors;					
Energy Efficiency	Sustainability Committee;	The impact of environmental management and eco-efficiency on sustainability, climate change, and the economic performance of the business makes these issues material for most companies. With almost 100% of the generation of electric energy coming from hydroelectric plants and with impending water crises, the challenge of energy efficiency in its operations, in the value chain, and in the consumption of customers (demand-side management) become more important for Cemig.	Economic Performance (201)			  
			Energy (302)	✓	✓	
			Emissions (305)			
Fostering the Energy Transition	Top Management;	The risks and opportunities arising from climate change and technological innovations drive the transition of the energy sector to a low carbon economy. This transition is characterized by new possibilities for the provision of services and energy alternatives, which include elements such as smart grids, distributed generation, trends in the electrification of the economy, and energy storage. Cemig operations impact on and are impacted by the energy transition, which makes this a material issue for the Company.	Strategy(102-14 and 102-15)			   
	Corporate Customers;		Economic Performance (201)	✓	✓	
	Sustainability Committee;		Energy (302)			
	Experts and Organizations of the Sector;		Emissions (305)			
Management of Suppliers	Top Management;	The environmental, economic, and social impacts of suppliers are indirect impacts on Cemig's operations. That is why supply chain management is material for the Company.	Environmental Supplier Assessment (308)	✓	✓	 
	Suppliers;		Trabalho Infantil (408) Social Assessment of Suppliers (414)			
Water Resource Management	Sustainability Committee;	With almost 100% of the generation of electric energy coming from hydroelectric plants, the management of water resources is essential for Cemig's operation. The forecasting of an intensification in drought events resulting from climate change poses significant risks to Cemig's business and highlights the material nature of the issue for the Company.	Economic Performance (201)	✓	✓	
	Investors;		Water (303)			
People Management and Development	Top Management;	Cemig's strength comes from people. To achieve its vision of the future, Cemig needs people who are capable, productive, and support the challenges and aspirations defined in its corporate strategy. The management and development of people is, therefore, highly relevant to Cemig, which seeks a people management model capable of adding value to the business.	Employment (401)			  
	Comitê de Sustentabilidade;		Training and Education (404)			
	Especialistas e Organizações do Setor;		Diversity and Equal Opportunities (405)	✓		
	Força de Trabalho		Human Rights Assessment (412)			

Research, Development and Innovation	Experts and Organizations of the Sector;	The development of innovations in products and processes is a fundamental part of Cemig's activities. Cemig understands that it has an important role in the technological research and development of solutions for the generation, transmission, and distribution of electric energy. The positive impacts that these solutions have on the electricity sector and on society make this a material issue for the Company.	Indirect Economic Impacts (203)	✓	✓	 
Protection against Losses	Sustainability Committee;	Energy losses impact the safety of the population using power hogs, the environment by greenhouse gas emissions, the Company's results by unearned revenues, and cause operational inefficiency and affect customers because of the quality of the energy supply. Protection against losses is, therefore, a material issue for Cemig.	Economic Performance (201)	✓	✓	  
			Indirect Economic Impacts (203)			
			Energy (302)			
			Emissions (305)			
			Customer Health and Safety (416)			
Quality of Energy	Corporate Customers;	The supplying of energy is Cemig's core business and the quality of the service offered is an essential condition for the continuity of that business. Energy quality is measured by indicators of interruption in energy supply and Cemig is subject to minimum standards required by the regulatory body and expected by its customers.	Organization profile (102-1 to 102-13);	✓	✓	  
			Strategy(102-14 and 102-15)			
			Economic Performance (201)			
			Indirect Economic Impacts (203)			
			Local Communities (413)			
Customer Satisfaction and Loyalty	Top Management;	There is a growing movement of migration of customers from the energy sector to the free market, which is associated with greater decision-making power on energy purchasing. This trend has a direct impact on Cemig's business, which now has customer satisfaction and loyalty as a material topic for the Company.	Customer health and safety (416)	✓	✓	
	Captive Customers;					
	Corporate Customers;					
	Sustainability Committee;		Customer Privacy (418)		✓	
Cybersecurity	Experts and Organizations of the Sector;	In an increasingly digital and connected world, cybersecurity takes center stage in companies' agendas. Cemig, the major Company responsible for supplying energy in the state of Minas Gerais, has access to the personal data of thousands of individuals and companies. With the entry into effect of the General Personal Data Protection Law (LGPD), Law No. 13,709/2018, scheduled for August 2020, this topic became material for Cemig.	Customer Privacy (418)	✓	✓	
Workforce Health and Safety	Top Management;	Transmission and distribution networks pose a high risk to the security of their operators. The health and well-being of the workforce are directly impacted by Cemig's operations and impact the Company's results. In this situation, caring for the health and safety of the workforce is a material issue for Cemig.	Organizational Health and Safety (413)	✓		 
	Sustainability Committee;					

Table 2: 2019 material topics and topics and related Sustainable Development Goals - SDGs.

Throughout this report, the relevance of each of the 15 material topics for Cemig is presented, and also how the subject is managed, the risks involved, and its related goals and objectives. The GRI index, placed at the end of the document, presents the sections and pages where these topics are covered.

[102-49] The table below shows the comparison of the set of material topics for Cemig in 2018 and 2019. It is noteworthy that there were no significant changes regarding the limits of impacts related to the topics.



Table 3: Priority material topics in 2018 and 2019

# 1.3

## OUR FIGURES 2019

GENERAL DATA	2017	2018	2019
Number of consumers (millions)	8,339	8,408	8,537
Number of employees	5,864	6,083	5,596
Number of municipalities serviced	774	774	774
Concession area - km <sub>2</sub>	567,478	567,478	567,478
FEC - number of interruptions	5.44	5.06	5.05
DEC - hours	10.83	10.05	10.62
Number of plants in operation	117	89	88
Installed Capacity- MW	5,727	6,07	6,02
Extension of transmission lines - km	6,673	4,93	4,93
Total extension of distribution grids - km	512,572	536,569	539,807
Urban extension of distribution grids - km	107,099	108,576	109,977
Rural extension of distribution grids - km	405,473	410,486	429,83

ENVIRONMENTAL ASPECT	2017	2018	2019
Funds invested in the environment - R\$ million	38	48	55
Fleet consumption by renewable fuel (GJ)	152,166	139,114	144,916
Installed capacity free from GHG emissions (%)	98	98	100*
Total water consumption - m <sub>3</sub>	363,756	266,618	254,094
Direct CO <sub>2</sub> emissions - tCO <sub>2</sub> e	48,849	35,613	51,938
Funds invested in environmental R&D - R\$ million	1	4	22

\* In the end of 2019, UTE Igarapé, the only Cemig thermal plant in operation, was deactivated

SOCIAL ASPECT	2017	2018	2019
Average training hours per employee	35.52	38.31	56.52
Total of funds invested in in-house and external social indicators - R\$ million	11	12	13
Accident frequency rate - in-house employees	1.85	0.91	1.03
Accident frequency rate - contractor employees	1.28	1.71	1.76

Table 4: Historical series of major indicators

# 1.4

## MAJOR HIGHLIGHTS 2019



In 2019, Cemig took efforts to maintain and improve its performance in environmental, economic, and social aspects. The acknowledgment of the Company's work is stressed by awards, achievements, and highlights from the major institutions and market analyzes in this regard.



### ROBECOSAM SUSTAINABILITY YEARBOOK 2020

Cemig was listed in the bronze category of RobecoSAM's<sup>12</sup> Sustainability Yearbook 2020<sup>13</sup>. In selecting the highlights, the Yearbook examines important topics for companies, such as financial aspects, capacity for innovation, and retention and attraction of talents, in addition to operational efficiency. The Company inclusion in the Yearbook is the result of its continuous efforts to prioritize issues related to its contribution to sustainable development.

**12** - A company specialized in asset management and offering products and services in the field of sustainable investments.

**13** - The RobecoSAM Yearbook is based on the results of the 2019 SAM Corporate Sustainability Assessment, which also feeds the results of the Dow Jones Sustainability Index.



### DOW JONES SUSTAINABILITY WORLD INDEX - DJSI WORLD

For the 20th consecutive year, Cemig was selected to be included in the portfolio of the Dow Jones Sustainability World Index - DJSI World, for the 2019/2020 period. The index acts as the global indicator of financial performance and substantiates Cemig's objective of prospecting and implementing new businesses and improving its corporate sustainability practices. The new structure of DJSI World brings together 318 companies from 27 countries, selected from a group of 2,526 companies from 58 sectors of the economy.



## CORPORATE SUSTAINABILITY INDEX - ISEB3

Cemig ensured its continued inclusion in the portfolio of the Corporate Sustainability Index - ISE for the 15th consecutive year thanks to the corporate practices applied and maintained by the Company. ISE B3 is a tool for comparative analysis of the performance of companies listed on B3 from the point of view of corporate sustainability, based on economic efficiency, environmental balance, social justice, and corporate governance. The Company being kept in the ISE portfolio confirms Cemig's efforts to develop management solutions focused on efficiency, and in line with good socio-environmental practices.



## CARBON EFFICIENT INDEX $ICO_2$

Cemig is part of the 2019/2020 Portfolio of the B3  $ICO_2$  Carbon Efficient Index. To weigh the actions of the companies included in it, this index - which assesses transparent practices in relation to greenhouse gas (GHG) emissions - takes into account their degree of efficiency in GHG emissions, in addition to the free float (total stocks outstanding)

of each of them. The Carbon Efficient Index ( $ICO_2$ ) was developed in a partnership between B3 and the Brazilian National Bank for Economic and Social Development (BNDES). It is made up of shares from companies included in the IBrX50 index that have adopted transparent practices regarding their greenhouse gas emissions.



## MSCI ESG RESEARCH

Rated in the "AA" Leader category for the fifth consecutive year. MSCI rates the performance of companies based on environmental, social and governance (ESG) criteria, together with financial factors, and assists investors with a focus on ESG aspects in their decision-making process. MSCI is a leading provider of critical decision support tools and services to the global investment community, with over 45 years of experience in research, data, and technology. Over 7,500 companies from all over the world are assessed in this process. Cemig is a leader among the 143 companies in the public utility sector appraised by MSCI.



## CDP – DISCLOSURE INSIGHT ACTION

Since 2007 Cemig has answered the CDP questionnaire<sup>14</sup>, and 2019 is the eighth consecutive year that CDP has awarded the Company. This year, the Company answered the CDP questionnaires regarding Climate Change and Water Security<sup>15</sup>. The selection took into account the level of detail of the responses regarding criteria such as risk management, governance, commitment to mitigation, and initiatives to reduce greenhouse gas emissions. In its report, Cemig provides a survey of risks and opportunities for its businesses resulting from climate change and monitoring and control measures.

In 2019, Cemig was rated as an A- company in the Climate Change questionnaire, and for the first time, it was included in the Water Security “A-List”<sup>16</sup>, which acknowledges excellence in the management of water resources; it is the only Brazilian electricity sector company among businesses that are leaders in climate change management and water security.

Becoming a Company awarded by CDP points to a high level of transparency<sup>17</sup> in the disclosure of information related to the topic of climate change, providing investors with consistent content on climate change management and water security.



## 2019 GLOBAL 100

During the World Economic Forum in Davos, Switzerland in January 2020, Cemig was included for the 3rd consecutive year as one of the 20 most sustainable companies in the world in the Global 100 ranking of Corporate Knights magazine. The ranking, including 100 companies from all over the planet, classifies corporations for their performance in criteria such as reduction of greenhouse gas emissions, waste, gender diversity on the Company board, revenue derived from sustainable products, and sustainability in general. In its 15th year, the list is compiled by the Canadian specialized magazine Corporate Knights, which analyzes 7,500 companies with annual revenues in excess of \$1 billion.

**14** - For more information, go to:  
<https://www.cdp.net/pt>

**15** - CDP questionnaires are: Climate Change, Water Security and Forests.

**16** - For more information, go to: <https://www.cdp.net/pt/companies/companies-scores>

**17** - Cemig answers to CDP 2019 can be seen on the CDP website -  
<https://www.cdp.net/pt/responses?utf8=%E2%9C%93&queries%5Bname%5D=CEMIG>



## ANEEL CONSUMER SATISFACTION INDEX - IASC

Published annually by Aneel since 2000, the Aneel Consumer Satisfaction Index (IASC) assesses the opinion of residential customers concerning the quality of services provided by electricity distributors. The assessments of distributors in IASC 2019 were obtained via an opinion poll conducted throughout Brazil, from July 22 to November 13. According to the survey, 70.58% of Cemig's residential customers are satisfied with the services provided by the company, a result that exceeds the goal laid down by the agency and is the best one obtained by Cemig since 2009.



## ABRACOPEL JOURNALISM AWARD (PRESS OFFICE AND BUSINESS ADVISORY CATEGORIES)

Cemig's press office was awarded twice at the 13th Abracopel Journalism Award in the Press Office (winner) and Business Advisory (honorable mention) categories. The Abracopel Journalism Award is given by the Brazilian Association for Awareness of the Dangers of Electricity and it was conceived to encourage media professionals to think about safe electricity and, thus, create stories to be read, heard, and seen. In this edition, Cemig was nominated 4 times in 3 categories.



## TOP 50 OPEN CORPUS RANKING

The constant goal of introducing innovation into Cemig's business has earned the Company 12th place among the companies most engaged with the innovation ecosystem, according to the 2019 Top 50 Open Corps Ranking. The initiative mainly takes into account the relationship between large organizations and startups, based on the support for and development of innovation proposals. At Cemig, one of the main ways of attracting these initiatives is the Research and Development (R&D) Program, which provides opportunities for the development of research and discussions that contribute to the future of the energy sector.



## TRANSPARENCY TROPHY 2019 -

National Association of Finance, Administration and Accounting Executives (Anefac), the Foundation for Accounting, Actuarial and Financial Research (Fipecafi) and Serasa Experian:

Due to the quality of the information provided and its relationship with shareholders, Cemig was once again recognized by the financial market via the National Association of Finance, Administration, and Accounting Executives (Anefac), the Foundation for Accounting, Actuarial and Financial Research (Fipecafi), and Serasa Experian. The Company won the 23rd Transparency Trophy 2019 in the “Publicly Traded Companies with Revenues above R\$ 5 billion” category, acknowledged for the clarity of its financial statements, the quality of the information disclosed, and its good standing. Created in 1997, the award encourages corporate transparency in the market. The winning companies of this edition were selected more than 2 thousand financial statements were analyzed and assessed by students of the master's and doctoral courses at FEA/USP/Ficapifi.



## COMPANIES THAT BEST COMMUNICATE WITH JOURNALISTS AWARD 2019

Communication Studies Center (CECOM) and Business Communication platform

On November 4, 2019, Cemig received the Companies that Best Communicates with Journalists Award 2019, promoted by the Center for Communication Studies (CECOM) and the Business Communication platform (São Paulo). In total, about 25 thousand press professionals from all over the country voted in the award, which assesses the quality and transparency of companies and communication agencies that provide services for the sector.



## TOP 100 GREEN UTILITIES::

This is a ranking of the top 100 power generation companies that utilize practices focused on generating renewable energy and reducing greenhouse gas emissions. It occupies the 21st position, and there are only two more Brazilian companies included in the index.

## 3RD MARIO BHERING AWARD

Cemig received the Mario Bhering Award in the “Sector Preservation Initiatives” category, granted by the Electricity Memory Center of Brazil.

The award was given to the Company for reopening the Marmelos Zero Museum project, which celebrates 130 years in 2019 and holds the history of the first hydroelectric plant in South America, located in the city of Juiz de Fora (MG).

## EXTERNAL INITIATIVES

**[102-12]** Cemig is a signatory and supporter of and participant in several national and international initiatives, to boost its commitment and contribution to sustainable development, guide the practices of its administrators, tax advisers, employees, interns, contractors and subcontractors, business partners, suppliers, and service providers. The following voluntary commitments stand out:

- Since 2009, Cemig has become a signatory of the accession charter to the United Nations Global Compact - UN;
- Since 2017, Cemig has become a signatory of Ethos Institute's Business Pact for Integrity and Against Corruption.

In 2019, the Company did not take on any new formal voluntary commitments.



## 2 BUSINESS MODEL

**[102-1; 102-2; 102-5]** Companhia Energética de Minas Gerais S.A. - Cemig is a mixed-capital and publicly-traded company that is controlled by the State of Minas Gerais, holding 50.97% of the Company's common shares. The Federal Government, through BNDES<sup>18</sup> Participações S.A. - BNDESPar, holds 11.14% of the common shares. The Company's shares are traded at the São Paulo, New York and Madrid stock exchanges. With over 150 thousand investors in 38 countries, the Company's market value on 31/Dec/2019, was approximately R\$ 21 billion.

**18** - Brazilian National Bank for Economic and Social Development.

**[102-3; 102-4]** The Cemig Group is headquartered in Brazil, in the city of Belo Horizonte, Minas Gerais, and is responsible for providing services to some 30 million people in 805 municipalities in the Brazilian states of Minas Gerais<sup>19</sup> and Rio de Janeiro. Its operations include the management of the largest power distribution network in South America, over 539 thousand kilometers long, resulting in assets in 24 Brazilian states and the Federal District.

**19** - In Minas Gerais alone, it is 774 municipalities.

The Company is formed by its wholly-owned subsidiaries, Cemig Distribuição S.A. and Cemig Geração e Transmissão S.A. Also, Cemig holds a 22.6% interest in the capital of Light S.A., in which it participates in the control block, and also holds a 21.68% interest in the capital stock of Transmissora Aliança de Energia Elétrica S.A., Taesa, thus granting it control of the company. Cemig Holding's interest in the capital of subsidiaries and affiliates are displayed in the figure below.

## COMPANHIA ENERGÉTICA DE MINAS GERAIS

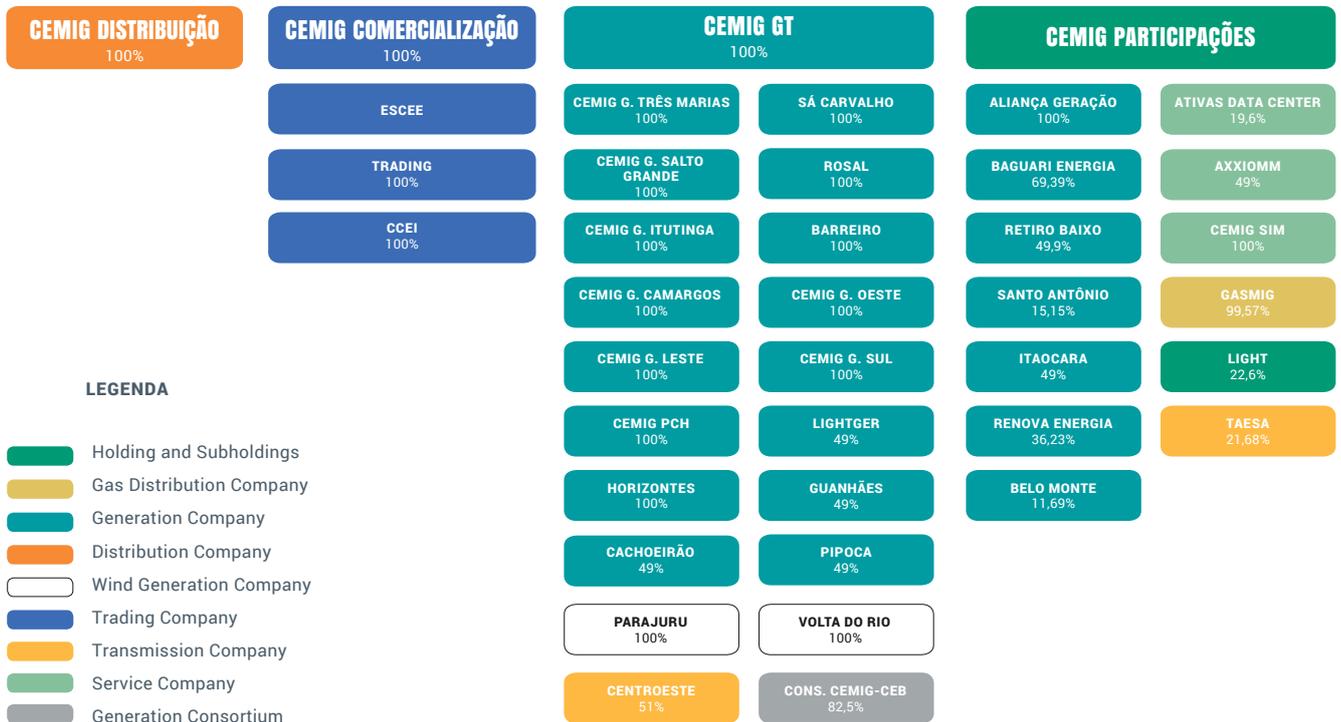


Figure 1: Cemig Group's Organizational Chart

The Company supervises the management and development of subsidiaries and affiliates by an active participation in their management bodies, following the criteria of good corporate governance and ensuring compliance with their business plans.

Cemig is recognized for its size and technical competence, and is the largest integrated company in the power sector in Brazil. In Minas Gerais, it accounts for 96% of the concession area, with over 8.5 million consumers in 774 municipalities. It is also (i) the largest supplier of energy to free customers in the country, holding 25% of the market; (ii) the third largest generator group; (iii) the second largest transmitter; and (iv) the largest distribution group in Brazil.

In carrying out its activities, Cemig seeks to create value for its shareholders, employees, suppliers, and society. Investments in expanding

energy distribution and a commitment to the quality of customer service substantiate Cemig's strategic vision, which is based on the principles of sustainability and social and environmental responsibility.

Cemig's main elements are the following:

- The technical capacity and quality of its workforce, acknowledged both domestically and internationally for its expertise;
- Natural resources, mainly water, as a large part of its installed capacity comes from hydroelectric plants;
- The financial resources of the government and other shareholders required for the development of the business;
- Inputs provided by suppliers and customer, consumer, and local community loyalty.

The diagram below shows how Cemig's management and governance structures can have significant impacts on natural, physical, financial, social, and relational, human, and intellectual capital.

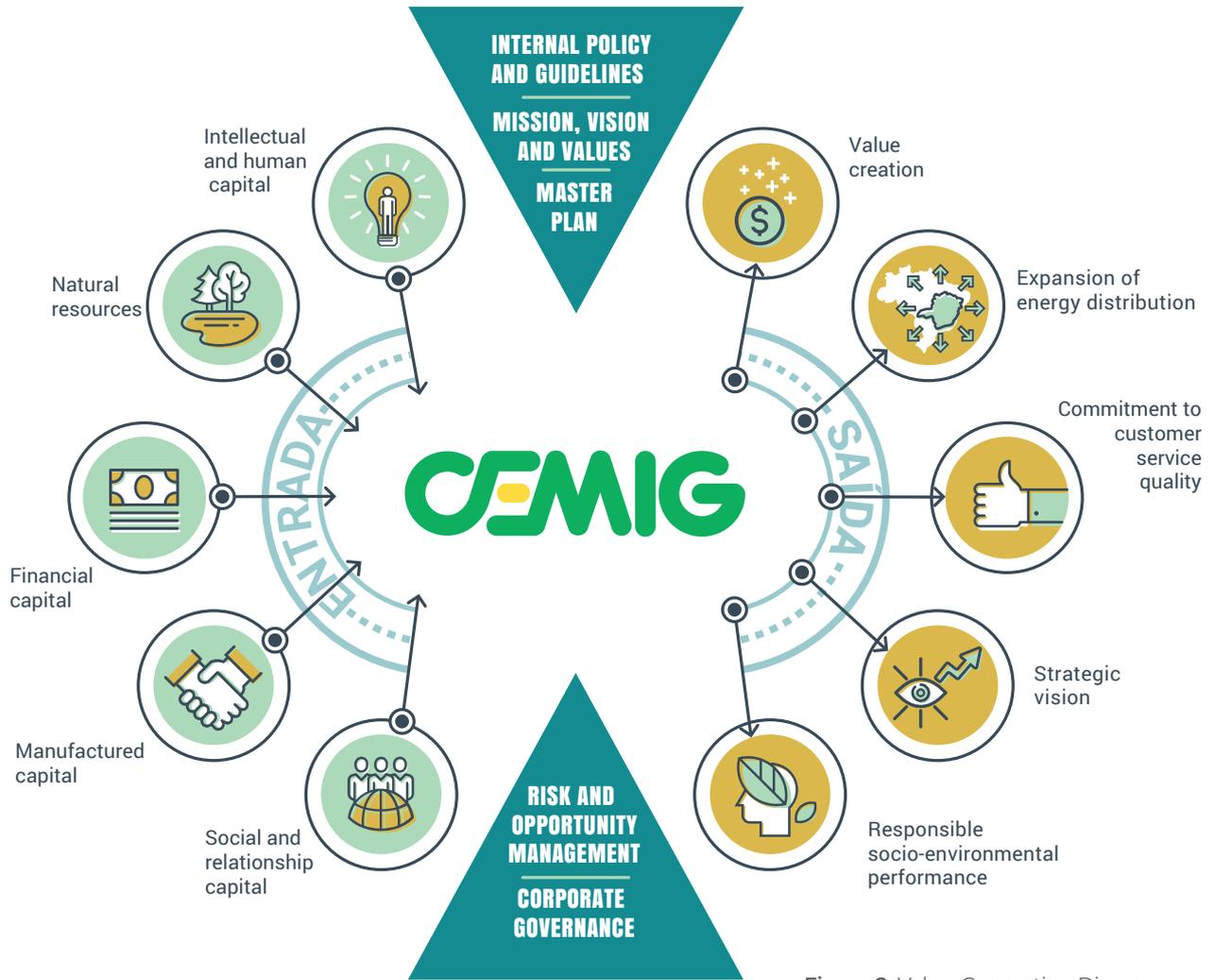


Figure 2: Value-Generation Diagram

Cemig's management system follows the guidelines stated in its strategic foundations, mission, vision, and values. It is geared towards successfully leading and operating the Company's organization and was designed to continuously improve its performance. Below are these guidelines, which were updated and approved by the Board of Directors.

## MISSION

Provide clean and accessible energy integrated solutions to society, in an innovative, sustainable, and competitive way.

## VISION

To be among the 3 best integrated electric power groups in Brazil regarding governance,

financial health, asset performance, and customer satisfaction.

## VALUES

The organizational values stand for the beliefs and attitudes that give personality to Cemig's relationship with stakeholders; they are supported by:

**RESPECT FOR LIFE:** Act prudently and prevent accidents in any situation.

**INTEGRITY:** Act ethically, transparently and honestly.

**VALUE GENERATION:** Provide solutions for the well-being and prosperity of customers, shareholders, employees, suppliers, and society.

**SUSTAINABILITY AND SOCIAL RESPONSIBILITY:** Supply safe, clean, and reliable energy, contributing in a sustainable way to economic and social development.

**COMMITMENT:** Act with responsibility, enthusiasm, dedication, and in a proactive way.

**INNOVATION:** Be creative and seek new solutions to the challenges faced by the company.

Cemig assesses its way of management using several tools and processes. First of all, it is important to note that a large part of the Company's business processes are certified in the ISO 9001 (Quality Management System), ISO 14001 (Environmental Management System) and OHSAS 18001 (Occupational Health and Safety Management System) standards. The organization's processes certified in these standards undergo periodic internal and external audits that assess compliance with regulatory requirements. In general, the audit processes promote actions to improve management; these are an important way to assess the full functioning of its management practices, as well as compliance with its indicators and meeting the interests of its most critical stakeholders.

Regarding Cemig Distribuição (Cemig D), the company participates annually in the Abradee Award, an event put together by the Brazilian Association of Energy Distributors - Abradee that aims to encourage the adoption of best practices and competitiveness for the sector. 43 electric energy distribution concessionaires participate in accessory participate in that association. They are active in all regions of the country, and the set of them is responsible for serving about 99% of the Brazilian electricity market.

Participation in the award allows for a broad diagnosis of organizational management, as the inputs for the available evaluation criteria include the Management Excellence Model maintained by the National Quality Foundation - FNQ, as well as the ETHOS institute indicators that evaluate and rank organizations concerning social and environmental responsibility practices.

In 2019 Cemig D showed an increase in its score in the management maturity criterion, with an almost 35% higher score compared to the previous year. Participating in the award is also an opportunity for the company to have access to sector indicator data from other organizations, which allows it to compare its results with the best in the sector.

Cemig also has a business strategy management sector that, together with representatives of the various processes, assesses the internal and external environments, periodically drafting and reviewing the corporate mission, vision, and values, as well as its short and long term objectives. When carrying out the analysis of the business background, the Company assesses its management; this is sometimes helped by specialized consultants and uses corporate models (benchmarking) data as a basis for these analyzes.

Also, strategy management constantly monitors the system of objective-linked performance indicators, one of the major ways of assessing management.

Cemig annually participates in several national and international sustainability rating initiatives, to obtain assessment and validation of recognition for its quality and sustainability practices.

Participation in ratings helps the organization to be in line with the best management practices, adapting to global trends, and using the inputs of this participation to improve its management.

Another way the organization has of assessing and adjusting its management tools is customer satisfaction surveys. Considering only Cemig D, there are two major forms of gathering customer

perception on corporate processes: **(i)** aAneel Consumer Satisfaction Index - IASC survey carried out by Aneel; and **(ii)** the Perceived Quality Satisfaction Index - ISQP coordinated by Abradee.

These surveys provide important information about the organization's management. The surveys are held at different times of the year and have specific methodologies, thus allowing the company to understand which aspects of management need to be improved. The results are evaluated by the teams in charge of the effort, and those teams produce improvement actions accompanied periodically by the organization's top management.

## 2.1 OPERATIONS

**[102-7; 102-10]** In the domestic power generation segment, Cemig GT is one of the largest electric energy generators in Brazil. At first, during 2019, the Company had a portfolio with 90 plants, of which 82 were hydropower ones (40 UHEs, 35 PCHs and 7 CGHs)<sup>20</sup>, a thermoelectric one, a photovoltaic plant and 6 wind farms, which had an installed capacity of 6,070 MW<sup>21</sup>.

However, at the end of 2019, it accounted only for the resources of 88 plants only (HPP Candonga and UTE Igarapé<sup>22</sup> and UTE Igarapé<sup>23</sup> were deactivated. With that, Cemig's installed capacity



in late 2019 totaled 6,020 MW, which amounted to a 1.8% decrease in relation to the Company's installed power in late 2018.

**20** - HPP (Hydroelectric Power Plant), SHP (Small Hydroelectric Plant) and HGP (Hydraulic Generating Plant).  
**21** - Datum considering all plants from Cemig and the holding companies in which it has an interest.  
**22** - Plant deactivated since the end of 2015 due to the failure of the Fundão tailings dam in the town of Mariana, Minas Gerais.  
**23** - Thermal Power Plant (UTE).

It is understood that 4 relevant variables are causing a significant change in installed capacity in 2019:

- UTE Igarapé will no longer be accounted for in Cemig's installed capacity, as it was deactivated at the end of 2019. Despite having operated throughout the year, the UTE only generated energy until October, as it underwent a deactivation and decommissioning process;
- Employing its Divestiture Program, Cemig disposed of interest mainly in Brasil PCH, Light Energia, and Renova companies. The reduction in its shareholding in these businesses was accompanied by a reduction in the installed capacity attributed to Cemig;
- On the other hand, to shore against the decrease in installed capacity through Aliança Energia company, Cemig invested in a wind farm enterprise, which increased the installed capacity of this generation source in 2019<sup>24</sup>.
- The Belo Monte plant, which is owned by Cemig, increased energy production in 2019, as its turbines went into full operation.
- Historically, the energy matrix of Cemig's generating complex is mostly renewable, and at the end of 2019, the Company reached 100% of its installed capacity from renewable energy sources<sup>25</sup>. That is, of the 6,020 MW of installed capacity<sup>26</sup>, 100% were from hydraulic, wind, or solar projects. Hydraulic sources were responsible for approximately 98.1% of the installed capacity.<sup>27</sup>

**24** - In 2018 Cemig held an interest in two wind farms, and in 2019, it closed the year with 6 wind farms in its portfolio.

**25** - Electric Sector GRI EU-01; EU-02.

**26** - The installed capacity being considered refers to Cemig's production potential at the end of 2019.

**27** - The Igarapé UTE, the only non-renewable energy source, was deactivated by the end of 2019.

In terms of net energy production, in 2019 13,407,445.3 MWh were generated<sup>28</sup>; of these, 13,208,157.6 MWh (99.6%) came from renewable sources. Compared to 2018, there was a 2.3% reduction in net energy generation at Cemig's plants in 2019.

**28** - Data considering only the plants in which Cemig has a majority interest, which excludes the plants from the following companies: Brasil PCH, Light Energia, Lightger, Norte, Renova Energia, Retiro Baixo Energética S.A., and SAE. Should there be any interest in finding out about the power generation of these plants, each of these companies publish their own reports.

Source	Installed Capacity (MW)				Net Generation (MWh)			
	2018	%	2019	%	2018	%	2019	%
Water	6	96.6	5903.4	98	13,600,355	99.1	13,208,158	98.5
Thermal	131	2.2	0	0	23	0.2	45	0.3
Wind	70.8	1.1	115.2	1.1	95	0.7	153	1.1
Solar	1.42	0.02	1.4	0.02	2	0.01	1	0.01
<b>Total</b>	<b>6</b>	<b>100</b>	<b>6</b>	<b>100</b>	<b>13,720,045</b>	<b>100</b>	<b>13,407,445</b>	<b>100</b>

Table 1: Generation Park

As mentioned above, there was a considerable 60.5% increase in wind power generation, which shows a growing trend in the Company's expansion guidelines.

In 2019, thermal energy generation practically doubled in relation to 2018. And a significant factor that influenced the reduction in net generation was the fact that UHE São Simão remained under Cemig's control until mid-2018, and is no longer included in the energy-generation portfolio in 2019.<sup>29</sup>

Energy transmission carried out by Cemig GT is made via a 4,930-km-long transmission network<sup>30</sup> including 38 substations strategically distributed over its area of operation. The table below shows the makeup of the transmission network.

Voltage Level (kV)	Total Extension (km)
230	769
345	1,981
500	2,18
<b>Total</b>	<b>4,93</b>

29 - For more information, go to: <https://www.uhesaosimao.com.br/>

30 - Electric Sector GRI EU-04

Cemig D is the Cemig Group's company in charge of operating the distribution network. With an area of operation covering 774 municipalities in Minas Gerais, Cemig D has 539,807.23 km of distribution networks - including medium, low and high voltage networks (MV, LV and HV, respectively) - in addition to 409 substations. This represents a 1.3% increase compared to the extension of the network in 2018, and a 2.2% increase in the number of substations.

Kind of Network	Extension		
	km MT	km BT	km AT
Urban Aerial Networks	40,074.38	66,502.05	923.05
Rural Aerial Networks	394,743.85	18,567.81	16,518.18
Urban Underground Networks	318.31	2,159.60	0
Rural Underground Networks	0	0	0
<b>Total (km)</b>	<b>539,807.23</b>		

Table 2: Cemig's Distribution Lines in 2019<sup>31</sup>

Cemig has been consolidating its shareholding in several significant companies in the national energy sector, including the exclusive distribution of piped natural gas throughout the territory of Minas Gerais by grant or concession.

In order to shore up its operation, the Company had 5,596 in-house employees in 2019. Further information on the organization size can be found in the Economic Performance chapter.

31 - Electric Sector GRI EU-04

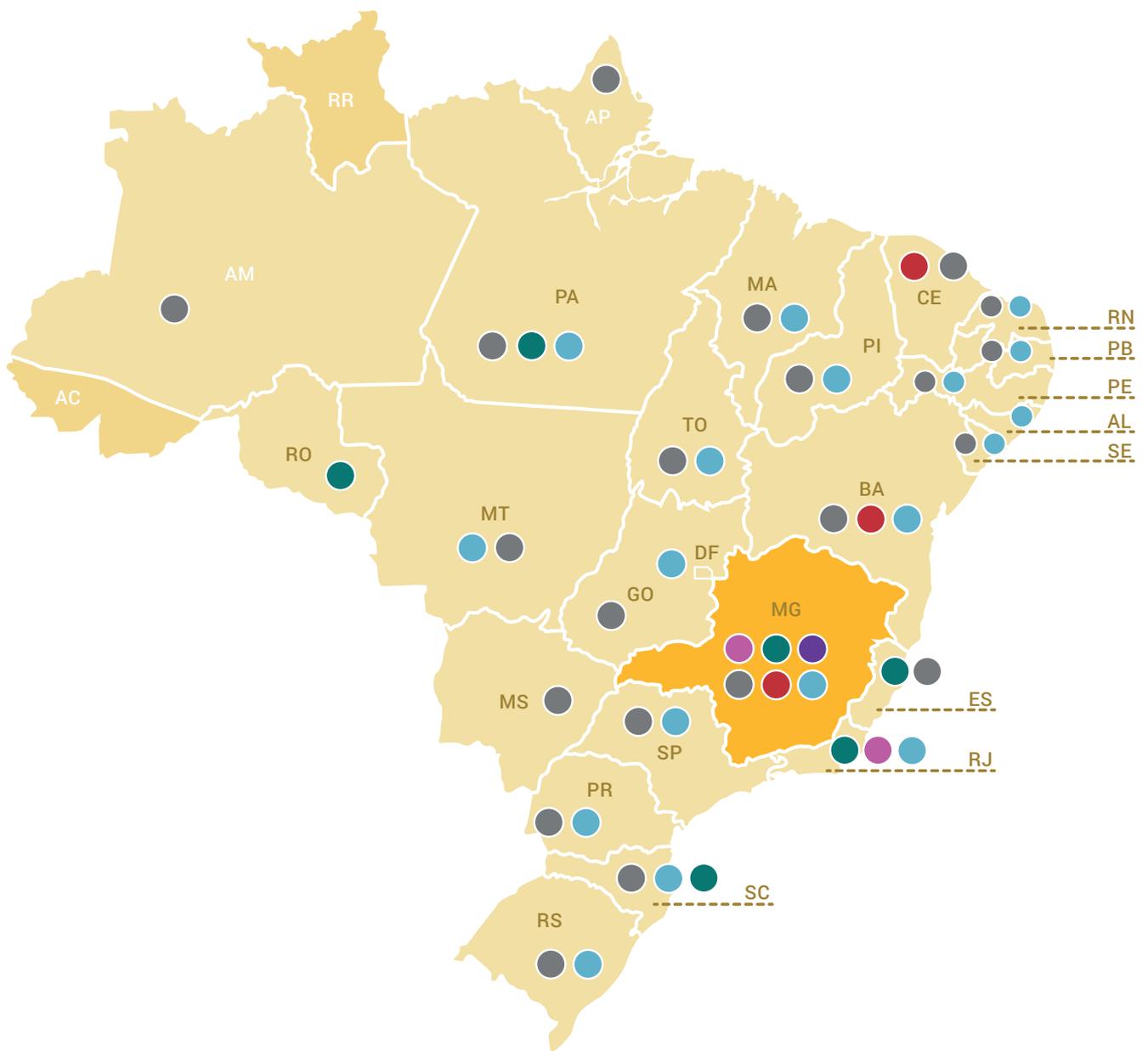


Figure 3: Where we are

## 2.2 STRATEGY

The guiding principles of strategic planning (mission, vision, and values), as well as the guidelines, goals, and initiatives of Cemig and its businesses, support the deployment and conducting of its business strategy.

[102-26] Pursuant Law No. 13,303/16 and State Decree No. 47,154/17, the Executive Board is responsible for presenting the strategic planning to the Board of Directors, which is responsible for approving (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 5 years.

As a result, on December 12, 2019, the Board of Directors approved Cemig's strategic plan, consisting of two main parts: the Long-Term Strategy and the Multi-Annual Business Plan (reviewed annually). Cemig's Long-Term Strategy is made up of long-term guidelines that are reviewed every 5 years. The Multiannual Business Plan, on the other hand, consists of strategic drivers, indicators, goals, and initiatives of the holding and the businesses, and is subject to annual reviews.

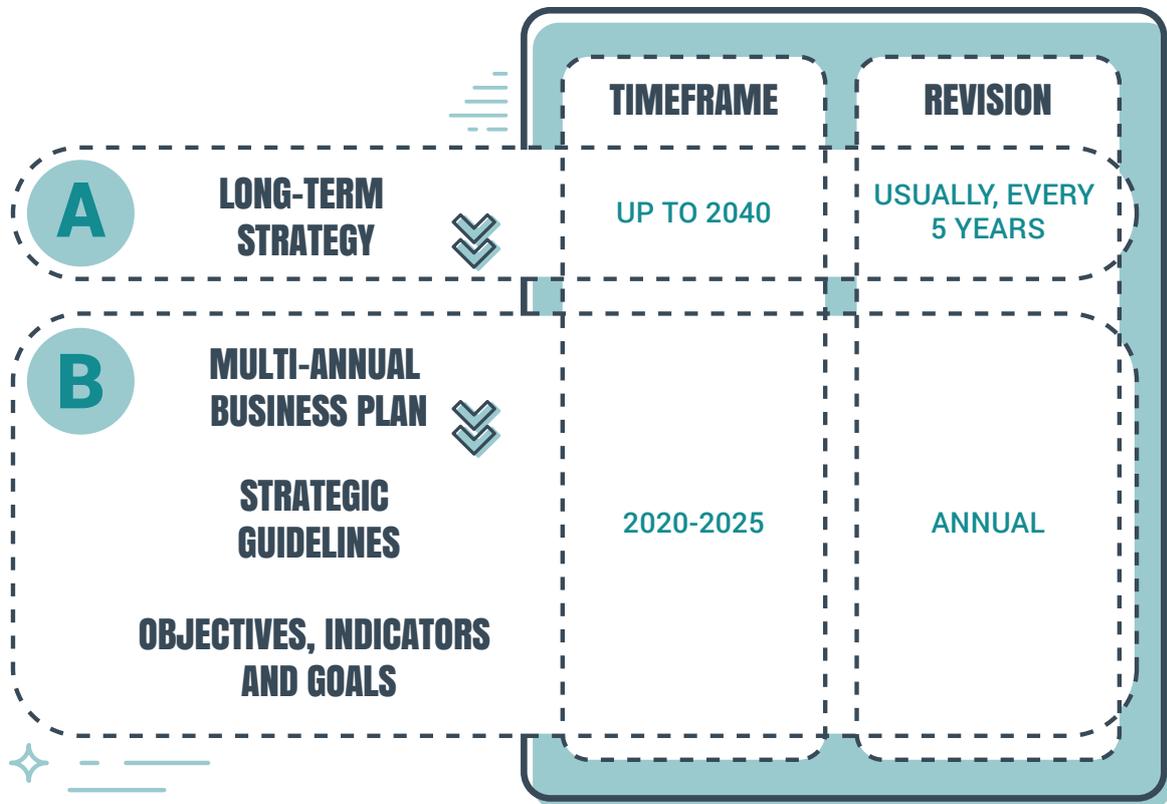


Figure 4: Strategic Planning Structure

In 2019, the Cemig's Institutional Meeting was held, attended by Company leaders; there, the board spoke about the background of the company and presented the drivers for 2020 and the following years. At the meeting opening, the CEO spoke to the more than 650 attending employees about the scenario in which the Company finds itself, the challenges already overcome, and those that are yet to come.

At that time, he also spoke about the possibility of privatization, "a decision of the Government alone", and stressed that the obligation of all the Company's leaders and employees "is to make Cemig efficient and sustainable". To achieve that, he mentioned the importance of investing in the training of teams and the development of skills in the workforce: "Professionals who are a benchmark in the power sector throughout Brazil". The event addressed the modernization of the power system and new solutions for customers.

As the schedule proceeded, each director spoke about the strategic objectives for 2020:

- Be excellent in investment and divestiture management;
- Expand operations in the core business;
- Increase customer satisfaction;
- Increase profitability;
- Ensure regulatory compliance;
- Be innovative and streamlined in the search for technological solutions for business;
- Raise the level of compliance and internal control;
- Increase operational efficiency;
- Be a benchmark in image and reputation;
- Boost meritocracy and accountability.

By means of the Balanced Scorecard methodology, the Company's Strategy was detailed into 5 strategic maps: Corporate, Generation, Transmission, Distribution, and Commercialization. They actually represent the Company's Strategy concretely, and are essential tools for deploying strategic projects, thus realizing the elements laid down in it. They are made up of a set of objectives, indicators, and targets distributed along 4 fields: financial, market, internal processes, learning, and growth.

The strategic maps are available on the intranet; each Cemig area has its own panel of indicators and targets for 2020, which is directly related to them. This helps everyone to understand their contributions to the Company's strategy.

Finally, the monitoring dynamics of the Multiannual Business Plan are based on long-term strategic guidelines and, as a pathway, the strategic guidelines and objectives defined for the holding and the business (2020-2025).

The targets are the indicators and goals to be achieved and the strategic initiatives are responsible for helping to realize results.



Figure 5: Multiannual Plan Follow-Up Dynamics

In December 2019, all leaders (representing the several areas of the company) signed their respective goal agreements through a panel of indicators. These agreements are linked to the strategic deliveries for 2020, which will be followed up at systematic meetings throughout the year.

## CEMIG D'S RESULTS PLAN

In order to achieve the objectives laid down by sectorial regulation, Aneel developed, in 2016, a new inspection model called Strategic Inspection<sup>32</sup>, based on the best practices of the regulatory agencies that are members of the Organization for Economic Co-operation and Development - OECD.

Using this methodology, the Agency aimed at contributing to the solution of the problems detected in the inspection processes, seeking regulatory compliance for its concessions (by exchanging the punitive approach for a preventive one involving participation and collaboration with companies).

Based on this rationale proposed by Aneel in 2016, Cemig was asked for detailed information on all services performed by Cemig D in the years 2014 and 2015. Using these data, SFE prepared an analytical report displaying indicators that demonstrate the quality of the services provided by Cemig D was below the desired level, thus pointing to a need for actions to comply with regulatory requirements.

<sup>32</sup> - For more information, go to: [http://www2.aneel.gov.br/arquivos/PDF/ficalizacao\\_estrategica-evento-03-03-2016.pdf](http://www2.aneel.gov.br/arquivos/PDF/ficalizacao_estrategica-evento-03-03-2016.pdf)

<sup>33</sup> - Superintendency for Power Service Inspection - SFE/Aneel

Cemig D's Results Plan (to adjust the provision of the distribution service to regulatory requirements) was started in September/2017 and concluded in August/2019. Its pillars are described below:

- Quality of Energy Supply and implementation of PDD Works to improve quality, aiming at reducing the following indicators: Equivalent Continuity Duration - DEC and Equivalent Continuity Frequency - FEC;
- Commercial Quality: the percentages for out-of-date commercial services (12 services) where Cemig D had the worst performance in 2016 were monitored, together with the quality of the handling of the distributor complaints, by monitoring the total number of complaints filed at the Aneel ombudsman office;
- Rural Service Recovery Plan: specific monitoring of the execution of rural works in arrears;
- Safety Indicators: monitoring of frequency/severity indicators for accidents and the number of deaths in the workforce, in addition to the number of accidents and deaths in the population;
- Economic and financial sustainability indicators: monitoring of the economic and financial sustainability indicators of the Concession Contract.

The results achieved were the following:

- Quality of Supply and PDD Works to improve Quality: the concession contract indicators were complied with; however, the Regulatory Agency signaled the need for improvements in the indicators as a whole;
- Commercial Quality: of the 12 services pointed out by Aneel as displaying unsatisfactory performance, at the end of the Plan, only 3 did not meet the set goal. However, these 3 services referred to works in arrears that, due to the completion of the pillar related to this topic, were recorded as arrears when these works were completed at the end of the plan;
- Rural Service Recovery Plan: out of a total of around 35,000 works in arrears at the beginning of the Plan, the company reached the end with less than 600 works overdue, a result that was considered satisfactory by Aneel;
- Safety Indicators: there was a significant reduction in the number of deaths among the population and no fatalities in the workforce; however, there was a need for improvement in the frequency and severity indicators of accidents;
- Economic-Financial Sustainability Indicators: it has been concluded that, during the period of the Results Plan, Cemig D presented good sustainability indicators, with an increase in EBITDA, a decrease in investment measured by gross CAPEX, and stability of operating costs.

In October 2019, the company started a new Results Plan (presented by Aneel), to be carried out and completed by September 2020 and focused on:

- **Connection with Works:** monitoring of the performance of the Distributor Utility in meeting requests for initial supply and charge increase, with the need for works. Indicators that measure the average term of studies, budget for the works, and the average term of execution are monitored. The goals are that the average term of studies in arrears must be less than or equal to 39 days, and the percentage of works carried out after the deadline must be less than or equal to 5%;
- **Continuity of Supply:** assesses the quality of the service provided by the Distributor Utility and compliance with regulatory aspects regarding duration and frequency of interruptions and the time taken to respond to incidents. The goal is to reach 158 sets<sup>34</sup> within the DEC limit and 246 sets within the FEC limit, in addition to complying with the global concession indicators.

**34** - Conjuntos são as subdivisões que a Aneel utiliza para acompanhar os indicadores de continuidade de uma concessionária. Normalmente eles têm relação com a quantidade de subestações e de consumidores. No caso da Cemig D, são 295 conjuntos elétricos. Para mais informações, acesse: [https://www.Aneel.gov.br/documents/656827/14866914/M%C3%B3dulo\\_8-Revis%C3%A3o\\_10/2f7cb862-e9d7-3295-729a-b619ac6baab9](https://www.Aneel.gov.br/documents/656827/14866914/M%C3%B3dulo_8-Revis%C3%A3o_10/2f7cb862-e9d7-3295-729a-b619ac6baab9)

According to the Regulatory Agency, the reduction in the scope of the new Plan from 5 to 2 pillars aims to provide a better assessment of the results of the concessionaires, based on fewer criteria and variables.

## DIVESTITURE PROGRAMS

**[102-10]** On July 17, 2019, as a continuation of the Divestiture Program<sup>35</sup>, the Company sold 33,333,333 shares of Light at the unit price of R\$ 18.75, totaling R\$ 625 million and recognizing a capital gain of R\$ 224 million after taxes.

The table below shows the divestiture operations concluded by December 2019, which resulted in the amount of R\$ 2,071 million, and the progress of the other operations in the Divestiture Program:

**35** - For more information about the Plan, see the RAS 2018, available at <http://www.cemig.com.br/RAS/relatorio2018/Paginas/ras2018.pdf>

COMPANY	% OWNERSHIP INTEREST	VALUE IN R\$ MM	STATUS
<b>USED</b>			
	9.86%	717 <sup>1</sup>	"BLACK TRADE" COMPLETED. SALE OF 34 MM UNITS, WITH CEMIG'S OWNERSHIP INTEREST GOING FROM 31.54% TO 21.68% (NOV/2017)
	25%	80 <sup>1</sup>	TRANSFER TO TAESA COMPLETED (NOV/2017), WITH R\$24 MM RECEIVED AS DIVIDENDS AND R\$56 MM PAID BY TAESA AT CLOSING.
	100%	649 <sup>1</sup>	SALE OF ASSETS THROUGH AN AUCTION COMPLETED IN AUGUST 2018.
Consórcios de Exploração de Gás	24.50%	0 <sup>1</sup>	AUCTION COMPLETED - CONTRACT ASSIGNMENT ONGOING.
	10.97%	625 <sup>1</sup>	DISPOSAL VIA FOLLOW-UP OF 33,333,333 SHARES ON 11/JUL/2019.

COMPANY	% OWNERSHIP INTEREST	VALUE IN R\$ MM	STATUS
<b>ONGOING</b>			
	-	- <sup>4</sup>	THERE IS NO EXPECTED EXIT TIME BEFORE A COMPLETE FINANCIAL AND OPERATIONAL RESTRUCTURING OF RENOVA. COURT-SUPERVISED REORGANIZATION PLAN FILED IN COURT ON 17/DEC/19.
	22.58% <sup>5</sup>	1,474 <sup>4</sup>	DEFINE THE SALES MODEL TO MAXIMIZE THE VALUE OF THE CURRENT OWNERSHIP INTEREST.
	22.58%	600 <sup>2</sup>	SETTLEMENT DIFFICULTY WITH OTHER SHAREHOLDERS TO SELL CONTROL. SALE OF A MINORITY INTEREST SHOWS IT IS DIFFICULT TO CARRY OUT AND THERE ARE FEW INTERESTED PLAYERS.
	15.51%	1,083 <sup>2</sup>	STRUCTURING OF THE SALES MODEL.
	49% ON 100% PN	1,655 <sup>2</sup>	SETTLEMENT DIFFICULTY WITH OTHER SHAREHOLDERS TO SELL CONTROL. SALE OF A MINORITY INTEREST SHOWS IT IS DIFFICULT TO CARRY OUT AND THERE ARE FEW INTERESTED PLAYERS.
Cachoeirão, Pipoca, Paracambi	49%	131 <sup>2</sup>	AVAILABLE FOR SALE, NO NEGOTIATIONS STARTED.

- (1) Actual value of the operation.  
(2) Amounts recorded with the Company. They do not amount to a guarantee or expectation of the actual sale value of the assets.  
(3) Amount related to the prepayment of receivables due by Renova.  
(4) Market value (B3) on 17/Dec/19: R\$21.50/share.

**Figure 6:** Divestiture Program: Accomplished x Goal

Cemig continues to focus on implementing its divestiture program in 2020 through divestment efforts capable of generating funds to reduce the Company's leverage.

## 2.3

# INNOVATION AND TECHNOLOGICAL DEVELOPMENT



**[103-2:203; 103-3:203]** The development of innovations in products and processes is a fundamental part of Cemig's activities. The commitment to identify and deploy new technologies allows for the creation of goods and services capable of bringing benefits to society as a whole, such as increasing the availability of assets, reducing the time to serve the final customer, increasing personal and system security, and the building of new tools and a

more efficient infrastructure adapted to different realities. Cemig understands that it has an important role in the technological development of solutions for the generation, transmission, and distribution of electric energy.

There are challenges and opportunities for the sector that are also due to global changes, and which demand solutions for investments in digitization, decarbonization, and decentralization.

It is with this mindset that Cemig currently works, aiming at ensuring the future, investing in the development of alternative generation technologies geared toward efficiency: the Energy Efficiency Program has been an important innovation vector of the Company (details on it can be found in the Corporate Citizenship and Social Investments item).

Investments in research on energy alternatives are essential for Cemig to keep its standing in the Dow Jones Sustainability Index (DJSI), in addition to acting directly and decisively in boosting some processes that make up the Company's corporate strategic map. As Cemig sees it, this topic covers the whole energy chain, including transportation, transformation, technological routes, supplying and storage, and end-use of energy.

As they are elements that make up the electricity generation process, the topics of alternative sources, generation technologies, distributed generation, smart grids, electric vehicles, energy efficiency, and the best use of traditional energy resources also make up what Cemig considers as energy alternatives.

Cemig annually invests part of its net operating revenue in Research and Development in the electric energy sector. Thus, Cemig has a Research and Technological Development (R&D) Program, which has been in force since the 1990s and includes (i) the development of incremental technology projects that are responsible for generating gains in operational efficiency and cost reductions, and (ii) initiatives of a radical or disruptive nature, capable of supplying radically new products.

As a result of this program, new methodologies, processes, software, materials, devices, and equipment are produced that are geared at improving the electrical system and the operating process, in addition to increasing personal and property safety.

Cemig's R&D consists of a range of projects on different topics and lines of research. Technical tender documents are published annually presenting Cemig's requirements for attracting proposals. The proposals received are assessed by the Company's technical staff

through technological forums. These proposals are transformed into projects developed by an extensive network of partners, yielding from prototypes of cutting-edge technologies to the licensing of products with marketable potential.

The tender notice for investment in R&D launched in 2018, called Cemig 4.0<sup>36</sup>, included topics such as user experience, data intelligence, distributed generation, and others, as priorities for the Company's investments. That tender notice included 8 demands, one of which had no project selected. Of the 7 approved projects, 6 were contracted in 2019 and one ended up being discontinued (D655 - PÍTIA - Intelligent Interactive Adaptive

<sup>36</sup> - Available at: [https://www.Cemig.com.br/pt-br/A\\_Cemig\\_e\\_o\\_Futuro/sustentabilidade/Documents/chamada\\_publica\\_Cemig40/plano\\_Cemig40.pdf](https://www.Cemig.com.br/pt-br/A_Cemig_e_o_Futuro/sustentabilidade/Documents/chamada_publica_Cemig40/plano_Cemig40.pdf)

Thematic Platform). The contracted projects have an implementation period of 24 months, with the possibility of being extended for another 12 months. The table below shows the 6 projects being developed and the total funds invested in 2019:

Project Number	Title	Objective	Project Total Amount	Amount Paid in 2019
D0649	Distributed Energy Resource Management System - Sigred	A methodology for the systematic integration of the Distributed Energy Resources (RED) scattered along Cemig's power network to the Distribution Operation Center (COD), taking into account the relevant technical and operational aspects.	R\$ 7,949,818.33	R\$ 3,756,908.65
D0650	Artificial Intelligence Applied to Customer Relationships.	An integrated solution (intelligent virtual assistant using artificial intelligence, big data, and chatbot) to all service channels (virtual, telephone, and face-to-face) in the form of an Omnichannel, thus providing a positive customer experience with the company.	R\$ 4,469,591.04	R\$ 956,194.32
GT0651	Cemig Geração e Transmissão Asset Management Platform	Asset management platform to help Cemig GT's Integrated Intelligent Asset Management System, supported by a methodology, basic infrastructure, and an intelligent toolset. The platform software will meet the criteria of functionality, scalability and modularity.	R\$ 7,818,061.39	R\$ 1,984,625.96
D0652	COD of the Future - Hyper-vision platform for integrated space-time situational awareness based on Artificial Intelligence for Distribution Operation	Deployment of software based on the concepts of time-oriented and hyper-vision visual analytics, responsible for providing situational awareness to operators via a graphic interface.	R\$ 6,870,164.09	R\$ 2,978,818.09
D0653	Intelligent Supply Chain Management.	Development of an integrated solution built from the methods and methodologies achieved by the project, with the following modules relating to suppliers: Prospection, Development, Training, Register, Selection, Service level), Monitoring and performance, Support, awards and penalties.	R\$ 5,510,784.55	R\$ 1,815,349.06
D0654	Integrated Distribution Asset Center	Diagnosis of maturity in asset management, skills development, design of, and guidelines for an Integrated Asset Management Center and a pilot platform using artificial intelligence techniques to support decision making at the operational, tactical, and strategic levels.	R\$ 9,815,562.05	R\$ 5,992,052.47

Table 7: R&D projects ongoing in 2019

In 2019, 2 new calls for tenders were started to receive proposals geared at suggesting innovative solutions for electric mobility and a device for individual notification in case of dams emergencies. For these solutions, Cemig seeks to establish partnerships with universities, companies and research institutions in developing technologies that have a synergy with the interests of the Company, the energy sector, and society as a whole. The table below lists the selected projects:

Project Number	Title	Expected Results	Project Amount	Status in 2019
GT656 (Notification)	Individual Notification Device (DIN) in case of Dams Emergencies	Individual Notification Device (DIN) intended to alert residents of risk areas in the event of emergency events, including the deployment of a pilot project in a small-sized and a large-sized region, last RF mile, gateways, backhaul, network management, and web application.	R\$ 5,573,235.80	Under contracting process. R\$0.00 Paid in 2019
R\$0.00 Paid in 2019				
D724 (Mobility)	Electric Vehicle with Regular Fast Charges (eCaRR) in BRTs: pilot project for technology demonstration and assessment	3 adapted mini electric buses; fast-charging station; an experimental line in operation; study on the impact of the implementation of the eCaRR system on public transport in Belo Horizonte along the BRT lanes; proposal for nationalization and local production of the developed technology.	R\$ 12,432,255.34	Under contracting process. R\$0.00 Paid in 2019
R\$0.00 Paid in 2019				
D725 (Mobility)	Implementation of a System for Monitoring and Managing Charging of Electric Vehicles in the State of Minas Gerais	Installation of electrophores and development of applications for management and monitoring of concessionaire-charging station-customer information. Normative, regulatory, and impact studies on the power grid are also provided for, regarding the deployment of charging stations.	R\$ 4,296,269.07	Under contracting process. R\$0.00 Paid in 2019
R\$0.00 Paid in 2019				
GT726 (Mobility)	Plug-in hybrid vehicle for operation with Ethanol, NVG, biomethane and gasoline	Plug-in hybrid vehicle configured with: Thermal engine to operate with ethanol, biomethane, NVG and gasoline; electric drive system battery charger; a system for sending power to the network or battery bank; photovoltaic system; regenerative system on the axle.	R\$ 13,115,965.53	Under contracting process. R\$0.00 Paid in 2019
R\$0.00 Paid in 2019				

Table 8 : R&D projects, 2019 tender notices

As a measure of its efforts in innovation, the Company has an indicator called INOV, which translates as the relationship between the total investments<sup>37</sup> made in R&D and innovation efforts in the current year and the net operating revenue for the same year. This resource is applied to actions in the various areas of the Company<sup>38</sup>, with the purpose of creating value for the business as a whole, involving innovations in different perspectives, ranging from innovation in products and processes to organizational and marketing innovations.

**37** - Cemig's expenditures accounted for in the calculation of the indicator include R&D projects, P65 projects (management department responsible for Technological Development and Innovation), and special projects, currently the Peixe Vivo Program.

**38** - Electric Sector GRI: EU-08.

Since 2006, Cemig has started leveraging Lei do Bem (Law No. 11,196/05) in its favor, which makes it possible to deduct the amount corresponding to the sum of expenditures on technological research and innovation projects from income tax due. For projects to be considered for this benefit, Cemig must name the ones responsible for gains in quality, productivity and that produce incremental improvements to its processes. Since it started complying with the law, Cemig has obtained R\$ 90.36 million in taxes due deductions. In 2019, R\$ 6.39 were deducted.

The target for 2019 was for this indicator to amount to 0.3%. The result exceeded the target and indicated that 0.7% of the year's net revenue was allocated to research, development, and innovation. This result follows the increases seen in recent years.

INDEX OF EXPENDITURES IN INNOVATION - INOV					
2019 - P65 realized	2019 - R&D realized	2019 - Special Projects realized	Total innovation expenditures	NOI - Net Operating Income	INOV
R\$ 16,591,968.54	R\$ 96,549,339.41	R\$ 1,662,247.98	R\$ 114,803,555.93	R\$ 16,283,463,872.50	0.705%

Table 3: INOV Indicator - Expenditure on Innovation - 2019

## MOVIMENTA PROGRAM

Devised in 2018, the Movimenta Program is an ongoing program to encourage the culture of innovation by the registering of projects with the potential to create value for Cemig, presented by the Company's employees themselves. Its objective is to stimulate the participation of employees in a search for solutions aimed at generating revenue, reducing costs, increasing quality, and improving levels of corporate sustainability, without prejudice to returns from the economic and financial sides. According to Cemig D's director Ronaldo Gomes de Abreu, nobody knows Cemig more than its employees themselves; therefore, the program is an opportunity for all of them to participate in the search for several solutions.

The results have been outstanding. The projects presented by the teams include changes in procedures and suggest new work methods that generate revenues and reduce costs for the company, always taking into account both quality and corporate sustainability. In recognition of the project's contributions, the employees who stood out in the Movimenta 2019 Program were honored by the board at a ceremony held in the capital city of Belo Horizonte. The second edition of the program had 96 projects registered, 18 of which were approved in all phases of the public tender.

One of the highlights among the projects approved in the Movimenta Program in 2019, is the project by Cemig's Electrical System Expansion Project Engineer Wagner Ursine, who developed a software that automates feasibility study for connections of distributed mini-generations throughout the network Company. As a result, it was possible to save over R\$ 80 thousand in expenses, with an increase in productivity of more than 1,500% when carrying out these feasibility studies. In 2018, before the deploying of the project, 100 studies were carried out, while in 2019, with the software already in operation, 1,537 were carried out.

## STRATEGIC TECHNOLOGY MANAGEMENT

To manage all the processes that promote innovations in products and processes within the Company's technical areas, and in order to keep the Company capable of speedily respond to changes in the market, the scenario, etc., a proprietary Strategic Technology Management methodology - GET - was developed <sup>39</sup>, which also enables organizational and marketing innovations.

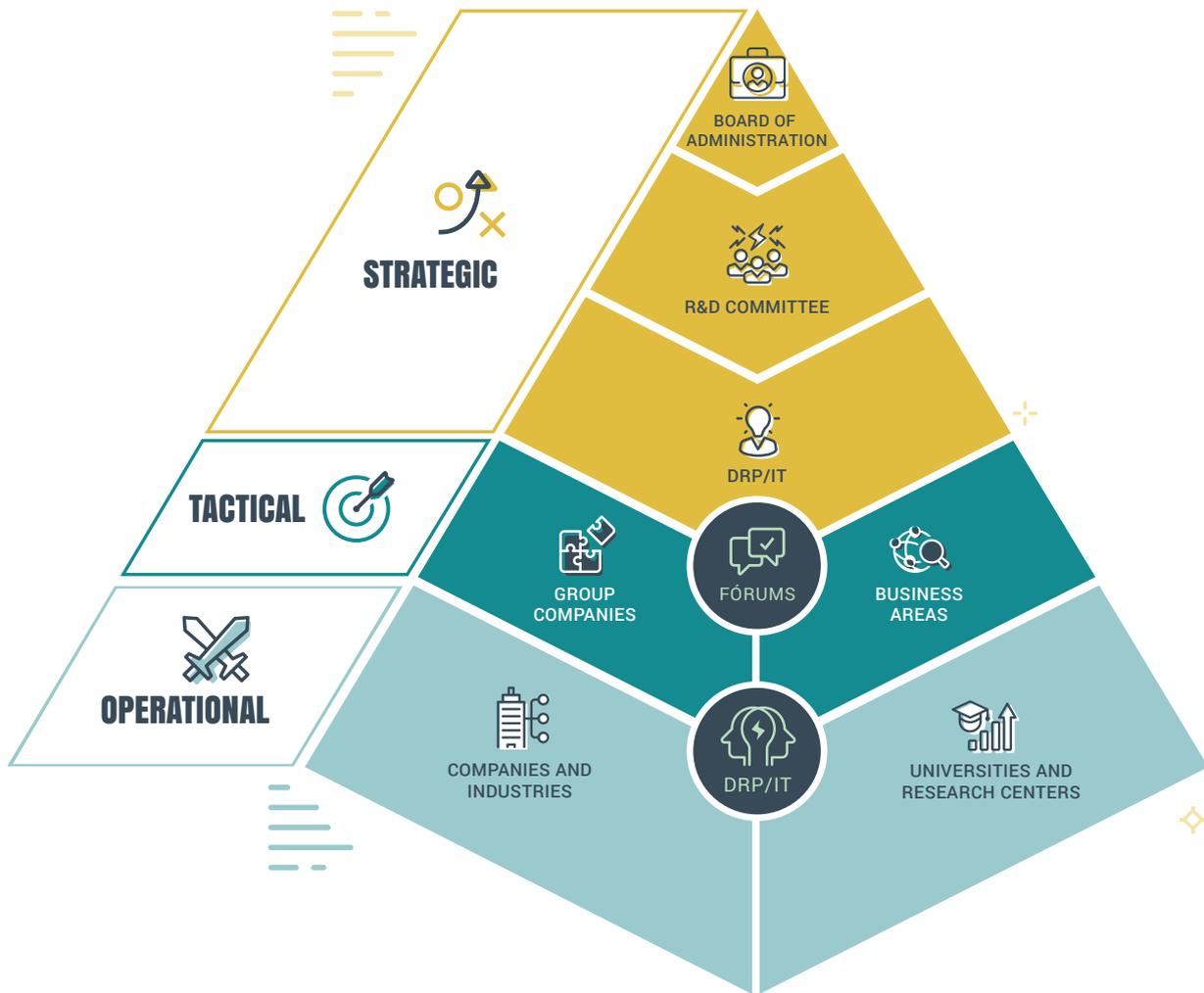
**39** - In order to manage the program, and aware that innovation and technology are strategic inputs that can enable business development and add value to its products and services, Cemig implemented the Strategic Technology Management - GET methodology in 1999.

Using the GET methodology, Cemig seeks to ensure the use of appropriate technologies, as well as obtaining streamlined responses to changes in scenarios, thus readying itself for the frequent changes in an increasingly dynamic and competitive market. It should be noted that GET technological strategies are in line with Cemig's business guidelines.

In this process, the Cemig employs some tools that include:

- Technological prospecting and scenario analysis;
- Identification of threats and opportunities;
- Strengths and weaknesses of the business;
- Deployment of guidelines coming from the corporate strategic planning process;
- Identification of technological actions and projects, including research and development and innovation programs of interest to businesses;
- Improvement and dissemination of the methodology and technical support to businesses and companies.

The GET methodology intends to be applied at the strategic, tactical, and operational levels. At the strategic level, technological policies are defined, and technology plans, budgets, projects, and strategic initiatives aimed at technological-scientific development and innovation are approved.



**Figura 7:** GET– Strategic Technology Management

The Technology Strategic Management always puts establishing technology-strategic partnerships foremost, which allow for the development and formation of centers for excellence in Minas Gerais through alliances between the Company and universities, other companies in the sector, research centers, the community, etc.

Through the centers of excellence, we seek to share resources, improve the use of existing skills and infrastructure, internalize best technological practices and eliminate waste and duplication, in addition to fostering the creation of industrial centers and technological services in the region.

In 2019, already-existing partnerships were kept in place that integrated the Company with major universities, research centers, and Brazilian technology-based companies in an ongoing search for relevant innovations for the sector.

Cemig coordinates the protection of its intellectual property, analyzing the feasibility and aspects of obtaining privilege on inventions, brands, software, Internet domains, etc., guiding applicants in the preparation and monitoring of requests for privilege, and promoting the custody and disclosure of charters, records, and other intellectual property deeds.

During 2019, through the Trademarks & Patents Office, Cemig filed for 1 new patent application and had 2 patents granted. In total, the Cemig Group has 21 patents granted and 51 applications are in progress.

## 2.4 NEW BUSINESSES

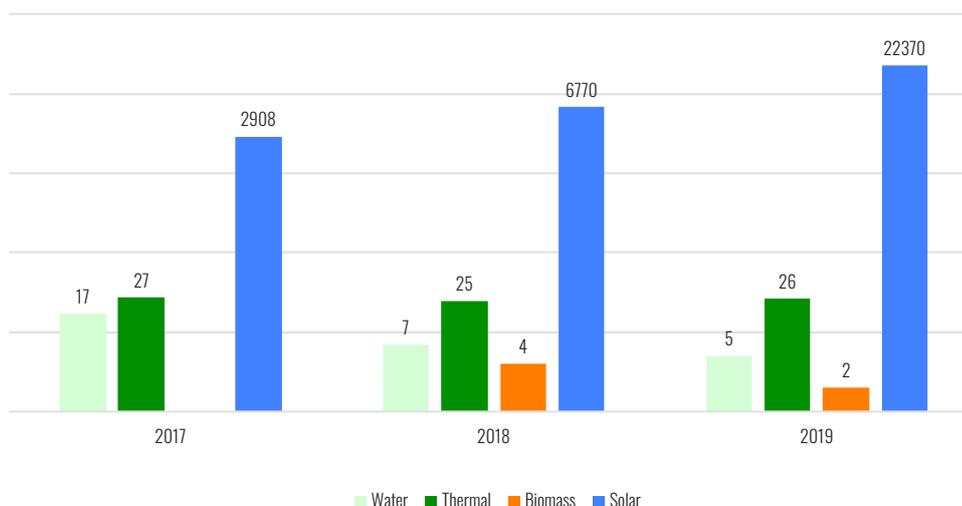


Since 2012, when Aneel established the Electricity Compensation System, Cemig has been leading the market for distributed generation connections in Brazil. In the period between the publication of Resolution 482, in 2012, and December 2019, 33,880 generating units have already been connected by the Company, 33,745 (99.6%) of which are photovoltaic solar sources, 97 are thermal sources (biogas), 31 are hydraulic sources, and 7 are cogeneration ones (biomass), totaling an installed capacity of 407.4 MW with Distributed Generation. In the domestic scenario, the connections made by Cemig amount to 20.1% of all distributed generation connections in Brazil, and the 407.4 MW installed by Cemig represent 19.2% of the total 2,120.8 MW installed in the Brazilian territory by the end of the period covered in this report.

Distributed Generation (DG) is the possibility to generate energy next to or near the consumer, including allowing them to generate their own energy from renewable sources. Thus, the emphasis is on decentralizing electricity generation, allowing savings in terms of transmission and reducing technical losses. This system is regulated by Aneel and allows consumers who produce their own energy to inject their surplus into the utility's network and later be compensated with the consumption of power.

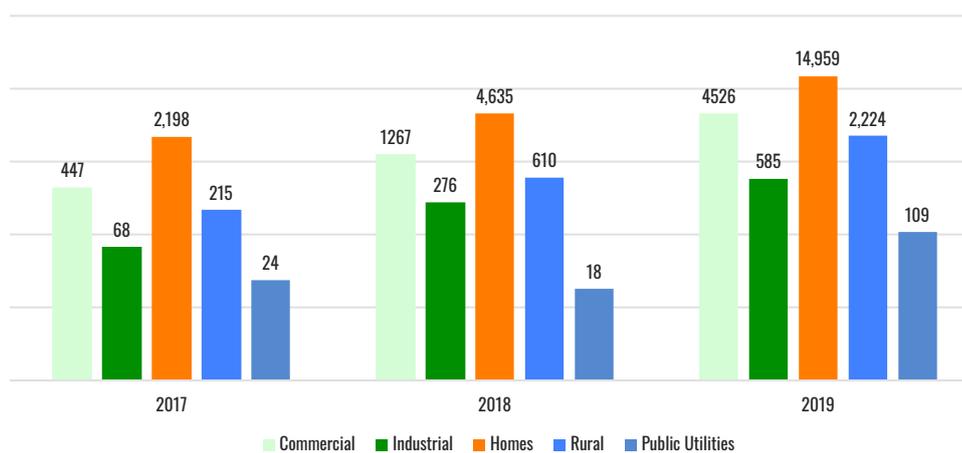
In 2019, 22,403 new installations were carried out by the Company, which practically tripled the total number of utility connections in Cemig's concession area in just one year. This number represents an increase of 294% against the total installations carried out until 2018. If we analyze the installations carried out in 2019 in comparison to those carried out in 2018, we have a 329.1% increase. The connection profile at GD is predominantly low voltage - approximately 98.7% - and by photovoltaic generation. The profile of progress between 2016 and 2019 - stratified by connected generating units, consumption classes and types of sources - is displayed in the charts below, with the aforementioned predominance of photovoltaic generation and residential generation:

**Number of connections by Generation Source**



**Chart 1:**  
Number of connections by source type

**Number of New Connections by Consumer Class**



**Chart 2:**  
Number of connections by consumer class

Throughout 2019, Cemig's operating model in the distributed mini-generation market was perfected, thus becoming another of the possible several possible solutions for electricity customers.

From this expansion of the product portfolio to meet energy solutions, Cemig Soluções Inteligentes em Energia – Cemig SIM - was launched in October 2019 through the merger of two of its subsidiaries - Cemig GD and Efficientia.

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 S!M

Cemig SIM focuses on technology, innovation, and sustainability. The company was launched in 2019 to operate in the shared energy market through distributed generation based on a new model of partnerships, aiming at participating in new photovoltaic solar generation projects, with the objective of expanding its installed capacity to up to 142 MW by 2021.

The discount model offered by Cemig SIM to its customers is realized through the distributed generation modality, which is regulated by the Brazilian Electricity Regulatory Agency - Aneel. This type of generation allows consumers to produce their own energy, and when they hire Cemig SIM, they begin to obtain energy credits from the solar farms that are being built - and from some already in operation - in 17 cities in the north and northeast of Minas Gerais, where sunshine levels are high.

The Cemig SIM Solar Community is a consortium model that allows customers to book for a batch of electricity generation from the solar farm that will be proportional to the average consumption of their consumer unit(s). This way, the customers will have energy credits generated according to their percentage share in the consortium or in Cemig SIM's Solar Community. As part of the Cemig SIM Solar Community, the consumer will have the advantages of using a renewable source of energy and reducing electricity costs by receiving a discount on its tariffs and making your company much more sustainable. Cemig SIM aims at being the largest distributed generation player in the state.



Cemig SIM builds solar farms -an infrastructure of photovoltaic panels that capture sunlight and transform it into electricity - in the regions with the highest levels of sunshine in Minas Gerais.



Companies can contract a lot from that farm. All the energy generated passes through Cemig's distribution grid before reaching the contracting party's address.



That energy generates a discount on the monthly consumption of the contracting company, causing savings in the energy tariff. The contracted and unused power is accumulated for use in the coming months.

The digital platform was designed to facilitate the interaction of potential customers with Cemig S!M's portfolio of products and services, thus speeding up the gathering of the information required for the drafting of commercial proposals in a transparent, safe and efficient way.

With that in mind, in October 2019, Cemig S!M made its first sale entirely through its website at Cemigsim.com.br. The contract signing process was completed entirely within the Company's digital platform, in a streamlined and simple way, about two weeks after the launch of the brand.

This is a significant alternative for energy production that is in line with global trends, especially with the distributed generation modality, which underwent a public inquiry process for the restructuring of Aneel Normative Resolution 482/2012 throughout 2019.

## 2.5 GRANTS

One of Cemig's most valuable intangible assets is its concessions to exploit resources and infrastructure in the areas of generation, transmission and distribution of electricity and gas. The Cemig Group's activities are supervised and regulated by Aneel, through concession contracts from the Federal Government.

Concession contracts grant Cemig and its subsidiaries the right to operate electricity and natural gas services in the territories covered by them. In the electricity generation side, concessions are granted on an individual plant basis. In the distribution of electricity and gas side, the concessions are granted on a municipality basis, where the utility company then has a monopoly on the service.

In 2019, the Third Addendum to the Gasmig Concession Agreement was signed, extending the term of the concession until 2053. There were no concessions ending in 2019. <sup>40</sup>

According to the transmission concession contracts, Cemig is authorized to charge the tariff for the use of the transmission system - TUST. Tariffs are adjusted annually on the same date as the adjustments in the Permitted Annual Revenues - RAP of transmission concessionaires. This tariff-charging period begins on July 1 of the year when tariffs are published and extends to June 30 of the following year.

40 - For more information on Cemig's current concessions, go to: <http://www.Cemig.com.br/RAS/relatorio2018/Paginas/estrategia.html#concessoes>

The service for conveying large amounts of electricity over long distances is done via a network of transmission lines and substations with a voltage equal to or greater than 230 kV, called the Basic Network.

Any agent in the electricity sector that produces or consumes electricity is entitled to use this Basic Network, subject to certain technical and legal requirements. This is the so-called Free Access, guaranteed by law and backed-up by Aneel.

Payment for the use of transmission also applies to the generation of Itaipu Binacional. However, due to the legal characteristics of that plant, the corresponding charges are taken on by the distribution concessionaires that hold the respective shares of the plant power.

For transmission concessions, the portion of the assets that will not be amortized during the concession is entered as a Financial Asset, as there is an unconditional right to receive cash or another Financial Asset directly from the granting authority at the end of the agreement term.

Cemig D has a concession (from Aneel) to exploit the electricity distribution activity in most of the state of Minas Gerais maturing in December 2045.

As determined by the concession agreement, all assets and facilities that are linked to the provision of the electricity distribution service and that have been executed by the concessionaire are considered reversible and are part of the estate of the respective concession. These assets will revert to the granting authority upon contract termination. Then assessments and determination of the amount of indemnification due to the concessionaire will be carried out, without prejudice to the amounts and dates of incorporation to the electric system.

Cemig D does not have bonds for compensatory payments for the exploitation of distribution concessions. It is required to meet the quality

and investment mandates provided for in the concession agreements. Concession agreements and Brazilian law have a maximum price mechanism that allows for 3 types of tariff adjustments: **(i)** annual adjustment; **(ii)** periodic review; and **(iii)** extraordinary review.

Cemig D has the right to request an annual adjustment each year, which is intended to offset the effects of inflation on tariffs, and allows consumers to pass on certain changes in costs that are beyond Cemig D's control, such as the cost of electricity purchased and sector charges, including charges for the use of transmission and distribution facilities.

In addition, Aneel carries out a periodic tariff review every 5 years, to identify changes in costs of Cemig D as well as establish a factor based on scale gains, applied in readjustments of annual fees to share such gains with Cemig D consumers. The last review occurred in 2018.<sup>41</sup>

**41** -In 2018, the Annual Tariff Readjustment of Cemig D was carried out; it will be valid until May 27, 2020. Available at: <https://www2.aneel.gov.br/cedoc/reh20192550ti.pdf>

Cemig D is also entitled to request an extraordinary review of tariffs in case unforeseeable events significantly altering the economic and financial balance of the concession. The periodic review and the extraordinary review are, to a certain degree, subject to Aneel's discretion, although there are pre-established rules for each review cycle. When Cemig D requests an annual tariff adjustment, it has to prove the financial impact resulting from these events on its operations.

According to the distribution concession agreements, Cemig D is authorized to charge its consumers a tariff for the supplying of energy, consisting of 2 components: (i) a portion related to the costs of electricity purchased for resale, charges for the use of the basic transmission network and charges for the use of the non-manageable energy distribution system ("Portion A Costs"); and (ii) a portion of operating costs ("Portion B Costs").

Concessions for natural gas distribution are state-owned and, in Minas Gerais, natural gas tariffs are set by the regulatory body, the State Secretariat for Economic Development, on a market segment basis. Tariffs consist of a gas cost portion and a gas distribution portion. Each quarter, tariffs are readjusted to pass on the cost of gas, and once a year to update the portion intended to cover the costs related to the provision of the distribution service - return on invested capital, and to cover all operating, commercial and administrative expenses the Concessionaire had to make.

In addition to these adjustments, in April 2015, the Economic Development Secretariat sent the Official Letter SEDE/GAB/No. 303/2014 to subsidiary Gasmig notifying on the schedule for the 1st cycle of Tariff Review, which extended down to the second half of 2017. These reviews should take place every 5 years, from the end of this 1st cycle, with the objective of assessing the variations in the Company costs and adjusting the tariffs. So, the next review is scheduled for 2022. The Concession Agreement also provides for the possibility of an extraordinary revision of tariffs, if there are reasons that put the Concession's economic and financial balance at risk.

On December 26, 2014, the "Second Amendment to the Concession Agreement" was signed between Gasmig and the Government of the State of Minas Gerais, extending the concession period for Gasmig to exploit commercial, institutional and residential industrial piped gas services in Minas Gerais for another 30 years, with maturity date moving from January 10, 2023 to January 10, 2053.

## 2.6

# SECTORAL ASSOCIATIONS



**[102-13]** The energy sector is a benchmark for good performance of human activities in organized societies. Sectors such as electricity generation, transmission and distribution and the need for complementarity and synergy among sector agents stimulate the organization of sectoral associations, which constantly exchange experiences, disseminating best practices and establishing partnerships to solve problems. To foster cooperation and collaboration, Cemig participates in the major Brazilian associations in the sector.

Below, we highlight the activities and actions developed by Cemig with the entities it is associated with:

## BRAZILIAN ASSOCIATION OF ELECTRICITY DISTRIBUTORS - ABRADÉE

The main objectives of the Association that make Cemig's membership strategic are:

- The judicial or extrajudicial representation of its members for the defense of their interests;
- The provision of support services to members in the technical, commercial, economic, financial, legal, political and institutional areas;
- The fostering of mutual collaboration and assistance among members;
- The promoting and conducting of studies and research of interest to members;
- The preparation of studies and proposals for the solution of problems in collaboration with the government under the umbrella of issues related to the activities of the members;
- The promotion and holding of courses, seminars and the like, as well as the publication of journals and information of interest to members.

Cemig, through its Commercialization Director Ronaldo Gomes, and his deputy Alexandre

Gomes Peixoto, is a member of the Association's Board of Directors. In addition to this presence in the governance structure of the association, Cemig has several employees active in different Association Working Groups, with an emphasis on the Energy Efficiency Working Group and the Socio-Environmental Responsibility Support Group.

In the past few years, connections of distributed micro- and mini-generation (GD) have exponentially increased. This makes discussion around Normative Resolution No. 482/2012 even more relevant, involving issues like tariff impacts on consumers who do not have GD and the actual benefits this modality brings in to the power system. Currently, this topic is so relevant that it is being discussed with several sectors, including the political one. This, aiming at defending a fair standing for both power distributors and consumers, Cemig has been following up and supporting Abradee in its frequent efforts with Aneel and MME (Ministry of Mines and Energy).

Like the other member companies, Cemig pays an annual fee to Abradee. This fee is determined at a general meeting of the body, as provided for in its articles of incorporation. In 2019 the annual fee amount was R\$ 340,221.72. Besides the annuity, in 2019, members had to pay R\$ 154,259.31 relating to amounts paid for hiring of consulting services and/or law firms.

## BRAZILIAN ASSOCIATION OF ELECTRICITY GENERATING COMPANIES - ABRAGE

The main objectives of the Association that make Cemig's membership strategic are:

- The exchange of technical, commercial, financial and legal information regarding electric power generation activities;
- The drafting of analyzes and studies of common interest;
- The signing of technical cooperation and information exchange agreements and covenants with domestic and international public and private entities;
- The preparation and defense of proposals to solve common problems.

In 2019, Cemig conducted a workshop for updating on the new normative resolution 846/2019, which laid down new criteria for penalties and sanctions for sector agents when the current regulations are not complied with. It made contributions to MME regarding the Modernization of the Electric Sector project, with the new supply criteria, the separation of ballast and energy, and the opening of the free energy market standing out, among others. Cemig also actively participated in discussions involving the new regulation on dam safety, in addition to monitoring the inspection campaign that took place nationwide.

Like the other member companies, Cemig pays an annual fee to Abrace. This fee is determined at a general meeting of the body, as provided for in its articles of incorporation. In 2019 the annual fee amount was R\$ 206,419.24. Besides the annual tuition, there were no other payments in 2019 for investments in partnerships with that Association.

## BRAZILIAN ASSOCIATION OF INDEPENDENT ELECTRIC ENERGY PRODUCERS - APINE

The main objectives of the Association that make Cemig's membership strategic are:

- Promote the defense of the interests of the electricity generation segment, especially with regard to independent producers and similar generating utilities, advocating for the expansion of their market footprint and the preservation of their profitability;
- Cooperate with government authorities and domestic and international bodies and institutions as a technical and advisory body in the study of and solution for problems related to the activities of its members, in the preservation of free competition in offers, and in the preservation of the economic order of the electricity market.

In 2019, Cemig acted intensively in the treatment of the allocation of non-hydrological risks to the Energy Reallocation Mechanism, with the discussion and consolidation of the proposal

formalized by Apine, mainly with regard to issues related to the wording of Art. 2 of Law 13,203/2015 in meetings with the Ministry of Mines and Energy - MME, the Energy Research Company - EPE and the Brazilian Electricity Regulatory Agency - Aneel. It worked with Aneel and the MME to advance Distributed Generation, looking for a sustainable alternative, with an appropriate transition rule and disregard of non-hydrological factors and structural rebalancing of the MRE to improve the Energy Reallocation Mechanism (MRE).

Like the other member companies, Cemig pays an annual fee to Apine. This fee is determined at a general meeting of the body, as provided for in its articles of incorporation. In 2019 the annual fee amount was R\$ 180,250.32. Besides the annuity, in 2019, members had to pay R\$ 132,763.57 relating to amounts paid for hiring of consulting services and/or law firms.

## BRAZILIAN ASSOCIATION OF ELECTRICITY TRANSMISSION COMPANIES - ABRATE

The main objectives of the Association that make Cemig's membership strategic are:

- Represent legitimate interests and add value to member companies, with a proactive approach to ensuring the sustainability, development and attractiveness of the electricity transmission business;
- To be acknowledged as a leading institutional agent in promoting the sustainability, development and attractiveness of the electricity transmission sector.

In 2019, Cemig participated in strategic activities of the Transmission Business coordinated by Abrate and involving negotiations, including some requiring personal meetings at the Ministry of Mines and Energy, the Brazilian Electricity Regulatory Agency – Aneel and the National Power System Operator – ONS.

Like the other member companies, Cemig pays an annual fee to Abrate. This fee is determined at a general meeting of the body, as provided for in its articles of incorporation. In 2019 the annual fee amount was R\$ 173,862.76. Besides the annual tuition, there were no other payments in 2019 for investments in partnerships with that Association.

## BRAZILIAN ASSOCIATION OF THERMOELECTRIC GENERATING COMPANIES - ABRAGET

The main objectives of the Association that make Cemig's membership strategic are:

- The defense of members' rights, interests and aspirations through representation before government authorities and any other bodies and institutions;
- The judicial or extrajudicial representation of its members for the defense of their interests;
- Studying, researching, monitoring and influencing matters directly linked to the interests of the members, especially regarding institutional and regulatory issues involving the thermal production of electric energy; issues related to the expansion planning of the electric system, especially regarding the consolidation of the participation of thermoelectric plants in the Brazilian energy matrix; and issues related to the operation of the Brazilian electrical system, especially regarding the movement of the generation from thermoelectric plants.

In 2019, Cemig supported the study of the integration of electrical and natural gas systems in Brazil through the insertion of natural gas thermal plants in the Brazilian electrical matrix, seeking to determine the optimal expansion matrix, without prejudice to the relationship between the expansion of renewable sources and the power necessary for the electrical and energy security of the National Interconnected System.

Like the other member companies, Cemig pays an annual fee to Abraget. This fee is determined at a general meeting of the body, as provided for in its articles of incorporation. In 2019 the annual fee amount was R\$ 122,343.08. Besides the annual tuition, there were no other payments in 2019 for investments in partnerships with that Association.

## BRAZILIAN ASSOCIATION OF CLEAN ENERGY GENERATION - ABRAGEL

The main objectives of the Association that make Cemig's membership strategic are:

- Foster the union of small and medium electric energy producers, companies, entities and associations interested in this market, representing their members before the public authorities, including the Judiciary Branch, and domestic and international bodies and institutions, fighting for their rights, interests and aspirations;
- Cooperate with government authorities and domestic and international bodies and institutions as a technical and advisory body in the study of and solution for problems related to the activities of its members.

In 2019, among other activities carried out with the Association, the hiring of a specialized technical consultancy to prepare a new strategic plan for Abragel stood out. This plan aimed at guiding the association actions towards the sustainable and competitive development of the Small Hydroelectric Power Plants business in Brazil.

Like the other member companies, Cemig pays an annual fee to Abragel. This fee is determined at a general meeting of the body, as provided for in its articles of incorporation. In 2019 the annual fee amount was R\$ 82,800. Besides the annuity, in 2019 members had to pay R\$ 49,348.62 relating to amounts for hiring of consulting services.

## BRAZILIAN ASSOCIATION OF ELECTRICITY TRADERS - ABRACEEL

The main objectives of the Association that make Cemig's membership strategic are:

- Fight for free market competition as an instrument to promote efficiency and security of supply in the areas of electricity, ethanol and natural gas, as well as stimulating the growth of carbon credit negotiations;
- Foster union among the members, representing them before government authorities, domestic and international bodies and institutions, fighting for their rights, interests and aspirations;

- Cooperate with government authorities and domestic and international institutions as a technical and advisory body capable of entering into agreements or covenants that are of interest to serve its corporate purpose.

Cemig currently has no representation in the governance structure of the association, but it does participate in the Technical Group, which is responsible for discussing, proposing and sending contributions to the public hearings at MME/Aneel. The topics discussed in this WG guide

the strategic participation of the association's executives in talks with the government in its various levels.

In 2019, Cemig took part in projects to modernize the regulation of the electricity sector through debates and actions for adjustments in the wording of PLS (Supplemental Bill) 232/16 and PL (Bill) 1917/15 and participation in the study fronts of the Implementation Committee for modernization of the electric power sector, from the MME, especially regarding Price Formation, Ballast and Energy Separation, and Market Opening. It also worked on the bill to settle delinquency in the short-term market of CCEE (Chamber for Electric Energy Trade), participating in the discussions for adjustments in the wording of PL 3975/2019, which deals with renegotiation of hydrological risk.

Like the other member companies, Cemig pays and annual fee to Abraceel. This fee is determined at a general meeting of the body, as provided for in its articles of incorporation. In 2019 the annual fee amount was R\$ 64,980.00. Besides the annual tuition, there was no other payment or investment

in 2019 made in partnership with that Association.

In 2019, Cemig disbursed a total of R\$ 1,048,999.12 for tuitions paid to associations. And it also made a total investment of R\$ 336,371.50 to hire technical and legal services with the help of Associations.

**[415-1]** One of the indirect consequences of the actions of the entities listed above is to contribute to the progress of regulation in the electricity sector. None of their articles of incorporation include a main and primary objective of influencing public policies. As it is, we stress that Cemig does not allocate resources to organizations whose main role is to create or influence public policies, nor does it contribute to political campaigns, political organizations or groups exempt from taxation whose function is to influence political campaigns or legislative activities, including chambers of commerce, trade boards and the like. It also does not register lobbyists or lobby groups.

### 3

## CORPORATE GOVERNANCE

**[102-18]** Cemig's corporate governance structure is based on transparency, equity and accountability. The Company is managed by Board of Directors and the Executive Board, and it also has a permanent Fiscal Council. All are governed by the Company's Articles of Incorporation and applicable law.

On March 25, 2019, during an Extraordinary Shareholder's Meeting - AGE, significant changes were approved in Cemig's Articles of Incorporation and in the Company's governance structure, aiming at maintaining the adoption of the best Corporate Governance practices.

The following changes stand out:

- The Board of Directors is now be made up of 9 members, in line with the Code of Best Corporate Governance Practices of the Brazilian Institute of Corporate Governance - IBGC and the Corporate Sustainability Assessment Manual of the Dow Jones Sustainability Index, also in compliance with Law No. 13,303<sup>42</sup>;

42 - Available at: [http://www.planalto.gov.br/ccivil\\_03/\\_ato2015-2018/2016/lei/13303.htm](http://www.planalto.gov.br/ccivil_03/_ato2015-2018/2016/lei/13303.htm)

- Elimination of the positions of deputies from the Board of Directors;

- Dismissal of the members of the Board of Directors and election of new members to fulfill the current 2-year term, that is, until the General Shareholders' Meeting of the Company to be held in 2020. The nine new members of the Board of Directors assumed their activities in 04/02/2019;
- Reduction in the structure of the Executive Board from 11 to 7 boards (including the Office of the CEO), aiming at greater operational efficiency;
- Approval and authorization of the incorporation of companies RME-Rio Minas Energia Participações S.A. and Luce Empreendimentos e Participações S.A. – LEPSA to Cemig Holding

The amendment to the articles of incorporation shows the commitment of the Company's shareholders (controlling/majority and minority shareholders) to improving the management process and Corporate Governance practices in order to ensure Cemig's sustainability and profitability in the long run.

## 3.1 GOVERNANCE MODEL AND MAIN PRACTICES



The main characteristic of Cemig's governance model is a clear definition of the roles and responsibilities of the Board of Directors and the Executive Board in the formulation, approval and execution of the policies and guidelines that relate to conducting the Company's business. The members of the Board of Directors, who are appointed by the General Shareholders' Meeting, elect their Chairman and Vice-Chairman and appoint Cemig's Executive Board. The structure and composition of the Board of Directors and the Executive Board are identical in wholly-owned subsidiaries Cemig D S.A. and Cemig GT S.A., with possible exceptions, so as to be approved by the Board of Directors.

The focus of the Company's governance has been the balance between the economic, financial, environmental and social aspects of Cemig's projects, in order to continuously contribute to sustainable development. This includes transparency about its management and performance geared at improving its relationship with shareholders, customers, employees, the society and other interested parties.

In order to support a well-structured corporate governance model, Cemig follows the good practices and recommendations of IBGC, fostering a relationship of trust and integrity with stakeholders. Besides that, since 2001 Cemig has followed Level 1 Corporate Governance practices from B3, the São Paulo stock exchange.

**[102-25]** Cemig has a formal practice to ensure the prevention and/or management of possible conflicts of interest. The Company, its shareholders, administrators and members of the Fiscal Council undertake to resolve, through arbitration preceded by mediation before the B3 Market Arbitration Chamber (CAM) or the FGV (Getulio Vargas Foundation) Mediation and Arbitration Chamber, any and all disputes or controversies that may arise among them. Besides decision-making processes, conflicts of interest are stated to the stakeholder publicly by means of official notices posted on the Company's website.

Opinions, suggestions and recommendations related to the meetings can be sent to the electronic address [ri@Cemig.com.br](mailto:ri@Cemig.com.br), or by going to the Company's Investor Relations website.

Another good governance practice carried out by Cemig is the holding of a General Shareholder's Meeting - AGO; in 2019, it was held on May 3, in accordance with the Articles of Incorporation and the current legislation. The Extraordinary Shareholder's Meetings - AGEs, in turn, can be held several times throughout the year, whenever necessary.

Both are convened at least 30 days in advance using Cemig Investor Relations website and the Securities and Exchange Commission - CV<sup>43</sup>, as well as in newspapers widely published throughout Brazil.

In addition to the AGO, 3 AGEs were held in 2019. Information on these Meetings and the summary of their main resolutions, entered in official minutes, can be found on the IR website<sup>44</sup>. In addition to the

AGE held on March 25, 2019, which approved, among other things, the reform of the articles of incorporation and the restructuring of the Board of Directors, two others were held, both on August 7, 2019.

The decision-making processes of Cemig's senior management are supported by the Technical Committees. At Cemig, the Advisory Committees to the Board of Directors are established by a specific decision of the Board of Directors, in order to analyze more in depth the matters they specialize in, issuing recommendations that should be included in the minutes of their meetings.

<sup>43</sup> - Available at: <http://www.cvm.gov.br/>  
<sup>44</sup> - Available at: <http://ri.cemig.com.br/governanca-corporativa/assembleias-e-reunioes/2019>

The Committees have no executive function or decision-making power, but they aim at ensuring objectivity, consistency and quality in the decision-making process, analyzing in depth the matters they specialize in and issuing recommendations for decisions or actions and expert opinions to the Board of Directors.

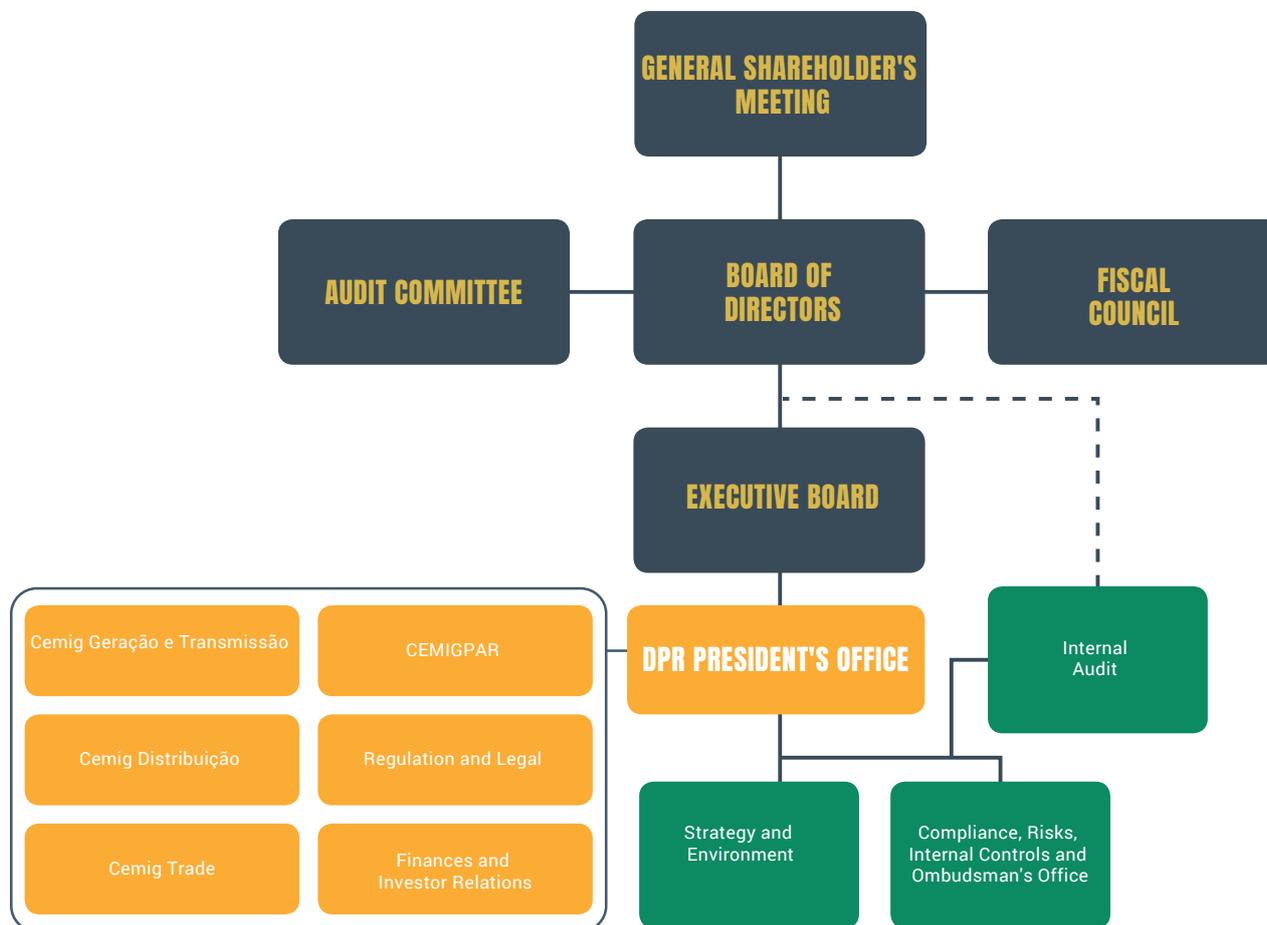


Figure 9: Cemig's Corporate Governance Structure

**[102-23]** It is important to stress that, according to Cemig's Articles of Incorporation, the positions of Chairman of the Board of Directors and Chief Executive Officer of the Company cannot be vested into the same person.

## REMUNERATION OF MEMBERS OF THE TOPMOST GOVERNANCE BODIES

**[102-35]** Pursuant the Articles of Incorporation, the global or individual amount of remuneration for the Board of Directors, the Executive Board and the Audit Committee will be set at the General Meeting, in accordance with the applicable legislation. Payment of sharing of any kind in the Company's profits to the members of the Audit Committee and the Board of Directors, with the exception of the employee representative member, is forbidden.

The following are items approved at the General Shareholders' Meeting, held on May 3, 2019, referring to remuneration.

- Allocation of the Annual Global Budget for the Remuneration of the Administrators, Fiscal Council Members, and Audit Committee, in the amount of up to R\$ 23,259,187.88 - noting that there will be no change in the amount of individual remuneration in effect - including health insurance for the Officers, to be contracted in the same standard as the Health Plan in effect for the Company's employees and variable remuneration. The CEO is entitled to R\$ 85,000.00 as monthly fees and the other Officers, individually, the amount of R\$ 67,000.00.
- Determine that the monthly remuneration of each of the members of the Board of Directors - excluding the board members who occupy the position of Directors and without prejudice to the condition related to the payment of director's fees<sup>45</sup> mentioned in item 3 below - is equivalent to 30% of the remuneration of the Chief Executive Officer for the Chairman of the Board of Directors, that is, R\$ 25,500.00 and 30% of what on average is paid to the Company's Director for the other members of the Board of Directors, that is, R\$ 20,590.90.
- Establish that the members of the Board of Directors shall receive eighty percent of the stipulated monthly remuneration, the remainder being divided into director's fees to be paid to the Directors attending the meetings. If there is more than one meeting in the month, the director's fee will be divided in proportion to the number of meetings held; should there be no meeting in the month, the Directors will be paid the total amount of the monthly compensation.

- Determine that the monthly remuneration of each active member of the Fiscal Council is equivalent to twenty percent of what is paid on average to the Company's Director, that is, R\$ 13,727.27; also, that the monthly remuneration of each deputy member of the Fiscal Council is equivalent to eighty percent of the monthly remuneration of active members, that is, R\$ 10,981.81; in both cases, benefits under the law are excluded.
- Determine that the monthly remuneration of each member of the Audit Committee is equivalent to R\$ 20,590.90.
- Determine that the members of the Board of Directors who simultaneously make up the Audit Committee will be paid exclusively the latter's remuneration.
- Establish that the Company will bear the expenses of lodging and transportation (within Brazilian territory) for the Directors, active and deputy members of the Audit Committee, and the members of the Audit Committee residing in cities other than that of the Company's headquarters and that are required to attend the meetings of these Boards and the Committee in order to perform their duties, or when invited by the Chief Executive Officer to meetings at the Company, as well as being entitled, as a cost allowance to the amount of R\$ 800.00 per trip.

**45** - "... Bonus for attending meetings of decision-making bodies of the 3 government levels - Federal, State and Municipal - paid to public servants attending meetings of collective decision-making bodies of centralized and autonomous municipal administration, which was established by Decree-Law 162 of 18/Nov/1969."

- Determine that the fees of the members of the Board of Directors, the Executive Board and the Audit Committee be paid on the same dates that the Company adopts for its employees.
- Determine that the variable remuneration of the Directors and the goals and performance indicators for their calculation are laid down by the Board of Directors, according to the Executive Officers' Remuneration Policy, limited to the amount of the global annual budget mentioned above.

Compared to 2018, there was a reduction of 29.5% in the amount of the Annual Global Budget for the Remuneration of Administrators, Fiscal Councilmembers, and the Audit Committee. This reduction was due to a decrease in the number of councilmembers, as well as the elimination of the deputy positions from the Board of Directors and a decrease in the number of director offices.

## THE BOARD OF DIRECTORS

**[102-22; 102-24; 202-2]** The Board of Directors is made up of 9 active members, all of them Brazilian, one of whom will be its Chairman and the other, the Vice-Chairman. These are chosen by their peers at the first meeting of the Board of Directors to be held after the election of their members for a unified term of 2 years, with a maximum of 3 consecutive renewals allowed. It should be noted that they can be removed at any time by the General Shareholder's Meeting. Employees are guaranteed the right to elect 1 member, subject to the provisions of Law No. 12,353, of 28/Dec/2010, as applicable.

At least 25% of the members of the Board of Directors must be independent members, or at least one, if the minority shareholders decide to exercise their multiple voting right. 62.5% of the council members serving in 2019 had characteristics of independent council members according to the criteria of the Dow Jones Sustainability Index - DJSI e of the Brazilian Institute for Corporate Governance - BGC. Currently, diversity is not an aspect considered for the formation of the Council.

The duties of the Board of Directors are described in the Board of Directors Bylaws. This document, available on Cemig's website<sup>46</sup>, determines that the Board of Directors should meet regularly at least once a month to analyze the results of Cemig's holding company and its wholly-owned, controlled and affiliated subsidiaries, in addition to deciding on the other matters included in the agenda. And, extraordinarily, when convened by its Chairman, its Vice-Chairman, one third of its members, or when requested by the Executive Board.

**[102-27; 102-33]** The matters sent by the Executive Board for inclusion in the agenda, issued by the Deliberation Proposal - PD of the Executive Board and/or the Board of Directors, must be accompanied by recommendations, reports, expert opinions and, as the case may be, a statement of compliance with Cemig's Long-Term Strategy and Multiannual Business Plan and included in the annual budget.

46 - Available at: [http://ri.cemig.com.br/ptb/18336/2453\\_715316..pdf](http://ri.cemig.com.br/ptb/18336/2453_715316..pdf)

In 2019, 1,014 Deliberation Proposal - PDs were forwarded to the Executive Board for analysis and filtering and, when they were accepted, they were passed on to the Board of Directors for deliberation.

There is no compilation by topic on all the matters dealt with by the DPs sent to the Executive Board, considering that they come from all areas of the Company, addressing a diverse range of fields and interests.

However, some of the matters discussed by the Board of Directors during 2019 stand out: **(i)** preparation and review of People Management Policies, Code of Conduct, and Strategic Planning; **(ii)** matters related to Renova Energia S.A.; **(iii)** corporate risk and compliance matrices; and **(iv)** matters related to the Company's Bylaws Reform.

The Board Members must always attend the meetings prepared in advance by examining the documents made available to them and participate actively and diligently in them. Any supplementary clarifications on the matters to be resolved at the meetings may be requested by any Director, in writing, with Cemig having to provide such clarifications or send supplementary documents by the beginning of the meeting.

In 2019, the Board of Directors met 30 times to decide on several matters, including strategic planning and investment projects.<sup>47</sup> At the start of each meeting, the Directors are invited to speak up if there is a conflict of interest with the matters to be resolved.

**[102-26]** Cemig's Strategic Planning process is conducted by the Board of Directors, with the participation of the Executive Board, starting with the definition of the strategic foundations, represented by the Mission, Vision for the

Future, Values, Master Plan, and Strategic Guidelines. These elements are related to economic, environmental and social topics that guide the Company's performance.

The Executive Board is responsible for presenting to the Board of Directors the Business Plan for the following fiscal year and the Long-Term Strategy, updated with an analysis of risks and opportunities for at least the next 5 years. Cemig's Long-Term Strategy, Multiannual Business Plan and Annual Budget will be reflected in all plans, forecasts, activities, strategies, investments, and expenses of the holding company and its wholly-owned subsidiaries, controlled companies, affiliates and consortia it participates in, whether directly or indirectly.

**47** - The summary of decisions and the abstract of the minutes of the meetings can be consulted at: [http://www.cemig.com.br/pt-br/a\\_cemig/conduta\\_etica/Documents/codigo\\_conduta\\_cemig.pdf](http://www.cemig.com.br/pt-br/a_cemig/conduta_etica/Documents/codigo_conduta_cemig.pdf)

**[102-27; 102-28]** Annually, the members of the Board of Directors are submitted to individual and collective performance self-assessments, aiming at improving their jobs, in compliance with the following minimum requirements:

- Exposure of the management acts performed, regarding the legality and effectiveness of the administrative action;
- Contribution to the income for the year;

- Achievement of the objectives laid down in the Multiannual Business Plan and compliance with the Long-Term Strategy and the Annual Budget.

Standing Members	Term of Office	Ranking	Power highlights
Márcio Luiz Simões Utsch - Chairman (majority)	(Inauguration 02-Apr-2019)	Independent	<p>A lawyer with an MBA in Advanced Management/ Finances by FDC and specialization in Retail Management by UFRJ</p> <p>He was COE of Alparbatas S.A.</p>
Antônio Rodrigues dos Santos e Junqueira (majority)	(Inauguration 02-Apr-2019)	Independent	<p>Graduated in Business Administration at PUC-RJ</p> <p>Executive Officer and Partner in charge of the Electric and Sanitation sectors of BTG Pactual Bank</p> <p>He was Business Analyst for UBS Investment Bank</p>
Cledorvino Belini (majority)	(Inauguration 02-Apr-2019)	Non-Independent	<p>Business administrator with a master's degree in Finances from USP and an MBA from FDC</p> <p>He was Development CEO at Fiat Chrysler for Latin America</p> <p>Independent Councilmember at JBS by BNDES</p>
José Reinaldo Magalhaes (majority)	(Inauguration 02-Apr-2019)	Independent	<p>Economist with a master's degree in Corporate Finance and Corporate Law from FGV and in Finance from IBMEC</p> <p>He was assistant manager of Banco do Brasil in New York</p> <p>Investment Director at PREVI - Banco do Brasil Employee Pension Fund</p>

Table 9: Structure of the Board of Directors in 2019

Romeu Donizete Rufino (majority)	(Inauguration 02-Apr-2019)	Independent	Accountant with graduate degrees from several institutions, such as FGV, FDC and Kellogg Graduate School of Management - Chicago, USA
			He was Inspection Superintendent at Aneel
			He was General Director of Aneel
José João Abdalla Filho (preferred)	(Inauguration 30-Apr-2014)	Non-Independent	CEO and controlling shareholder of Banco Clássico S.A.
			Deputy member of the Board of Directors of Companhia Distribuidora de Gás do Rio de Janeiro - CEG
			Chief Executive Officer of Dinâmica Energia S.A.
Marcelo Gasparino da Silva (minority)	(Inauguration 02-May-2016)	Independent	Lawyer specialized in Corporate Tax Administration
			He was chairman of the Board of Directors of ETERNIT, Cemig, and a deputy member of the Fiscal Council of Petrobras
Vacant (minority)	-	-	-
Marco Aurélio Dumont Porto (Employee Representative)	(Inauguration 25-Feb-2020)	Non-Independent	Civil Engineer with a Postgraduate Degree in Project Management and an MBA in Business Management
			He has worked in several areas of Cemig since 1986 and is currently a Quality Analyst in the area of Strategy and Environment

## THE FISCAL COUNCIL

The Company also has a permanent Fiscal Council, which is responsible for the attributions laid down in the applicable Brazilian legislation, as well as in the laws of the countries in which Cemig's shares are listed and traded, when they do not conflict with Brazilian law. The Fiscal Council is a multidisciplinary body and is made up of 5 effective members and their deputies. The members of this Council are also elected by the Shareholders' Meeting for 2-year terms.

Primarily, the Council inspects the acts of the administrators and verifies the fulfillment of their legal and statutory duties, in addition to giving their expert opinion on the annual management report. That opinion must include any complementary information that they deem necessary or useful for the decisions of the General Shareholder's Meeting.

The Council is also responsible for looking into all non-operational charges of frauds and misconducts relating to the financial statements

and fiscal filing, or to reports sent to regulatory bodies, as well as any changes they consider relevant for the Company's equity sent by the Ethics Committee.

Charges are received via an electronic system available on Cemig's Intranet environment, the Complaints Channel, and are then analyzed. The Fiscal Council is responsible for proposing treatment actions to be carried out by the Internal Audit. In 2019, the Fiscal Council met 15 times.

Standing Members	Term of Office	Ranking
Gustavo de Oliveira Barbosa (Chairman)	(Inauguration 08-Aug-2019)	Independent
Marco Aurélio de Barcelos Silva (majority)	(Inauguration 08-Aug-2019)	Independent
Elizabeth Jucá e Mello Jacomet (majority)	(Inauguration 08-Aug-2019)	Independent
Rodrigo de Mesquita Pereira (preferred shares)	(Inauguration 12-Jun-2018)	Independent
Cláudio Morais Machado (minority)	(Inauguration 12-Jun-2019)	Independent
Alternate Members	Term of Office	Ranking
Germano Luiz Gomes Vieira (majority)	(Inauguration 08-Aug-2019)	Independent
Carlos Eduardo Amaral Pereira da Silva (majority)	(Inauguration 08-Aug-2019)	Independent
Vacant (majority)	-	-
Ronaldo Dias (preferred shares)	(Inauguration 08-Aug-2019)	Independent
Carlos Roberto de Albuquerque S† (minority)	(Inauguration 12-Jun-2018)	Independent

Table 10: Fiscal Committee 2019

## BOARD OF OFFICERS

**[102-19; 102-20]** Cemig's Executive Board is composed of 7 executive officers, whose jobs are laid down in the Company's Articles of Incorporation. Its members are elected and can be taken out of office at any time by the Board of Directors and are in office for 2 years, a term which can be extended for a maximum of 3 times. The directors are allowed to occupy simultaneous and unpaid management positions in Cemig's wholly-owned, controlled and affiliated subsidiaries.

The Executive Board will follow and comply with targets and limits laid down by the Board of Directors, relating, in particular, to indebtedness, liquidity, rates of return, investments, and regulatory compliance. In this sense, it is the role of the executive officers to coordinate and manage the work of the Company, as well as all strategic and institutional activities of its affiliates and controlled companies, and consortia it is a part of.

**[102-20]** Responsibilities for economic, environmental, and social topics pervade the entire executive structure, and their management is consolidated by the Corporate Communication and Sustainability area.

Economic and financial issues are the responsibility of the executives appointed by the Finance and Investor Relations Department who answer for the 4 superintendent departments that make up that department (Controllershship, Corporate Planning and Control, Investor Relations, and Corporate Finance Management).

Environmental issues are the primordial responsibility of the executives appointed by the CEO's Office to make up the Strategy and Environment Superintendency and the Environmental Management Department.

Social issues, in their turn, are under the responsibility of the executives assigned by the CEO's Office to work in the areas of People Management and Corporate Communication and Sustainability, which are composed of 10 departments (Labor Relations, Occupational Health and Safety, Hiring and Development of People, Organization and Compensation, Institutional Relations, Sustainability, Communication, Innovation and Transformation, and Energy Efficiency).

In order to discuss solutions and strategies for the best performance of the Company in all its areas of operation, in 2019 the Executive Board met 61 times.

Name	Board of Directors	Term of Office	Powers
Reynaldo Passanezi Filho	Chief Executive Officer	(Inauguration 13-Jan-2020)	Economist and Lawyer, with a Master's Degree in Economics from Universidade de Campinas, and specialization in Management, Leadership, and Innovation from Stanford University (USA).
			A career in executive positions in the electrical sector (CEO of ISA CTEEP), in the financial sector (Country Manager and Managing Director of C&IB at BBVA Brazil)
			Jobs in the public sector, notably in privatization programs (Advisor to the Board of Directors of the State Privatization Program of the Government of the State of São Paulo).
Dimas Costa	Cemig's Trade Director's Office	(Inauguration 12-Jun-2018)	Electrical Engineer with a postgraduate degree in Economic Engineering from Fundação Dom Cabral, and in Thermal Engineering from UFMG
			At Cemig, he was Commercial Superintendent for Encouraged Customers
			From 2013 to 2016, he acted as managing partner of Ponta Energia Consultores Associados Ltda.
Daniel Faria Costa	Cemigpar Executive Board	(Inauguration 12-Jun-2018)	Bachelor of Law in the areas of Financial Administration, Banking and Business Management
			He was a representative of Banco do Brasil in Mexico City, General Manager in New York, Commercial Superintendent of Banco Patagônia S.A. in Buenos Aires, and National Superintendent of Asset Restructuring.
Ronaldo Gomes de Abreu	Cemig D Board	(Inauguration 12-Jun-2018)	Business administrator and lawyer, with an MBA in Strategic Management and Business Management from UFMG
			Working at Cemig since 1985, he acted as manager in managerial careers in the Distribution and Marketing, and Finance and Investor Relations Director Offices
			Superintendent in the areas of Coordination and Execution of the Distribution Development Plan, Distribution Coordination, and Economic-Financial Regulation.

Maurício Fernandes Leonardo Júnior	Finances and Investor Relations Board	(Inauguration 12-Jun-2018)	Bachelor in Arts, Master in Production Engineering, with postgraduate degrees in the fields of Accounting and Finance, Marketing, and Business Administration
			CEO of Banco do Brasil Money Transfers in New York
			COO of Banco do Brasil AG in Vienna
			Since 2017, he has been Superintendent Director of the Economus Instituto de Seguridade Social.
Paulo Mota Henriques	Cemig GT Board	(Inauguration 01-Apr-2019)	Electrical Engineer, a specialist in Control Engineering and Industrial Automation from UFMG, with an MBA in Business Management from FGV, and an MBA in Finance from IBMEC. He followed technical, managerial and executive careers at Cemig Holding and Cemig Geração e Transmissão S.A, with 31 years of experience
			He was the Chief Executive Officer of TAESA (2009-2011), and a member of the Board of Directors of ABRATE, a member of the ABDIB Transmission Committee, a member of the ONS Board of Directors, and a member of the Board of Directors of Transmission Companies.
Luciano de Araújo Ferraz	Regulation and Legal Board	(Inauguration 08-Aug-2019)	A lawyer with a Master's Degree in Administrative Law from UFMG and a Ph.D. in Law from Universidade Nova de Lisboa
			Referee on the list of the Federation of Industries of the State of Paraná
			Associate Professor of Administrative Law at UFMG Teaching-Degree Professor of Public Finance and Financial Law at PUC-MG
			He was a Legal Director at Cemig, and a Legal and Regulatory Director at Taesa, as well as a Legal Consultant at GASMIG.

Table 11: Structure of the Executive Board

A relevant fact was that, in early 2020 - a time outside the boundaries of this report - there was a significant structural change to the scope of this report, which was significant for the composition of the Company's governance structure. The then CEO of Cemig, Mr. Cledorvino Belini, inaugurated in February 2019, was replaced before the end of his term by the new representative of the Company, Reynaldo Passanezi.

Additional information on the structure, election, term of office, main responsibilities, and duties of the Board of Officers is available on Cemig's Investor Relations website<sup>48</sup>. The Bylaws are also available on that website.

48 - Available at: [http://www.Cemig.com.br/pt-br/a\\_Cemig/quem\\_somos/Paginas/estatutos\\_e\\_regimentos.aspx](http://www.Cemig.com.br/pt-br/a_Cemig/quem_somos/Paginas/estatutos_e_regimentos.aspx)

## AUDIT COMMITTEE

**[102-22]** The Audit Committee is an independent body, with its own budgetary allocation, of a consultative and permanent nature, intending to advise the Board of Directors, to which it will report. It is also charged with carrying out the other activities that applicable laws and regulations assign it.

The Audit Committee has 4 positions and, by the end of 2019, it had 3 members. In their current term of office, all the (3) members are independent and appointed by the Board of Directors for a 3-year non-coincident term of office, 1 re-election being permitted. The appointment of the Audit Committee happens at the first meeting after the General Shareholders' Meeting.

Standing Members	Term of Office	Ranking
Pedro Carlos de Mello (Coordinator)	(Posse 18-Jun-2018)	Independent
Márcio de Lima Leite	(Inauguration 31-Apr-2019)	Independent
Roberto Tommasetti	(Inauguration 31-May-2019)	Independent
Vacant	-	-

Table 12: Audit Committee Members

**[102-28]** The members of the Audit Committee must participate in specific training sessions provided by Cemig (which are held when they are inaugurated, annually). Reelection of those who have not attended the annual training provided by the Company in the past 2 years is prohibited. The Audit Committee is also responsible for verifying the conformity of the evaluation process of the other Company administrators, the members of the advisory committees to the Board of Directors, and the members of the Fiscal Council.

In addition to the performance evaluations of the current managers and executives of the Company, the Audit Committee is responsible for performing the background check of potential candidates to make up Cemig's strategic boards and committees. The background check is a procedure carried out by the Compliance area regarding the professional history and legal records of all the names appointed to occupy strategic positions in the Company. The Audit Committee met 47 times in 2019.

## 3.2 ETHICS AND TRANSPARENCY



**[103-2:205; 102-3:205; 102-16]** Cases of corruption, legal non-conformities, lack of transparency, and/or information of a dubious nature contradict Cemig's commitments and vision for a responsible company, and can cause significant economic impacts and compromise the Company's reputation. Also, these cases can interfere with stakeholder decision-making processes. The instability caused by any misconduct by the Company and its representatives poses a risk to the business.

Cemig's exposure to potential occurrences of this nature happens through its nature as a Company, business relationships, and its situation as a mixed-capital company. For that reason, this Compliance and Ethical Conduct topic stands out as a priority material topic for Cemig and its stakeholders. That is why the topic is treated with due seriousness through internal processes and specific mechanisms for risk identification and management, and other preventive/corrective measures.

So, in order to promote an ethical and responsible environment, Cemig included among its internal rules the Declaration of Ethical Principles and Code of Professional Conduct<sup>49</sup> - Code of Conduct,

which aims at guiding and disciplining the conduct of the people who act on behalf of Cemig or interact with it, seeking an ethical behavior and compliance with the law and regulation of the electricity sector where the Company operates.

**[205-1]** Cemig's Code of Conduct - which adheres to what applies to it - was prepared in line with the Organization's Mission, Vision, and Values. It must be complied with by all its recipients, be it its administrators, directors, employees, interns, contractors, and subcontractors, in all business relationships established by the Cemig Group. Cemig also practices communication and promotion of anti-corruption policies and procedures by its suppliers.

<sup>49</sup> - he Company's Code of Conduct is public and available on its webpage <http://ri.cemig.com.br/ptb/17720/679373.pdf>

Two anti-corruption clauses, which address compliance with the rules of the "Anticorruption Law"<sup>50</sup> and the ethical principles of professional conduct contained in the Anti-Fraud Policy and in "Cemig's Declaration of Ethical Principles and Code of Professional Conduct", are included in all Cemig Company's contracts relating to:

- Purchase and Sale of Assets;
- Purchase and sale of energy, related to tender processes carried out by Cemig;
- Loans and financing;
- Shareholder agreements;
- Covenants;
- Sponsorships;
- Centralized and multisided contracts for the acquisition of materials and services.

50 - Law No. 12,846/2013 from 01/Aug/2013

As these contracts cover practically all Cemig's suppliers and business partners, it is possible to say that there is an effort for all Cemig's negotiations to be assessed regarding the Company's anti-corruption rules and procedures.

**[206-1]** As a result of this practice, there is a lack of lawsuits (whether pending or closed) for unfair competition, violation of antitrust laws, or sectoral regulations.

Cemig is a signatory to the Business Pact for Integrity and Against Corruption, coordinated by the Ethos Institute<sup>51</sup>, which provides guidelines and procedures that must be adopted by the signatory companies in their relationship with public authorities. Adherence to and subsequent implementation and monitoring of the Pact's guidelines are due to Cemig's compliance with its commitments to prevent and combat fraud and corruption and good compliance practices.

**[103-2;419; 103-3;419]** Over the past few years, the Company has been improving its governance system, including requirements outlined in Law No. 13,303/16 (Law of State-Owned Companies). Among these requirements are the drafting of a new bidding and contracting regulation for the Company, the creation of a Statutory Audit Committee, and linking the compliance and risk management areas to the CEO's Office.

51 - Disponível em: <https://www.ethos.org.br/conteudo/signatarios-do-pacto-empresarial-pela-integridade-e-contra-corrupcao/>

Cemig also has a Compliance Program, approved by its Board of Directors, which includes the management of the Company's anti-corruption topic and has 2 main goals:

- Fostering and maintaining an organizational culture of compliance and integrity and encouragement to ethical conduct and commitment to compliance with internal and external norms;
- Prevention, detection, and response to failures to comply with these standards and prevent misconduct.

This Program lays down guidelines and means to achieve its objectives, including the role of Senior Management and the Company's leadership in the Program results, the maintenance of documented standards and procedures, the provision of training and communication actions, the implementation of internal controls, and the availability of channels for inquiries and complaints, and others besides.

As part of the scope of anti-corruption actions, Cemig relies on its Compliance, Corporate Risk Management and Anti-Fraud Policies that guides the Company towards effective management against fraud and corruption, and where the most relevant risks are mapped, documented, and approved by Senior Management.

Cemig's Compliance risk matrix in 2019 is made up of 10 risks, with aspects related to the possibility of the occurrence of events linked mainly to cases of fraud, corruption, and conflicts of interest. These risks are analyzed and validated by the Corporate Risk Monitoring Committee - CMRC and approved by the Company's Board of Directors, thus stressing the relevance of this topic for Cemig.

In its corporate intranet, Cemig keeps a set of rules and procedures permanently available to its entire workforce<sup>52</sup>. These provide guidance on the proper conduct in the management of processes and in carrying out their activities. In addition, it provides training sessions and publications in internal channels to disseminate information on:

- The Declaration of ethical principles and code of professional conduct, which references the code of ethical conduct for public servants and the senior state administration of Minas Gerais;
- The Anticorruption Law;
- The SOX law;
- The anonymous reporting channel;
- The ethics committee;
- Internal rules applicable to the topic, such as information security policy, anti-fraud policy, and disciplinary penalties.

**52** - Workforce here means in-house employees, contractors and interns.

**[205-2]** Communication and training on anti-corruption policies and procedures are carried out, so that 100% of the members of governance bodies and the workforce can be covered.

In 2019, Cemig conducted a training on its Declaration of Ethical Principles and Code of Professional Conduct, addressing principles and criteria for anti-corruption conduct. A total of 7,998 members of Cemig's workforce (in-house and outsourced employees) were trained, with 92% of their in-house employees participating in the training. Cemig conducted training on its Declaration of Ethical Principles and Code of Professional Conduct, addressing principles and criteria for anti-corruption conduct. Suppliers are also informed about Cemig's anti-corruption policies and procedures through its commercial agreements. Another relevant action involves holding lectures on general aspects of corporate culture - including some related to organizational ethics - for new employees, when they join the Company.

**[102-17]** Cemig has a whistleblowing channel on its corporate intranet, which all of its in-house workforce has access to. The Channel is the proper venue to register anonymous inquiries or whistleblowing tips about irregular practices. In addition to registration on the intranet, other means of registering issues of this nature are also permanently available at the Organization, via:

- E-mails to the Ethics Committee;
- An address for physical mails to the Secretariat of the Ethics Committee;
- The exclusive phone call line of the Ethics Committee.

All whistleblowing tips or queries received and registered in the Whistleblowing Channel

are forwarded to the Ethics Committee for verification. After due analysis, the Commission must send a response to the respective claimants, including the conclusion and possible measures resulting from the investigation, according to the criteria, deadlines, and procedures laid down in the Company's internal rules.

Cemig's Whistleblowing Channels preserve 100% of the anonymity of whistleblowers and those who speak for themselves through it. It allows for the reporting of any situation that amounts to a deviation from the Company's Code of Conduct. Tips must be investigated within a maximum period of 60 days. In 2019, Cemig received 298 complaints made official on its Anonymous Reporting Channel.

Tip Kind	Graduated	Ongoing	Total	%
Commitment to Customers	2	0	2	0.7%
Conflicts of Interests	13	10	23	7.7%
Misconduct	49	12	61	20.5%
Corporate Governance	14	14	28	9.4%
Assets Protection	52	8	60	20.1%
Human Resources	33	2	35	11.7%
Relations with Suppliers	41	11	52	17.4%
Health and Safety	17	6	23	7.7%
Whistleblowing and Inquiry Treatment	14	0	14	4.7%
<b>Grand Total</b>	<b>235</b>	<b>63</b>	<b>298</b>	<b>1</b>

**Table 4:** Whistleblowing tips received in 2019, by kind

Cemig also ensures the maintenance of relationship channels external to the Company, made available to society, customers and suppliers. These channels (e-mail from the Ethics Committee, physical correspondence, ombudsman office, website and telephone), exist to make it possible to receive (anonymous or identified) whistleblowing tips about practices considered illegal and contrary to the interests of the Company, its wholly-owned subsidiaries and controlled companies, concerning the Code of Conduct and comprising acts of fraud and corruption.

**[205-3]** Even though the Company makes efforts to avoid any type of misconduct, it has to be prepared to deal with any flaws and/or deviations identified and ranked. Thus, Cemig has resources that provide tools for the recording and treatment of these irregularities or ethical dilemmas related to its operations. The system applied includes the reception, recording, verification process, and treatment of all whistleblowing tips and inquiries and is solely for the use of the in-house public.

Upon receipt, all complaints are considered as relevant. During the verification and investigation process, complaints are ranked and dealt with according to their content to apply possible disciplinary measures, when any misconduct is identified and proven.

From the total number of charges received in 2019, 32 were determined to have corruption characteristics:

- 13 cases relate to misconducts directly linked to corruption, 8 of which had their investigations completed and 5 are ongoing. Of the completed cases, 4 resulted in the employee being suspended, whereas in the other 4 cases they received guidance;

- 17 cases refer to conflict of interest with fraud or corruption characteristics; of those, 10 were concluded and treated by providing guidance, and 7 cases are still ongoing;
- In the remaining 2 cases, investigation proceedings were initiated, which resulted in the dismissal of the employees involved.

Considering the legal investigations that are being carried out at the Company and certain Companies of the Group, Cemig's governance bodies authorized the hiring of a specialized company to analyze the internal procedures related to its investments. This independent investigation is being supervised by a Special Investigation Committee, whose creation was approved by the governance bodies.

In this regard, it is important to clarify the facts relating to the existing investigations involving Cemig Group companies. Renova S.A.<sup>53</sup> shows up as being investigated in an effort conducted by the Civil Police of the State of Minas Gerais, the Federal Police, and the Federal Public Prosecutor's Office. The investigation looks into certain contributions made in 2018 by the controlling shareholders, including Cemig and Cemig GT, and contributions made in previous years by Renova to certain projects under development.

On April 11, 2019, as part of the 4th phase of "Descarte" (Disposal) operation, the aforementioned authorities promoted the "E o Vento Levou" (Gone With the Wind) operation,

**53** - A Cemig Group business jointly controlled by the Company, which holds a 36.2% interest in its shares.

which resulted in a search and seizure warrant at Renova's headquarters in São Paulo to look into any overpriced contracts (without the provision of services maintained by that investee in periods prior to 2015). On July 25, 2019, the second phase of the operation began.

Renova has informed that the police investigations in that operation, and that of the Civil Police of the State of Minas Gerais, have not yet been concluded, and that government authorities may take additional time to complete all their fact-finding procedures. During 2019, the IRS issued tax assessment notices against Renova, questioning the calculation of IRPJ, CSLL, and the payment of IRRF. They were looking into contracts signed for the provision of services that supposedly did not have due consideration.

The internal investigation was completed on February 20, 2020 and no actual evidence of acts of corruption or misappropriation of funds for political campaigns has been identified. However, independent investigators identified irregularities in the conduct of business and contracting by Renova, including (i) payments without evidence of consideration for services in the overall amount of approximately R\$ 40 million, (ii) payments in violation of the company's internal policies and good governance practices in the overall amount of approximately R\$ 137 million, and (iii) failures in the investee's internal controls.

The Annual Audit Plan is prepared based on a preventive approach, in line with the best corporate governance practices, regulations, and international auditing standards (Institute

of Internal Auditors - IIA and Committee of Sponsoring Organizations of the Treadway Commission - COSO).

The Company's Internal Audit area monitors the actions and notifies the Senior Management through weekly reports on the action plans for past due audits and complaints pending response addition to the status of the Training on and Annual Adherence to the Declaration of Ethical Principles and Code of Professional Conduct.

The Process Compliance, Internal Controls and Corporate Risk Indicator - ICONF was created, which is to be implemented in 2020 and will assess the effectiveness of events arising from process audit activities provided for in the Annual Audit Plan, SOX Internal Controls Assessment<sup>54</sup>, treatment of whistleblowing, and activities carried out within the scope of the Forensic Audit.

**54** - The American Sarbanes-Oxley law, also known as Sarbox or SOX, aims to ensure the creation of reliable audit and security mechanisms in companies, including rules for the establishment of committees in charge of supervising their activities and operations.

Every quarter, Cemig's Executive Officers will be evaluated by the Internal Audit according to ICONF, one of the indicators of the Strategy Management System. The goal is to have an index equal to or higher than 75% in each Executive Department. The calculation takes place using the following weighted formula:  $ICONF = (E\% \times 60\%) + (TD\% \times 20\%) + (RL\% \times 20\%)$ , in which:

- E - Effectiveness of internal controls related to the Sarbanes Oxley - SOX law and Compliance with deadlines for audit work Action plans;
- TD - Deadline for handling complaints received via the Reporting Channel;
- RL - Updates of risk measures and compliance with LGPD actions :

In case of non-compliance with the quarterly targets, this will cause an impact on the variable remuneration of the Officers, Superintendents, and Managers affected by the respective Executive Department.

Some Compliance actions, such as promoting a culture of compliance, are measured by the number of attendees in training sessions, the number of employees and contractors reached

by campaigns and publications, and the number of compliance checks carried out. But due to the transversal and decentralized nature of activities related to the topic of transparency, compliance, and fighting against corruption, so far, it has not been possible to accurately determine the amount of financial or human resources dedicated to this topic.

**55** - General Data Protection Law, mandatory as of August 2020. There are several actions that Cemig's areas will have to carry out to comply with the law. For more information, go to: <https://www.lgpdbrasil.com.br/>

## 3.3

# RISK MANAGEMENT

**[102-15]** Corporate risk management enriches the management dialogue by adding perspectives to a strategy's strengths and weaknesses in the event of a change of context, in addition to assessing the strategy's alignment with the organization's mission and vision.

Risk management planning takes into account factors that may pose risks to the health and safety of employees, suppliers, customers, the general population and the environment.

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

The 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 implementation of corporate risk management took place formally in 2007 and has been continuously improved by the competent areas. This form of management is based on processes and is in line with the Multi-Annual Business Plan and the Long-Term Strategy of the Company, with the Corporate Risk Management Policy<sup>56</sup> as the main guiding element.

Cemig has a rigorous governance structure to support decision making. It is adequately subsidized by the competent levels, whether business areas, committees representing the Executive Board or the Board of Directors, or the Board of Directors themselves. In these decision-making flows, Cemig takes into account the Precautionary Principle, which is especially informed by Cemig's Corporate Risk Management Policy and its declaration of risk appetite, in addition to care for the legal and regulatory precepts that determine the activities of companies in the electric sector in Brazil.

<sup>56</sup> -Available at: [https://www.Cemig.com.br/pt-br/A\\_Cemig\\_e\\_o\\_Futuro/sustentabilidade/nossos\\_programas/economico\\_financeiros/Documents/Normas%20Organizacionais/NO-02.19.pdf](https://www.Cemig.com.br/pt-br/A_Cemig_e_o_Futuro/sustentabilidade/nossos_programas/economico_financeiros/Documents/Normas%20Organizacionais/NO-02.19.pdf)

According to Cemig's Articles of Incorporation, the Board of Directors has important functions, as the highest governance body, concerning risk management. The Company's Corporate Risk Management Policy is approved by the Board of Directors. It was updated in 2019, which demonstrates the Board's engagement with the Risk Management topic, which is great importance for the Company, and Cemig's alignment with Risk Management and Corporate Governance good practices.

The Company's Corporate Risk Management Policy is guided by principles that reflect the best market practices, highlighting the guidelines for risk appetite and in line, especially with the governance model called "Three Lines of Defense".

The "Three Lines of Defense" model is a simple and effective way to improve risk management communication and internal controls by clarifying essential roles and responsibilities, thus helping ensure the continued success of risk management initiatives. The owner of each risk is responsible for managing their own risk and mechanism. The Compliance, Risk Management, and Internal Controls areas are responsible for coordinating the respective processes at Cemig and providing support to risk and control owners. Internal Audit is responsible for periodically checking the compliance with and effectiveness of the workings of the internal control, Compliance and risk management systems.

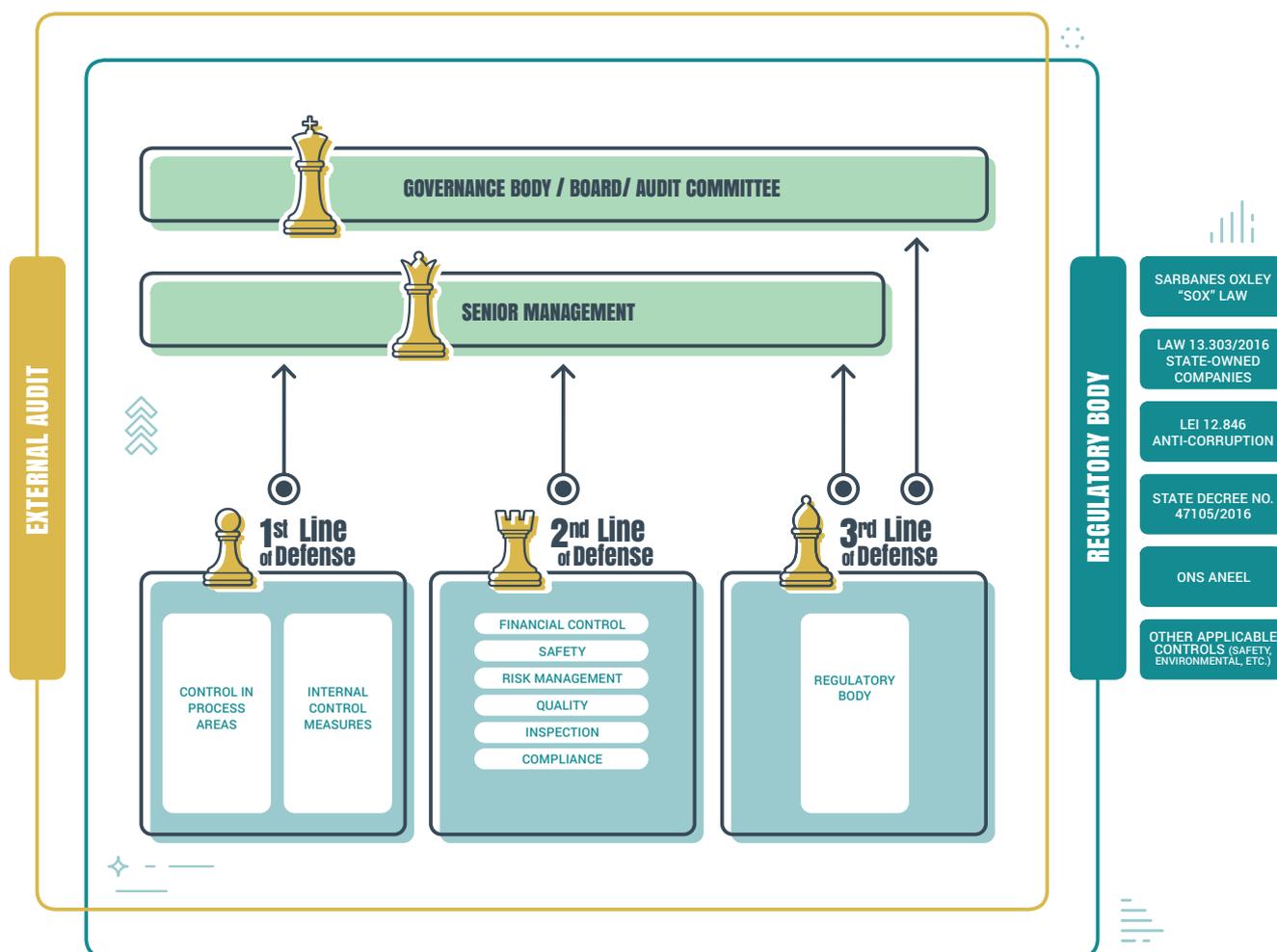


Figure 10: : Three Lines of Defense Model

## CEMIG'S RISK MANAGEMENT PROCESS

[102-15; 102-29; 102-30; 102-31] Cemig has a risk management program that allows for the mapping and assessment of both strategic risks and those arising from operational processes. This program consists of a tool integrated with multidisciplinary processes, and is coordinated by the risk and internal control management department, which provides technical support to the different areas of the Company. The objective is to provide information to senior management so they can make decisions regarding the most relevant risks and opportunities.

The modeling and analysis of operations from the point of view of risk management aims to: (i) help achieving the goals set by Cemig; (ii) improve performance; (iii) reduce costs and losses; and (iv) optimize investments in controlling activities.

As an integral part of Cemig's corporate governance practices, corporate risk management aims to build a structure capable of providing relevant information to senior management to support decision making, thus creating and protecting value for the Company. The risk management process helps

the Company to properly manage the risks to its business objectives, thus allowing it to influence and align strategy and performance in all areas of the company.

Thus, the performance of the Corporate Risk Monitoring Committee - CMRC stands out in Cemig's risk management process. This Committee's major responsibilities are:

- Advising the Executive Board, as an executive body, in the fulfillment of responsibilities related to risk management and internal controls.
- Continuously monitor the scenario in which the Company operates and its corporate risk matrix, in order to identify in time the main risks to be proposed to the Executive Board for possible review of the matrix.
- Monitor the structure of internal controls and the actions taken to minimize the occurrence of events capable of compromising the achievement of Cemig's strategic objectives.

Cemig ranks the risks identified as **(i)** process risks, which are those related to operations among departments and are limited to the activities of each of the processes; **(ii)** macro-process risks, the impacts of which include different processes and departments of the Company; and **(iii)** Top Risks, which are macro-process risks that can directly impact the Company's strategy.

When a Top Risk is mapped for the first time at Cemig, the following steps must be followed:

- 1)** Identification - understanding of the scope, causes and impacts of the risk;
- 2)** Analysis - an estimation of the probability of the risks occurring, as well as the potential damage caused by the impacts identified in the previous step;
- 3)** Treatment - a survey of all actions and controls for risk mitigation, as well as the mitigating effect of these actions on the mapped impacts;
- 4)** Monitoring - insertion of risk in the corporate tool, follow-up of self-assessments of controls and mitigating efforts, and the validation of the risk with the person responsible for it.

Corporate risk management is part of Cemig's Corporate Governance practices and its major activity is mapping Top Risks. The communication of Top Risks to Senior Management, as well as the treatments recommended by the CMRC, is done from time to time, or when necessary.

During risk identification activities, the internal risk and control management department builds the Corporate Risk Matrix, where managers of areas relating to the matters are consulted. These include those areas that interact with external stakeholders, such as relations with investors, strategic planning, sustainability, and the general secretariat.

After obtaining the result of these consultations with leaderships, the matrix proposal is presented to the Corporate Risk Monitoring Committee – CMRC, that advises the Executive Board. After

CMRC states their views, the perfected matrix proposal is sent for analysis by the Executive Board. It is then sent to the Board of Directors. Also, the proposed matrix can be presented to the Board of Directors' support bodies, such as the Audit Committee and the Fiscal Council.

The Board of Directors' assessment of risk management activities includes ensuring the implementation and supervision of these management efforts and internal controls put into place to prevent and mitigate the major risks the Company is exposed to. This includes risks related to the integrity of accounting and financial information and the occurrence of corruption and fraud.

In September 2019, the Corporate Risks Matrix - Top Risks and the Compliance Risks Matrix in effect for the 2019/2020 fiscal years was approved. It covers the businesses of Generation, Transmission, Distribution, Marketing, Distributed Generation, the Holding, and also common business risks. In addition to the obligation to approve the Corporate Risk Matrix, the Board of Directors and the Audit Committee may also receive risk reports or other presentations may be made in due course.

In this scenario, Cemig develops analyzes to define the way it will manage economic, environmental, and social topics and their impacts, risks, and opportunities. In the two-year risk management analysis, the aforementioned topics are considered. They are also included in the presentations that may be made to the Board of Directors, should it be deemed relevant to include issues related to economic, social, and environmental issues in these risk reports.

The following stand out as corporate economic, environmental and social risks prioritized by the Board of Directors:

- Non-payment level higher than that acknowledged by the legislator;
- Dam breaches;
- Accident with the population;
- Accidents and diseases among the workforce - D, G, T, GD;
- Lack of liquidity in the company - D, Gt and h;
- Non-compliance with environmental obligations D, G, T, GD.

Cemig does not centrally manage opportunities, but as for challenges, the Company submits the proposed Corporate Risk Matrix to different levels of management and administration to gather their understanding regarding the prioritization that should be given to each risk. Also regarding challenges, Cemig has a strategic planning process, which also includes a method of identifying the major challenges the Company has to pursue, its strategic objectives.



# WHERE OUR STRENGTH COMES FROM

In 2009, Cemig launched its new vision of the future within the framework of its Master Plan provided for the period from 2005 to 2035. According to this directive, the Company aimed “to be, in 2020, among the 2 largest energy groups in Brazil in terms of market value, with a relevant footprint in the Americas, and a world leader in the sector’s sustainability”.

That said, in started 2019 Cemig was already the most sustainable electric energy company in the Americas - standing as the 19th most sustainable company in the world - according to Corporate Knights Magazine - and the largest energy distribution group in South America, through its Cemig D and Light subsidiaries.

Brazil stands as the largest consumer of electricity in Latin America at the end of a decade that promises a revival of the domestic economy. And Cemig, as one of the largest companies in the sector in the country, strives to maintain the quality of products and services it offers, technological and process innovations, and to pioneer global trends in the electricity sector.

For Cemig to be a benchmark in the electricity sector, it needs to count on people (employees, outsourced workers, suppliers, consumers, and customers), who are the core of its priorities.

# 4

## CUSTOMERS

Cemig's business objective is to act with excellence and focus on improving its relationships with customers and consumers. Cemig's customers

are vitally important so the Company can achieve its best results, so much so that their satisfaction is part of its vision of the future.

# 4.1

## OUR CUSTOMERS AND CONSUMERS

Cemig seeks to offer a differentiated and excellent service to all customers. Along those lines, the Company has an oversight department solely dedicated to guaranteeing custom-made service and a team of professionals with specific technical knowledge who are in charge of managing the contracts and all customers' demands. Additionally, they work in prospecting and attracting new customers.

The Energy Trading Policy<sup>57</sup> aims at establishing guidelines for the relationship with Cemig customers, both in Regulated and Free Agreements.

**57** - The policy provides for the presentation of the following topics to the Board of Directors in the last quarter of each year: Estimate of the various markets to be served and projections of average price and average tariff; Estimate of Tariff Readjustments and Revisions, in average figures, within the timeframe of 2 revision cycles; Estimate of the evolution of average energy prices, resulting from auctions and bilateral contracts; Estimate of the evolution of the Price of Settlement of Differences - PLD; and Risk mitigation strategies (with the actions and/or products adopted) and criteria for determining under or over renewal of contracts at Cemig D S.A.

[102-6] Cemig's main types of customers are:

(I) Captive customers, located in the concession area in the state of Minas Gerais: consumers who are linked only to the distributor, with power demand below 500kW. This type of consumer cannot buy energy in the Free Contracting Environment (ACL) and buy services via the Regulated Contracting Environment (ACR). They can be consumers of the residential, industrial, commercial, rural, public power, public lighting, and public service classes;

(II) Free customers in the state of Minas Gerais and in 22 other states in Brazil<sup>58</sup>: consumers who can buy energy in the ACL, are not just linked to the distributor utility, and with an energy demand over 500kW. They can be consumers of the industrial, commercial and rural classes;

Other Cemig customers:

- Electric sector players, such as independent energy traders, generators and producers; and
- Power distributor utilities that work in other concession areas.

**58** - Cemig Group's free customers are also located in the following states: Amazonas, Amapá, Pará, Tocantins, Mato Grosso, Mato Grosso do Sul, Goiás, Maranhão, Piauí, Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Sergipe, Bahia, Espírito Santo, Minas Gerais, São Paulo, Paraná, Santa Catarina, and Rio Grande do Sul.

Cemig has different ways of managing the relationship with its customers, adapted to the different demands of each type, and the specifics of the respective business relationships.

In December 2019, Cemig reached the mark of 8,537,518 billed customers, a 1.5% increase against December 2018. Of this total, 8,537,176 are final consumers and for their own consumption and only 342 are other players in the Brazilian electricity sector.

The table below shows the details of the number of consumers per class and the energy conveyed.

	NUMBER OF CEMIG CUSTOMERS BY CLASS			
	2017	2018	2019	18/19 Variation
Final Consumers	8,346,349	8,408,481	8,536,461	1.5%
Home	6,765,201	6,817,365	6,966,696	2.2%
Industrial	74,497	73,003	30,659	-58.0%
Commerce and Services	718,52	721,149	806,602	11.8%
Rural	705,541	712,793	647,066	-9.2%

Public Sector	82,59	84,171	85,438	1.5%
Private consumption	751	702	715	1.8%
Wholesaling	337	352	342	-2.8%
<b>TOTAL</b>	<b>8,347,437</b>	<b>8,409,535</b>	<b>8,537,518</b>	<b>1.5%</b>

**Table 5:** Number of Cemig customers and consumers by class

It is important to clarify that the negative variations in the industrial and rural classes are because Cemig carried out 2 consumer registration renewal processes in 2019, described below:

The first was a process of reclassification of industrial consumers encouraged by the Minas Gerais State Finance Department. That reclassification had as main objective to adjust the tariff situation of consumers, as the industrial units have a rate of the Brazilian State Value Added Tax - ICMS that is different from the one for other types of consumers. With the reclassification, numerous consumer units migrated from the industrial class to the commercial class and, later on, even to the residential class.

The second process carried out in 2019 was the rural registration renewal. This process was carried out as determined by Aneel through Normative Resolution No. 800/2017, which regulates the maintenance of tariff subsidies granted to farmers across the country.

To update the situation of consumers in the category, the Agency expected a tariff adjustment, granting the subsidy only to those customers who are really entitled to it. With the registration renewal, several consumer units ended up being classified as residential and commercial.

Some free customers pay for the use of Cemig D's distribution network, regardless of whether or not they buy energy from the Company. The number of customers with this profile is given in the table below, by class.

	NUMBER OF CUSTOMERS THAT PAY FOR SHIPPED ENERGY			
	2017	2018	2019	18/19 Variation
Industrial	531	574	707	23.2%
Commercial	456	555	724	30.4%
Rural	4	6	7	16.7%
Authorized dealer	3	3	3	0.00%
<b>TOTAL</b>	<b>994</b>	<b>1,138</b>	<b>1,441</b>	<b>26.6%</b>

**Table 6:** Free customers who pay for using the Cemig D's distribution

## CORPORATE CUSTOMERS

Potential corporate customers<sup>59</sup> are subjected to a thorough credit analysis. Before the sale is concluded, the operation is submitted for approval to the Energy Risk Management Committee - CGRE<sup>60</sup>, to assess feasibility and verify compliance with commercial guidelines. After their approval, the operation is submitted to the Executive Board for deliberation.

Cemig's corporate client portfolio accounts for a significant percentage of the share of energy sales and, consequently, of the Company's revenue. The focus of management on corporate customers is the result of

**59** - The types of customers described in items (II), (III) and (IV) are those called Cemig "corporate customers".

**60** - CGRE is composed of members from different areas of Cemig.

the acknowledgment of its importance to Cemig's business.

In order to continuously improve relationships with corporate customers, Cemig provides the following customized relationship structure:

- Segmento Consumidores Finais (indústria de transformação, indústria de base, agronegócios, eletrointensivos, clientes especiais) - os canais de relacionamento e meios de comunicação com fluxo de informações para clientes são: divulgação e comunicação via telefone, e-mail, sistemas CRM, visitas e reuniões; eventos corporativos – por exemplo, a Bienal da Energia; encontros regionais; treinamentos e Portal Cemig;

- Wholesale Energy Segment (Distributors, Generators and Traders) - the relationship channels and means of communication with information flow for customers are: dissemination and communication via telephone, e-mail, CRM systems, visits and meetings, training sessions, newspapers, specialized websites, the Cemig Portal, and participation in market player associations - for example, Abraceel - and in government institutions and bodies.

**61** - Cemig's relationship channels with its customers are detailed in the "Relationship channels" section.

## CAPTIVE CUSTOMERS

**[102-43]** Cemig D's Strategic Map contains elements of monitoring of the customers' perception of the services provided to them. This monitoring is carried out on a regular basis via verification of the results of the customer satisfaction indicators, and is deployed at all levels of the Company, as defined in the management model.

The service channels of the electrical system, aspects related to customer satisfaction, and safety of the population are systematically monitored with the help of the Balanced Scorecard (BSC) methodology and the Service Monitoring Center - CMS.

In addition to complying with regulatory rules, Cemig also conducts satisfaction surveys among its consumers, through which it seeks to obtain data to adapt its relationship conduct to the customers' wishes.

The implementation of improvements, when relevant, is conducted by the Senior Management, always with a focus on the effectiveness and efficiency of the processes. This topic has been an ongoing issue in internal communication vehicles, reinforcing employee awareness.

The new challenge is the digital transformation of the commercial relationship, which aims at structuring and implementing a new model capable of enhancing the customer experience with Cemig by deploying new technologies that improve the interaction between the customer and the company, making it more proactive. Its main objectives are:

- Increase customer satisfaction (deadlines, quality, and efficiency in handling services and complaints);
- Increase the customer's perception of value (loyalty) about Cemig, to retain them in the event of market opening;
- Seek operational efficiency and cost optimization (reduce contacts via the face-to-face and telephone channels).

In order to achieve this new form of relationship, it was necessary to plan a new platform for the Virtual Outlet, which is being developed to facilitate the access of customers to available services, and help them check information and the progress of their requests. In addition to making communication with the customer proactive, the new Virtual Outlet will bring better usability, aiming at bringing the service level to a closer and more effective relationship with the customer. Other projects that can be mentioned and are aligned to this new strategy are:

- New Cemig Atende Application;
- Call center automation using artificial intelligence;
- Analysis of energy consumption in virtual channels.

## 4.2

# MARKET DEVELOPMENT



[102-6] The Cemig Group trades energy via Cemig D and Cemig GT companies, and wholly-owned subsidiaries Horizontes Energia, Sá Carvalho, Cemig PCH, Rosal Energia, CE Prajuru Beaches, CE Volta do Rio, Cemig Geração Camargos, Cemig Geração Itutinga, Cemig Geração Salto Grande, Cemig Geração Três Marias, Cemig Geração Leste, Cemig Geração Oeste, and Cemig Geração Sul.

That market consists of the sale of energy to (I) captive consumers in the concession area in the state of Minas Gerais; (II) free customers in the state of Minas Gerais and other states of Brazil, in the Free Contracting Environment ACL; (III) other agents in the electricity sector: traders, generators and independent energy producers in the ACL; and (IV) distributors in the Regulated Contracting Environment - ACR.

The figure below shows the electrical energy balance in Cemig's consolidated market, comprising sales operations realized by the Group companies in the year 2019<sup>62</sup>.

62 - EU2, G3 and EU12, G3



## HOMES

Home consumption accounts for 19.2% of the energy sold by the Cemig group and totaled 10,538,342 MWh, a 2.6% increase in the period from January to December 2019, against the same period in 2018.

The average monthly consumption per consumer in 2019 was 126.1 kWh/month, which corresponds

to an increase of 0.4% against the previous year of 125.5 kWh/month. The consumption behavior in homes can be explained by:

- Hotter weather than in the previous year;
- Incorporation of 149,331 consumer units.

## INDUSTRIAL

Energy billed in the Industrial class to captive and free customers in Minas Gerais and other states amounts to 29.2% of the volume of energy sold by the Cemig Group and totaled 16,024,418 MWh from January to December 2019, a decrease of 9.4% compared to 2018.

This result is a merge of the 7.9% reduction in the captive segment and the 9.7% reduction in the free market. The captive segment was

negatively affected by about 50% of consumers being reclassified from Industrial to Commercial and Residential, and also by the migration of consumers to the free market. In the free market, the reduction is due to the termination of energy sales contracts.

## COMMERCIAL AND SERVICES

Energy billed in the class to captive and free customers in Minas Gerais and other states amounts to 17.5% of the volume of energy sold by the Cemig Group and totaled 9,567,336 MWh in the year 2019, an increase of 14.2% compared to 2018.

The behavior of this class is associated with a 0.5% increase in the amount of energy billed to Cemig D's captive consumers and of 36.5% in the amount of energy billed by Cemig GT and Wholly-Owned Subsidiaries to free customers, in Minas Gerais and other states of Brazil.

The increase in the volume of energy is associated with an increase in the number of consumers. In the captive market, there was an increase of 11.8% in the number of consumers, mainly due to consumers from the Industrial and Rural classes

## RURAL

The consumption of the rural class, which reached 3,795,374 MWh, amounts to 6.9% of the energy sold by Cemig and increased 5% in 2019 in comparison to 2018. The increase is mainly due to weather factors (lower rainfall and high

being reclassified to the Commercial classes. In the case of free customers, there was an increase of 177 customers, mainly due to the migration of customers from the captive to the free market.

temperatures) in early 2019, compared to the previous year. The irrigation segment showed a 12.3% increase and the (conventional) agriculture one, a 1.3% increase.

## OTHER CLASSES

The power supplied to the other classes - Public Power, Public Lighting, Public Service, and In-House Consumption - which uses 6.7% of the

Cemig group's energy, totaled 3,634,164 MWh in 2019, an increase of 1.8%, against 2018.

## SALES IN THE FREE CONTRACTING ENVIRONMENT - ACL AND BILATERAL AGREEMENTS

In the 2019 year-to-date, energy sales reached 9,102,192 MWh, a decrease of 5.8% against 2018. The reduction is explained by the termination of Cemig GT's sales agreements.

## SALES IN THE REGULATED CONTRACTING ENVIRONMENT - ACR

Energy sales in the ACR totaled 2,107,920 MWh from January to December this year, a 9.7% decrease compared to 2018. This is due to the end

of the sale agreements from the 15th Existing Energy Auction.

Cemig Group's market performance is detailed in the following table:

Description	Amount (un)	Energy (MWh)
Sales to Final Consumers	8,536,461	43,559,634
Homes	6,966,696	10,538,342
Industrial	30,659	16,024,418
Captive	29,875	2,383,097
Free	784	13,641,321
Commercial	806,602	9,567,336
Captive	805,811	5,214,433
Free	791	4,352,903
Rural	647,066	3,795,374
Captive	647,064	3,792,159
Free	2	3,215
Other Classes	85,438	3,634,164
Private Consumption	715	37,827
Wholesaling	342	11,210,112
ACR	27	2,107,920
Free and Bilateral Agreements	315	9,102,192
<b>TOTAL</b>	<b>8,537,518</b>	<b>54,807,573</b>

Table 13: Sales to final consumers

## GAS SALES

In addition to the generation, transmission, and distribution of electricity, Cemig also operates in the natural gas trading and distribution segment through Gasmig, which is the exclusive distributor of piped natural gas throughout the state of Minas Gerais. The Company serves the industrial, residential, compressed natural gas, liquefied natural gas, automotive, and thermoelectric sectors.

In 2019, Gasmig sold a total of 1,129,652,726 m<sup>3</sup> of gas, a 2.2% increase against 2018, as shown in the table below.

Segment supplied	2018 Volume (m <sup>3</sup> )	2019 Volume (m <sup>3</sup> )
General Usage	11,895,692	14,367,728
Industrial	858,397,946	745,055,783
GNC-Industrial	17,751,901	15,499,519
Automotive	41,233,082	39,803,731
GNC-Vehicle	1,288,555	678,475
Commercial (PCNR)	2,475,060	3,042,619
Homes	6,472,535	7,767,954
Co-generation	14,106,774	13,697,864
Thermal	151,123,738	289,789,054
<b>Total</b>	<b>1,104,745,283</b>	<b>1,129,652,727</b>

Table 14: Segment served and sales volume of Gasmig

## 4.3 QUALITY OF ENERGY



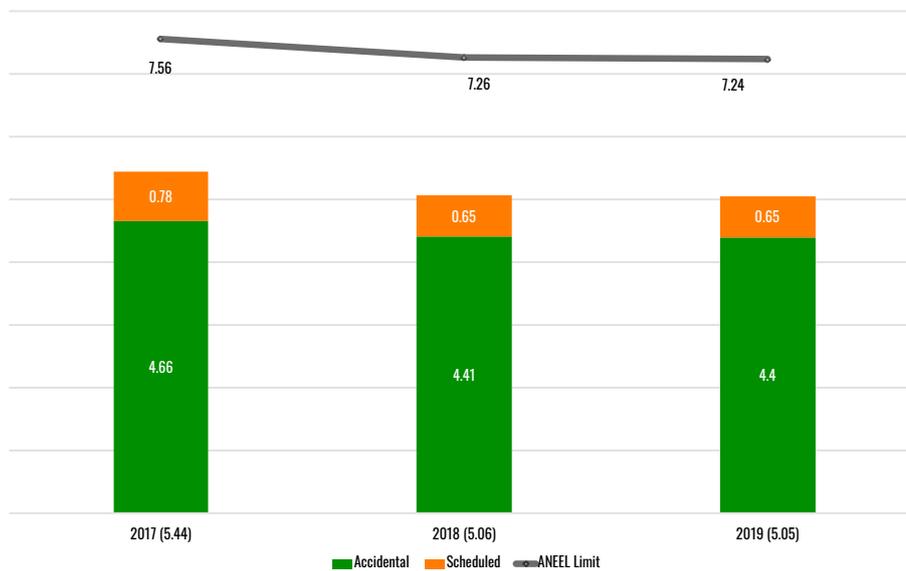
To meet the standards expected by customers and required by the regulatory agency, Cemig carries out actions and initiatives to improve operational management, organize the logistics of emergency response services, and permanently carry out inspections and preventive maintenance of substations and distribution lines and networks. The Company also invests in training its professionals, in cutting-edge technologies, and the standardization of work processes.

The Duration Equivalent Interruption per Consumer Unit - DEC and Frequency Equivalent Interruption per Consumer Unit - FEC indicators are the major benchmarks used to assess the effectiveness of the actions and initiatives carried out by Cemig regarding energy supplying quality.

These indicators show, respectively, how many times in average the consumer was left without power and the average number of hours that consumer was without power. In the analysis of these indicators, Cemig looks into the difference between interruptions caused by accidents and scheduled interruptions related to procedures for improvements in the electrical system that, eventually, demand the interruption of the energy supply.

The following charts show the evolution of the DEC<sup>64</sup> and FEC<sup>65</sup> continuity indicators. In 2019 there was an increase of 5.6% against 2018 for DEC, while FEC practically remained the same, with a 0.2% decrease, this being its lowest value when compared with the 3-year historical series.

### FEC (Frequency Equivalent Interruption per Consumer Unit)



### DEC (Duration Equivalent Interruption per Consumer Unit)

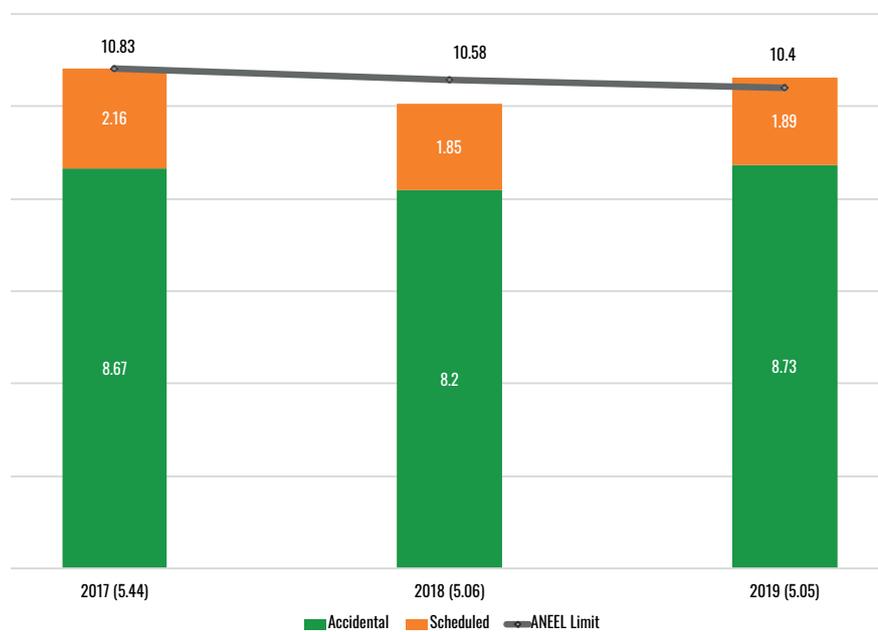


Chart 3: Cemig's DEC and FEC 2019

64 - Electric Sector GRI: EU-29

65 - Electric Sector GRI: EU-28

In 2019 FEC was below the limit stipulated by Aneel, which was 7.24 hours. The DEC limit determined by the agency was 10.53 events, which is below the rate reached by Cemig. The variation identified in the calculation of DEC in relation to the year 2018 was due to the unpredictability and variation of the purges applicable to the results.

These purges show variability mainly according to the types of weather events faced and their concentration in certain locations. However, although the DEC Aneel regulatory limit was violated in 2019, when assessing the total DEC (effectively perceived by the customers), there was an improvement of approximately one hour against the 2018 result. That is, there was a significant improvement, when it comes to the effective performance of the electrical system and service.

The constant search for improvements in these indicators is a reality in Cemig's operations. In addition to the direct impact on customer satisfaction, the extrapolation of the limits of these indicators creates a risk for the Company. Failure to meet the regulatory targets for quality indicators for 2 consecutive years or in the fifth historic year may lead to the filing of the concession forfeiture procedure by Aneel, thus involving the risk of loss of the concession.

In 2019, approximately R\$ 50 million was paid in compensation to Cemig's customers for breach of individual electricity supply continuity indicators (DIC, FIC, DMIC, and DICRI). This compensation amount was 8.2% higher than in 2018.

Year	2017	2018	2019
Amounts spend with Indemnities (R\$ M)	35.5	46.2	50.0

**Table 15:** Indemnities to Cemig's customers

## 4.4

# SAFE USE OF ENERGY



[103-2:416; 103-3:416] Despite the ongoing search for improving the safety aspects of its networks, Cemig understands that a grid in perfect technical and safety conditions, by itself, is not capable of preventing accidents from occurring, due to the system's exposure to user interference and interventions.

Cemig continuously provides information and clarification regarding the safe use of energy and promoting the population's awareness of the care necessary to live near power grids, thus avoiding accidents and saving lives.

The safe use of energy is a relevant matter for Cemig precisely because it directly addresses health and safety issues for costumers and the general population. The Company is aware of the risks and dangers inherent in the use of the power system by the population and is dedicated to preventing and monitoring the occurrence of accidents throughout its concession area. Respect for life is one of the Company's values and, in the new strategic planning, efforts to promote the safety of the population are made clear by the "Minimize Impacts on the Community" initiative. This initiative presents a specific guideline for this topic: "Expand the prevention of accidents with the population".

Based on the number of accidents with the population seen in 2018, which was considered high in relation to the average of previous years, a workshop was put together to discuss the topic. In a search for new solutions, the meeting brought together representatives from various internal

areas of the Company, such as maintenance, operation, work safety, sustainability, business communication, customer relations, and also the public authorities; directors from the operational and human resources areas also attended it.

Based on a survey of ongoing actions as well as thanks to new ideas, a technical feasibility study aimed at choosing which would be the most effective initiatives to reduce accidents with the population was carried out.

A statistical analysis of records of accidents with the population showed a concentration close to 80% of its totality in activities related to informal civil construction and, from there, it was defined which would be the action guidelines to reduce these accidents, namely:

### 1. MAPPING OUT THE AREAS WITH THE HIGHEST RISK OF ACCIDENT

Surveying and mapping out of critical areas most likely to have accidents with the power grid, based on technical information and the history of these accidents (terrain profile, Cemig's power grid, street layout, and socioeconomic aspects). Thus, a "Heap Map" identifying the priority areas for action (grid replacement, removal, campaigns) was obtained, which formed the basis for all other initiatives.

### 2. COMMUNICATION MASTER PLAN

The plan was based on information obtained from interviews with the target audience (construction workers). This interview was carried out without the workers knowing its purpose, to preserve its essence as close as possible to the reality they experience in their daily actions. Based on this information, the content that culminated in the production of a video, spot audio and print materials for use in folders, posters, and plots for various campaign materials was defined together with the communication agency. The Communication Plan resulted in:

- Broadcasting of the film via WhatsApp (Sinduscon-MG), YouTube, Facebook, and Instagram;
- Broadcasting of spots on radio stations;
- Partnership with a construction company (Lafarge Holcim);
- Campaigning across the state, with an emphasis on the Metropolitan Region of Belo Horizonte - RMBH and Vale do Aço;
- Placement in the Company's internal communication channels;
- Operations carried out involving an effort focused in worksites (partnership with the field maintenance area);
- Participation in a civil construction exhibit in the city of Pouso Alegre, in the southern region of the state.

### 3. IMAGING SURVEY STUDIES TO MONITOR ACCIDENT RISK AREAS

The contracting scope was completed in April 2019, and was the photographic mapping pilot project using high-resolution images and covering regions of known risks. The images are captured using a vehicle system and also using drones.

#### 4. TRAINING AND PERFORMANCE OF THE WORKFORCE (ELECTRICIANS, METER READERS AND SECURITY TECHNICIANS)

Participation of employees from the meter reading companies on a voluntary basis in efforts to identify risk situations close to the power grids. To this end, on December 5, 2018, security training was carried out for a group of trainer's trainers who concluded the awareness-raising process of the others by 100% in the subsequent weeks during 2019.

Potential risk situations were reported by these volunteers and were referred to the network maintenance service for correction, when applicable.

#### 5. PILOT PROJECT - GRID INSULATING LINING

A pilot project to install grid lining in the priority areas defined by the mapping study of critical areas most likely to have accidents with the power grid. From these studies, it was concluded that:

- The solution will only be recommended for places at temporary risk conditions and a short time for regularization;
- The study of the feasibility of applying this solution, considering mainly the costs related to the application and removal of lining, led to the conclusion that refurbishing of the network is the best solution when there is a deadline for its implementation.

In addition to these 5 areas of action defined in 2019, the Safety of Third Parties Macro-Project was also established with a view at eliminating situations of risk of electric shocks in the distribution networks.

This program aims at making the necessary investments for removing and/or moving away networks to eliminate the risk of accidents by direct touch, indirect touch, or other risk situations for third parties along the distribution networks. In the last year, 1,727 installations were rectified via an investment of R\$ 15 million.

**[417-1]** Cemig invests in communication about the safe use of energy, carrying out information campaigns, providing technical instructions in its relationship channels, providing teams for verification and guidance on risk situations, to inform about the safe use of electricity, and other issues.

Throughout its concession area, Cemig implements accident prevention actions, instructing the population directly via lectures and radio and TV news reports, and indirectly using different types of educational material published in electronic media, and also booklets, folders and posters.

In 2019, Cemig intensified the writing of press releases covering all activities typically carried out close to the power grid and with a special focus on educational campaigns on fires and works close to the power grid. In all, R\$ 2,640,845.65 was invested in these efforts.

**[417-2; 417-3]** All Cemig communication pieces comply with the recommendations of the Brazilian Business Communication Association - Aberje. Also, Cemig makes sure that the companies that prepare the campaigns follow the Brazilian Code of Advertising Self-regulation - Conar. Relating to that, there were no reported cases of non-compliance with regulations and voluntary codes related to marketing communications or information about Company services.

**[416-1]** Besides that, Cemig also makes various pieces of information available to the population on its website, regarding the safe use of power<sup>66</sup>, both in urban and rural areas. These precautions

**66** - Available at: [http://www.Cemig.com.br/pt-br/energia\\_e\\_voce/Paginas/seguranca.aspx](http://www.Cemig.com.br/pt-br/energia_e_voce/Paginas/seguranca.aspx)

involve the use of energy inside homes, on the streets, in the countryside, close to buildings, during rainy periods, festivities, etc. Accordingly, the Company considers that 100% of the product and service categories are subject to health and safety assessments focused on prevention and continuous improvement.

**[416-2]** There are no records of non-conformity with regulations and/or voluntary codes relating to impacts on the health and safety of products and services during the period covered by the report. The records of non-conformities that resulted in the application of fines, penalties, and warnings within the scope of power generation, transmission, and distribution are related to the quality of service provision.

## ACCIDENTS WITH THE POPULATION

After a worsening of the 2018 results, in 2019, Cemig again reduced the number of recorded accidents with the population in the Company's concession area. The 2019 result showed a 23% decrease in the total number of accidents. Among

these accidents, those that resulted in fatalities decreased by 30% against the previous year. The chart below shows accidents with and without fatalities recorded in the past 3 years<sup>67</sup>.

**67** - Electric Sector GRI: EU-25.

## Accidents with the population- History

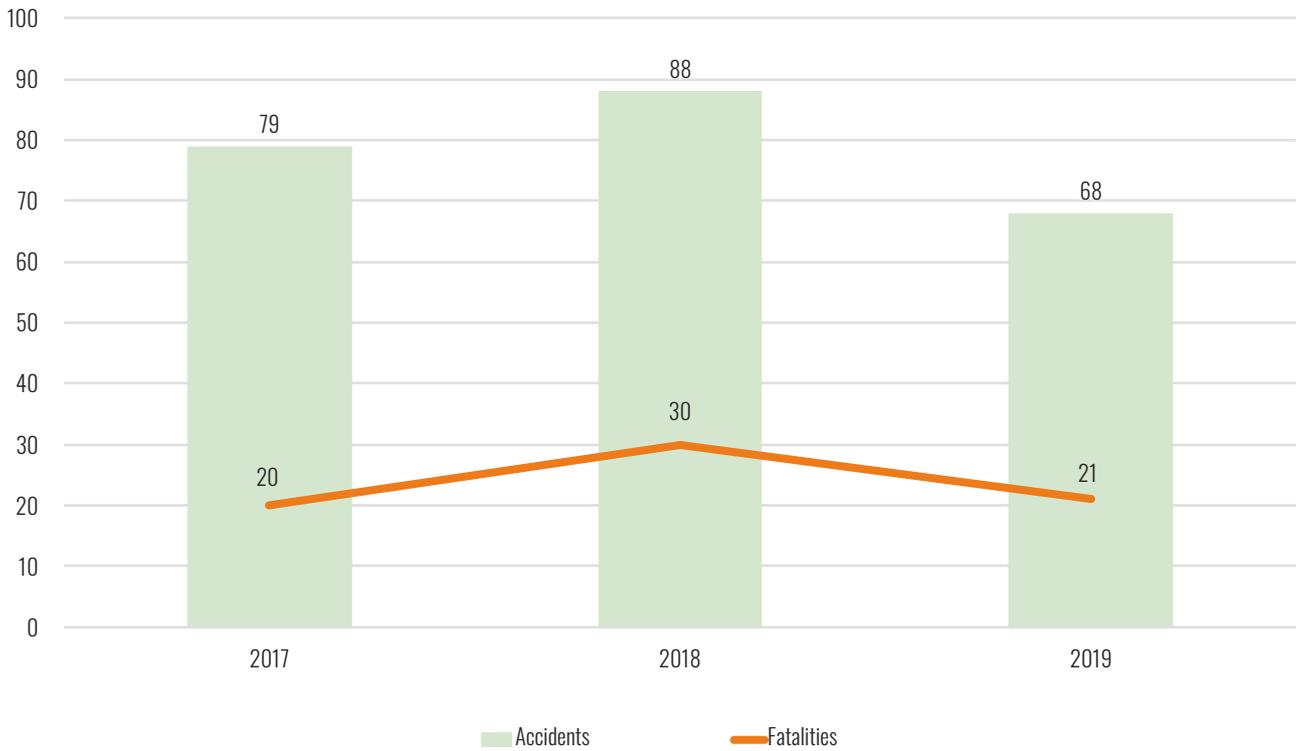


Chart 4: Records of accidents with the population

When an accident takes place, an investigation process is triggered where the conditions of the event are assessed to check for a causal link between the occurrence and Cemig's asset activity or operation. In 2019 a stratification of recorded accidents was carried out, and the table below shows all accidents with the population.

Accidents with the Population	2019	
	Fatalities	Mandatory
Building construction/maintenance	12	35
Execution of rural services	1	2
Execution of telephone services	0	9
Theft	2	4
Installation of TV/Radio antenna	0	1
Works in public roads	1	1
Others	3	12
Tree pruning	1	3
Flying kites	1	1
<b>TOTAL</b>	<b>21</b>	<b>68</b>

Table 16: Number of Accidents with the Population

Based on the 2019 records, the following behavior in the number of accidents involving the Electrical Power System (EPS) and the population, ranked by activity were noticed:

- In civil construction activities, there was a 19% reduction, and the number of fatalities was seen to drop 14.3%;
- In rural service activities, the reduction was 67%, and the number of fatalities was seen to drop 66.6%;
- Accidents involving the installation/ maintenance of radio and TV antennae dropped by 75%, with no fatalities in 2019;
- There was a reduction of 66.6% in kite flying activities, and recorded fatalities dropped 50%;
- In services activities for shared use of structures, telecommunication activities, there was an 80% increase in the number of accidents, but no fatalities were recorded;
- There was a 50% decrease in accidents involving works in public roads; however, there was one fatality recorded in 2019, whereas in 2018, no fatalities were recorded for those activities.

In 2019, there were 63 lawsuits filed against the Company related to accidents involving the population, resulting in personal injury and death. Cemig continues directing efforts toward increasingly reducing accidents with the population in order to record increasingly fewer accidents and no fatalities.

## 4.5

# PROTECTION AGAINST LOSSES



The management of energy losses is one of Cemig's strategic objectives, since they represent unearned revenue and indirectly impact the environment, like the increase in greenhouse gas emissions.

Losses represent an energy requirement for Cemig's services, since they directly influence the amount of energy that must be generated and distributed to meet a given demand. Besides, the control of electrical losses is also related to the quality of the energy supply and the safety of the population, both topics considered relevant for the Company.

The Indicator of Total Losses in Distribution - IPTD is calculated using the difference between the total energy injected into the distribution system, determined with the Electric Energy Trading Chamber - CCEE, and the total energy consumed by the market. IPTD is segmented into technical losses - PPTD and Non-Technical Losses - PPNT.

## TECHNICAL LOSSES

Technical losses are those inherent to the energy movement and distribution process along the transmission and distribution equipment and lines. Its result is influenced by the conditions of energy movement from the plants, the performance of works to improve the electrical system, changes in consumer behavior, and other factors. Technical losses are calculated using the current regulatory methodology (Electricity distribution procedures - module 7<sup>68</sup>).

The main risk associated with energy loss management is related to failure to meet the regulatory targets laid down by Aneel for the current tariff cycle (2018 to 2022).

68 - [www.aneel.gov.br/modulo-7](http://www.aneel.gov.br/modulo-7)

The major impact for the business due to inadequate management of these losses is the compromise of the Company's financial support because of lower revenues. When considering the limits imposed by Aneel in the last tariff review, it is possible to attest to the high degree posed by risk, mainly due to the adoption of simplified statistical models for the calculation of technical and non-technical losses.

The models adopted by Aneel have presented increasingly challenging limits for companies in the sector. Also, the changes made by the Federal Government in the electricity sector, which culminated in successive tariff readjustments and the current scenario of economic recession, led to restrictions on the budget required to make the necessary investments and put controls in place.

## NON-TECHNICAL LOSSES

Non-technical losses relate to deficiencies or irregularities in the measurement and billing of consumer units, as well as the existence of power hogs in the distributor utility's network. Non-technical losses are calculated by the difference between total losses and technical losses.

As the majority of non-technical losses occur in the low voltage network, Aneel defines the percentage indicator of those losses in relation to the volume of energy conveyed along the low voltage network. This way, the control and decrease of non-technical losses is essential to minimize Cemig's financial losses, which are, in part, passed on to the consumer tariff in the tariff review process.

To reduce the levels of non-technical losses, Cemig has boosted the deployment of actions to combat power hogs after a period of increase of the indicator due to the Brazilian economic recession. 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 a R\$ 88.21 million increase in Cemig's revenue.

Other actions taken in 2019 to mitigate non-technical losses included:

- Remote monitoring of 25 thousand large customers, representing a screening of approximately 45% of Cemig D's revenues;
- Replacement of 86 thousand obsolete meters, thus modernizing the measurement system throughout the state of Minas Gerais;
- Various operations to remove clandestine connections;
- Inspection efforts at strategic points in Belo Horizonte and the interior of Minas Gerais with media coverage (television, radio, newspaper, social networks, etc.);
- Elaboration of over 100 documents that show the frauds identified in measurement systems and were forwarded to the police authorities aiming at the criminalization of recurrent scammers;

Finally, in order to reach the target set for Cemig regarding regulatory losses by 2022, the company prepared an Energy Recovery Plan; and the following actions are scheduled for 2020:

- Execution of 775 thousand inspections at consumer units;
- Replacement of the communication system of 1,600 free customers, allowing for greater reliability and faster billing.
- Deployment of smart meters at 120 thousand low voltage customers;
- Replacement of 60 thousand obsolete meters;
- Inspection of 780 thousand street lights;
- Rectification of the energy supply for 20 thousand families living in seizure and low-income areas;
- Efforts to identify and mitigate sources of administrative losses.

## TOTAL LOSSES

In relation to the results of the indicators calculated in 2019, the total losses in distribution rate - IPTD was 13.57% against the total energy injected into the distribution system. Of that total, 8.77% was related to technical losses (PPTD), while 4.80% pertained to non-technical losses (PPNT) against the total energy injected into the distribution system. This result is above the 11.49% target established by Aneel for Cemig in the tariff cycle in effect in 2019.

The 2019 result was higher by 0.75 percentage points, when compared to the value of 2018, when IPTD was 12.48%. In 2022, the target determined by Aneel for Cemig will reach 11.23%, which will require continuous efforts to adjust the Company to the regulatory coverage of losses.<sup>69</sup>

69 - EU12, G3

## Total Losses in Distribution

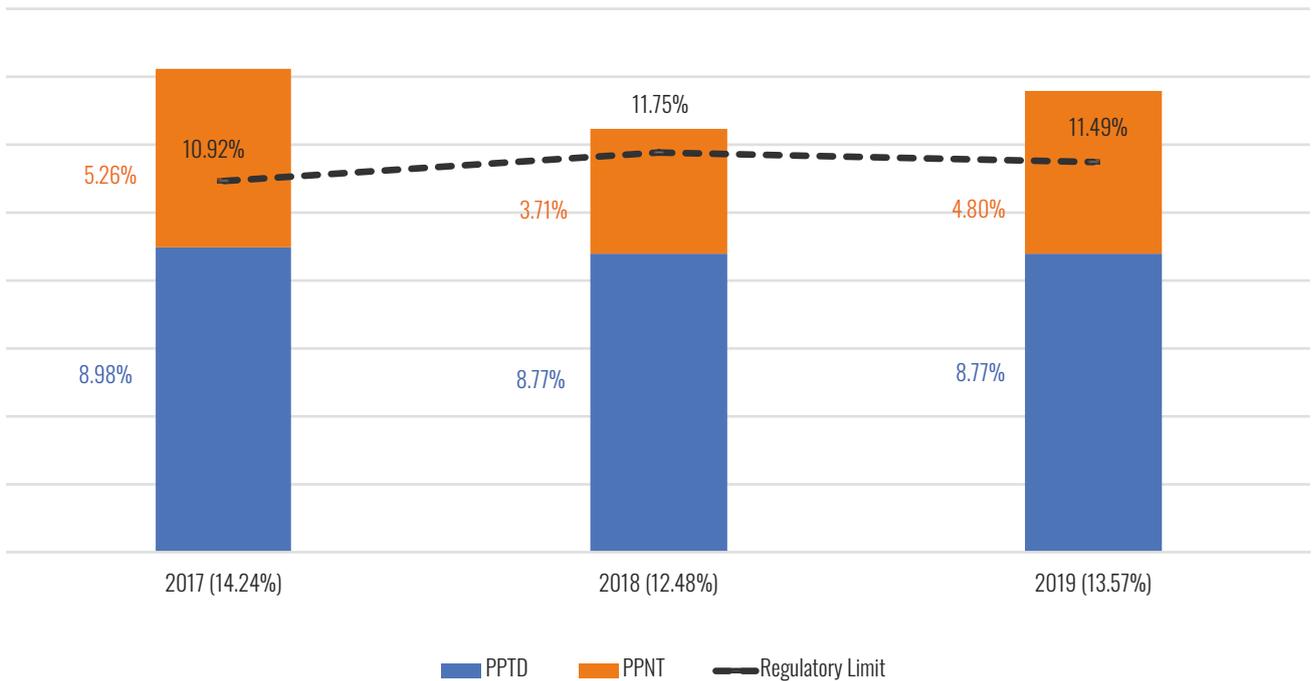


Chart 5: Total Losses in Distribution

## PAYMENT DEFAULT

Despite the still slow pace of economic upturn in Brazil, the consistency of collection actions by Cemig that have been carried out since 2017 shows an important improvement in the fight against payment default. In this context, the suspension of supply for default and non-negotiable customers must be stressed. In 2019, it was possible to carry out more than 1 million interruptions along the several consumption classes.

Cemig uses several communication and collection tools to avoid an increase in defaults. The measures adopted by the Company include telephone calls, sending of e-mails, SMSs and collection letters, the blacklisting of defaulting customers, judicial collection, and, mainly, cutting the power supply. In 2019, 1,057,638 power cuts were performed, 67,117 thousand more than in 2018. The data for 2019<sup>70</sup> are presented in the table below.

70 - GRI Setor Elétrico: EU-27

Cut duration time	Number of cuts by duration
< 48 hours	451,036
48 Hours - 1 week	213,775
1 week - 1 month	112,834
1 month - 1 year	276,851
> 1 year	3,142

**Chart 17:** Duration and number of power cuts performed in 2019

In addition to the collection tools already in place, to combat long-term default, the Company is in the process of deploying a technological platform

for resolving out-of-court conflicts for debt negotiation.

At the same time, in November, the Company provided opportunities for paid off debts by launching a campaign where it offered special conditions for negotiation (“Você em dia com a Cemig” or You up to date with Cemig) during the “Semana de conciliação no Tribunal de Justiça de Minas” (Week for settlement at the Minas State Court of Appeals). A negotiation campaign was also carried out concurrently with the release of FGTS (worker's pension fund) amounts, as authorized by Provisional Measure No. 889/2019, to encourage customers to negotiate their debts.

An experiment was also carried out using the notarial debt security protest tool to implement it in 2020, when it will also be possible to hire a company specialized in collecting composite debts. The Company is also considering the payment of bills using debit and credit cards.

As a result of these Cemig's action fronts, delinquency reached 5.1% by the end of 2019. In some months of the year, it even performed below 5%, the lowest level registered since the first quarter of 2016. This level of combating against delinquency has been satisfactory and means an improvement over the value of 5.6% calculated for 2018.

## 4.6

# RELATIONSHIP WITH CUSTOMERS

Cemig has a Consumer Council that represents the interests of all consumption classes collectively and promotes the defense of their rights. It consists of 5 full members and five deputies, representing the following classes of consumption: residential, industrial, commercial, rural, and government.

The Council is charged with giving due treatment to the suggestions received, cooperate in inspections and accept whistleblowing tips and complaints made to Cemig, based on the general conditions of power supply.

In 2019, the council held 6 general meetings to discuss relevant issues related to the legislation and regulation of the electricity sector, service indicators, ombudsmen offices, works execution plan, impacts of Normative Resolution 800, and Distributed Generation.

The Council also provided contributions to Public Hearings - AP and Public Inquiries - CP from Aneel intended to obtain subsidies on several relevant topics, such as:

- AP 001/2019 - Improvement of regulations dealing with the topic of Distributed Generation;
- AP 059/2018 - Improvement of the Binomial Tariff;
- AP 022/2019 - Improvement of the provisions for hourly DSP (Differences Settlement Price);
- AP 025/2019 - Proposal to improve the regulation of the Variation Values Account - VVA of items in portion A on energy contracting and exposure to the Short-Term Market - STM, on the other financial components, and on the rules for passing on prices in energy purchase contracts;
- CP 018/2019 - Analysis of the issue of the regulatory treatment of non-technical losses;
- CP 024/2019 - Report of the regulatory impact analysis - RIA and for the Draft Normative Resolution that establishes the indicators, efficiency criteria, and procedures for monitoring the quality of service and the Economic-Financial Management of power distribution concessionaires ;
- CP 025/2019 - Rules applicable to micro and mini generation distributed for the preparation of the draft text to Normative Resolution No. 482/2012 and section 3.7 of the Module 3 of the Electricity Distribution Procedures in the National Electric System (PRODIST).

# MAJOR RELATIONSHIP CHANNELS.

Due to the scope of Cemig's concession area (a footprint in 774 municipalities), diversity in relationship channels is an essential resource to provide quality service to its customers.

With a focus on the customer, Cemig aims at getting closer to and strengthen relations with its consumers and offer a modern and streamlined service with quality and transparency. To that effect, there are several service channels available that bring together various means, such as face-to-face, telephone, and virtual communications, as shown in the diagram below:

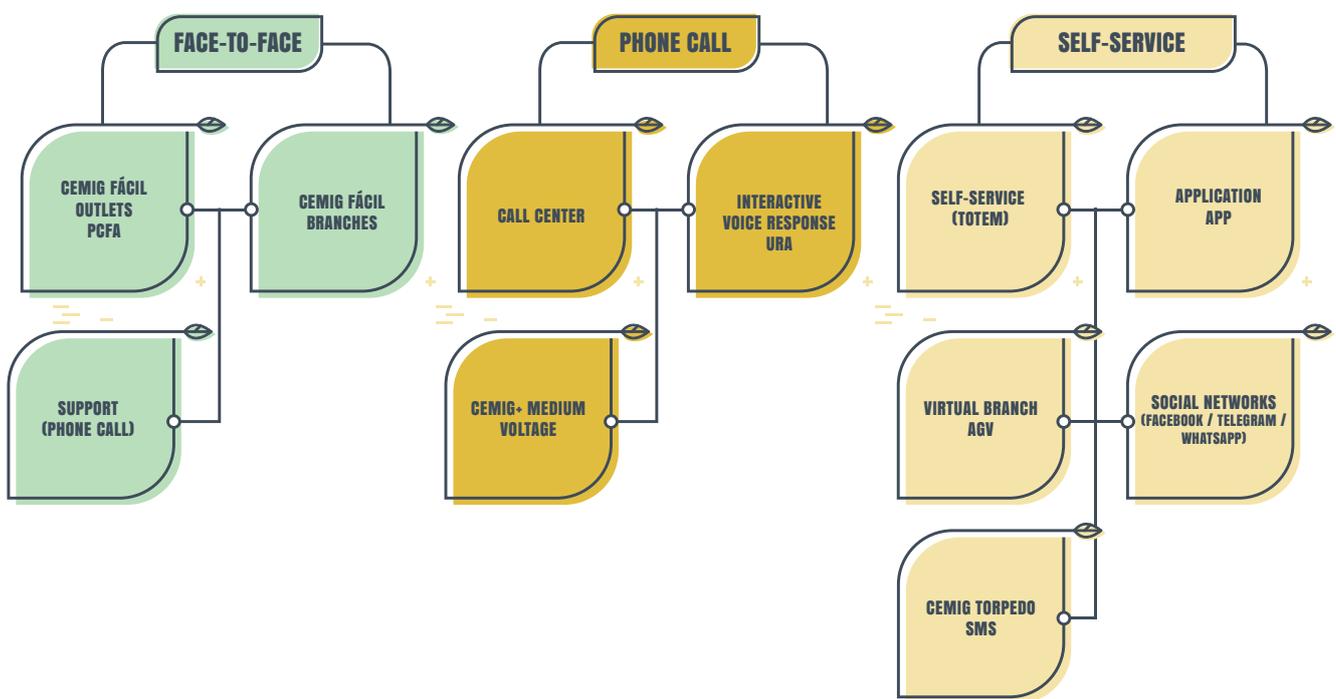


Figure 12: Diagram: Cemig's Customer Service Channel Structure

Cemig is aware of the growing demand for virtual channels, and has invested in the diversification of these service channels without, however, failing to offer other channels with the same care and quality required to guarantee consumer satisfaction.

All this apparatus is essential to provide adequate service to its more than 8.4 million customers who, in 2019, requested over 61 million services through the several channels.

One of the highlights was a 46% increase in the number of calls made through digital channels in 2019. There were 38 million interactions in 2019, against 26 million in the previous year. In the past 12 months alone, digital services amounted to 62% of calls for services and solutions.

Face-to-face service is provided by the “Cemig Fácil de Atendimento” customer service network, through 142 branches and 635 customer centers.

The telephone service is provided by “Fale com a Cemig” (Talk to Cemig), dialing 116 and 0800 721 0116 (for landline calls originating at the border of the concession area or outside the state). The channel is available to all customers, 24 hours a day, 7 days a week. This channel handles requests for emergency services related to the electrical system, information, and requests for commercial services.

Besides, Cemig provides Cemig Torpedo, a text messaging service - SMS - by which the consumer can request assistance for power outages, view debits, and send readings; requests must be sent to the number 29810. The customer just needs to enter the CPF or CNPJ number of the account holder and the keyword for the desired service to receive it.

The virtual channels include Cemig Atende application, available for Smartphones and Tablets on Android and IOS platforms. Through them, customers can access numerous services, such as recording a power outage, providing meter

readings, checking outstanding debts, getting a duplicate from their bill, and other services. Also, customers have access to information about their call register, about Cemig, energy tips, and a consumption simulator.

Today, thanks to technological advances and accessibility to the Internet, interpersonal relationships and the exchange of information happen via large communication networks. Social networks provide a speedy way of sharing information and, due to their coverage, greater familiarity of the public in using the several applications that come up on a daily basis. Based on that premise, Cemig offers services to its customers through Facebook ([Facebook.com/Cemig.atende](https://www.facebook.com/Cemig.atende)) and Twitter (@Cemig\_atende).

These channels provide greater interactivity with and among Cemig's customers. They offer a fast and objective language through which it is possible to request all services and information available, ask questions, and check energy tips. In 2019, more than 2.5 million calls were made through social networks.

Through Telegram and WhatsApp, which are totally free applications, it is possible to obtain assistance by exchanging messages in real time. This is compatible with all smartphone operating

systems and through its customers can file a power outage notification, provide their meter reading and request a second counterpart of their bill.

In order to speed up face to face assistance, Cemig provides self-service terminals there, so that customers can obtain bill duplicates, their account history, provide information on meter readings, and change their invoice due date. This service channel reached the end of 2019 with over 3 million calls.

Cemig is concerned with providing better service and interaction for its customers with special needs. That is why the Company offers customized service in its various channels, such as online channels and Talk to Cemig calling 0800 723 8007, which works as a kind of voice-activated chat for the hearing impaired. The online channels can be used by users with special needs through adapted devices and software. All service centers have adequate facilities in line with accessibility standards (ABNT-NBR 9050).<sup>71</sup>.

There were no calls answered on the 0800 number dedicated to hearing impaired consumers in 2019. The contact number, which is provided on the back of power bills, is available 24 hours a day, 7 days a week. The calls made to this number are redirected to representatives of the special channel, who are the same who answer the ombudsman office, Procon, and medium voltage customers. For the system to work, the call must be made using a compatible device/system.

**71** - ABNT is the Brazilian Association of Technical Standards. They approve the NBR, which are the Brazilian Standards for management systems procedures, for instance.

Cemig offers the option of printing power bills in Braille for the visually impaired. In 2019, 637 customers in this situation were served, with 7,413 accounts being printed in the year. The Company website is available in 3 languages: Portuguese, Spanish, and English. For customers with difficulty of access to virtual channels, there is face-to-face service at branches and Cemig Fácil Service Centers (these are commercial establishments that provide face-to-face service to Cemig's customers at pre-established times, in municipalities that do not have branches) and also by calling the 116 number<sup>72</sup>.

Also noteworthy is “Cemig Atende Empregado” (Cemig Talks to Employees), a relationship channel that involves the whole workforce and allows any employee to provide customer services, such as: consult technical information, check the progress of commercial and emergency services, and request some services, such as duplicate bills, consumption histories and debt inquiries.

**72** - Electric Sector GRI: EU-24.

In many cases, this makes it possible to solve the customer's problem at once; it is a virtual service channel that can be easily accessed using computers, tablets, or smartphones. In late 2019, Cemig Atende Empregado had 23 services available; that channel recorded over 16 thousand service requests throughout the year.

The management of the relationship channels carried out by Cemig includes monitoring and control via the Contact Panels, where it is possible to check the calls made via all channels. It is also possible to check the amount of services provided by following the logic of the Path of Understanding<sup>73</sup> established by Aneel. Thus, a tiered order of the levels of treatment by

which the consumer complaint must follow is established, namely:

- It is first dealt with by the area in charge (1st level);
- Then, by the distributor utility's Ombudsman (2nd level);
- Finally, by Aneel (3rd level).

**73** - “Path of Understanding” is what Aneel calls the flow of treatment of calls to Ombudsman Offices in the Electric Sector. This flow was established in 2014 by means of a proposal made by the National Forum of Ombudsmen in the Electric Sector and accepted by Aneel in order to strengthen the Distributor Utilities' Ombudsman Offices.

All the service channels mentioned above make up the first level for handling customer demands. At the first level, the granularity and the volume of interactions is immense, considering Cemig's more than 8.4 million customers.

If requests or complaints are not resolved at this first level, the customer has the option of calling the Company's ombudsman office. The Ombudsman Office records, instructs, analyzes and - in the best possible way - deals with the complaints made by consumers in the first level, that is, in the customer service channels of the

Distributor Utility, which have not yet obtained an unsatisfactory answer as determined in the current legislation. As a second-tier channel, the Ombudsman Office is an administrative and appellate body for settling conflicts related to Cemig's services and requests regarding the provision of services.

Finally, if the customer is still dissatisfied, they can go to the third level of service, making a request directly to the ombudsman office of Aneel, the sector's regulatory agency.

If the consumer submits his complaint outside this sequence, their request will be sent to the correct channel and they will be notified about this order for the consumer complaint process.

The data on the demands received by the Ombudsman Office in 2019, by nature and topic, are presented in the tables below.

Kind of Demand	Cemig's Ombudsman Office (2nd Level)	Aneel Ombudsman Office (3rd Level)
Contact info	14,186	24,257
Complaints	14,517	14,354
Whistleblowing	4,184	100
Compliments	36	8
Suggestions	22	20

**Table 18:** : Number of demands by kind received by the Ombudsman Office in 2019

Demand topic	Percentage Amount
Consumer Complaint	14.7%
Irregular Charges	12.8%
Refunding of Electrical Damages	9.3%
Network Extension	8.2%
Power Outage	7.9%
Connection	4.8%
Microgeneration Connection	4.0%
Voltage Fluctuation/Variation	3.2%

**Table 19:** Percentage of demands by topic received by the Ombudsman Office in 2019

74 - The input channels to contact the Ombudsman Office are: Telephone; Email; Website; Mail; Face-to-Face; Aneel.

Created in 2018, the Service Monitoring Center - CMS provides for improvements in Cemig's relationship with its customers by simplifying processes, meeting new regulatory requirements, meeting deadlines for providing services, and improving the experience of citizens who come into contact with the Company.

To allow for these improvements, CMS monitors in real time the information related to the provision of services, deadlines, complaints and the working of commercial systems, and face-to-face, telephone and virtual service channels

One of the Business Intelligence tools developed to carry out the monitoring of all commercial relationships with the customer by CMS is the Distributor Utility Operations Management - GOD. Through GOD, Cemig can see its entire customer relationship chain, from the first contact with the service channels down to all services performed internally or in the field. This systemic view of the service enables complete analyzes of the customer interaction process with Cemig from end to end.

## SATISFACTION

Customer satisfaction is inherent to the Company's culture and is the responsibility of all employees. The positive impacts from this stance are brand appreciation and good standing for the company in the markets it operates in and acknowledgment through satisfaction surveys (in particular: Aneel's Residential Consumer Satisfaction Index - IASC and Abradee's Perceived Quality Satisfaction Index - ISQP).

The customer satisfaction indexes are important tools that support the creation of initiatives and action plans for the continuous improvement of the services provided, taking the perception of Cemig's consumers into account. Improvements are implemented by senior management, when they identify of the opportunity, focusing on the efficiency of processes.

Published annually by Aneel since 2000, the Aneel Consumer Satisfaction Index (IASC) assesses the opinion of residential customers in relation to the quality of services provided by electricity distributors. The assessments of distributors in IASC 2019 were obtained via an opinion poll conducted throughout Brazil, from July 22 to November 13, and included 27,308 interviews in 596 municipalities serviced by 91 distributor utilities, when we count concessionaires and

permission-holders. According to the survey, 70.58% of Cemig's residential customers are satisfied with the services provided by the company, a result that exceeds the goal laid down by Aneel (of 70%) and is the best one obtained by Cemig since 2009. The average result of satisfaction among the concessionaires was 67.38%.

The improvement achieved in relation to 2019 was 3.17%; it is the result of a very well-planned work that involves all employees. Cemig managed to regularize its works portfolio, reduced service times, and is investing in expanding and improving networks in the regions that needed that the most. Also, the service channels are now more efficient and diversified, and communication with different publics is more human and closer. All of this was perceived by customers as positive.

## Aneel Consumer Satisfaction Index

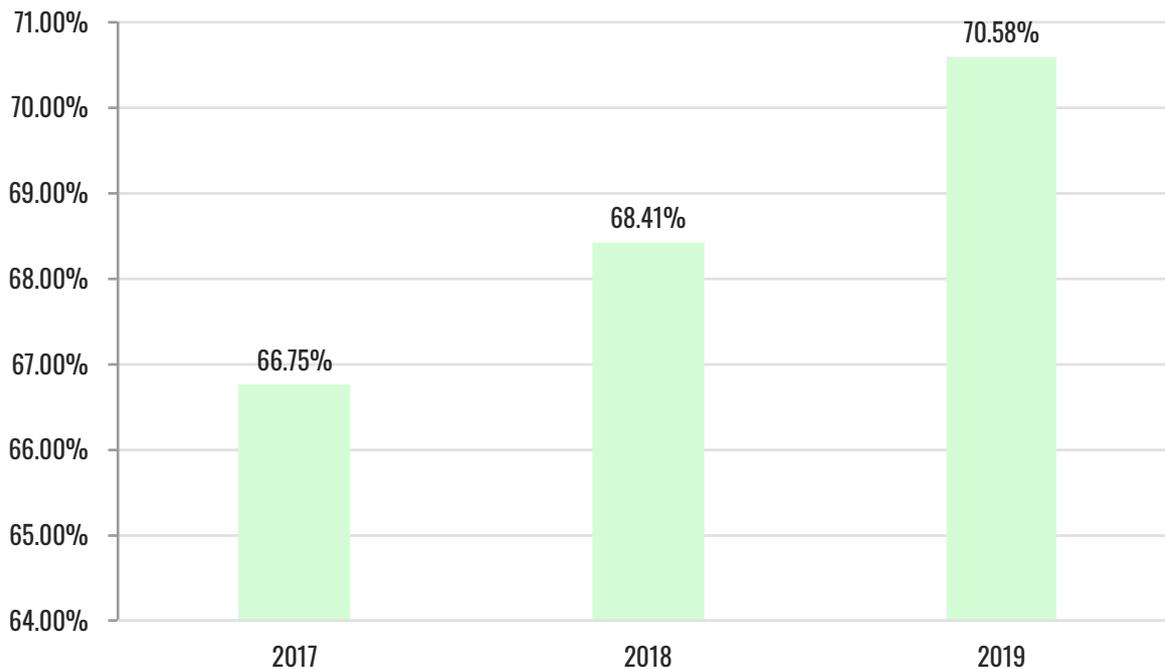


Chart 6: Chart - History of the Aneel Consumer Satisfaction Index - IASC (2017-2019)

Cemig occupies the 7th position among the concessionaires in the Southeast Region in the “over 400 thousand consumer units” category. If we consider the category at the national level, the Company occupies the 12th position. And among all the concessionaires in Brazil, Cemig ranks 29th position among 53 concessionaires included in the IASC.

Another important satisfaction indicator is the Perceived Quality Satisfaction Index – ISQP. The year 2019 saw the 21st edition of this survey conducted by Abradee to assess the satisfaction of residential customers. In that year, Cemig's ISQP decreased 11,3%. With a result of 73.1 points in that index, Cemig is among the 15 best energy distributors in Brazil with more than 500 thousand consumers.

The decrease in ISQP 2019 was noticed in all regions of Brazil, and the Abradee average in 2019 was 70.3. Abradee and Instituto Innovare crossed research data several times, but reached no

conclusion as to the reason that led the consumer to this less favorable assessment of Brazilian distributor outlets in general.

## Perceived Quality Satisfaction Index- History

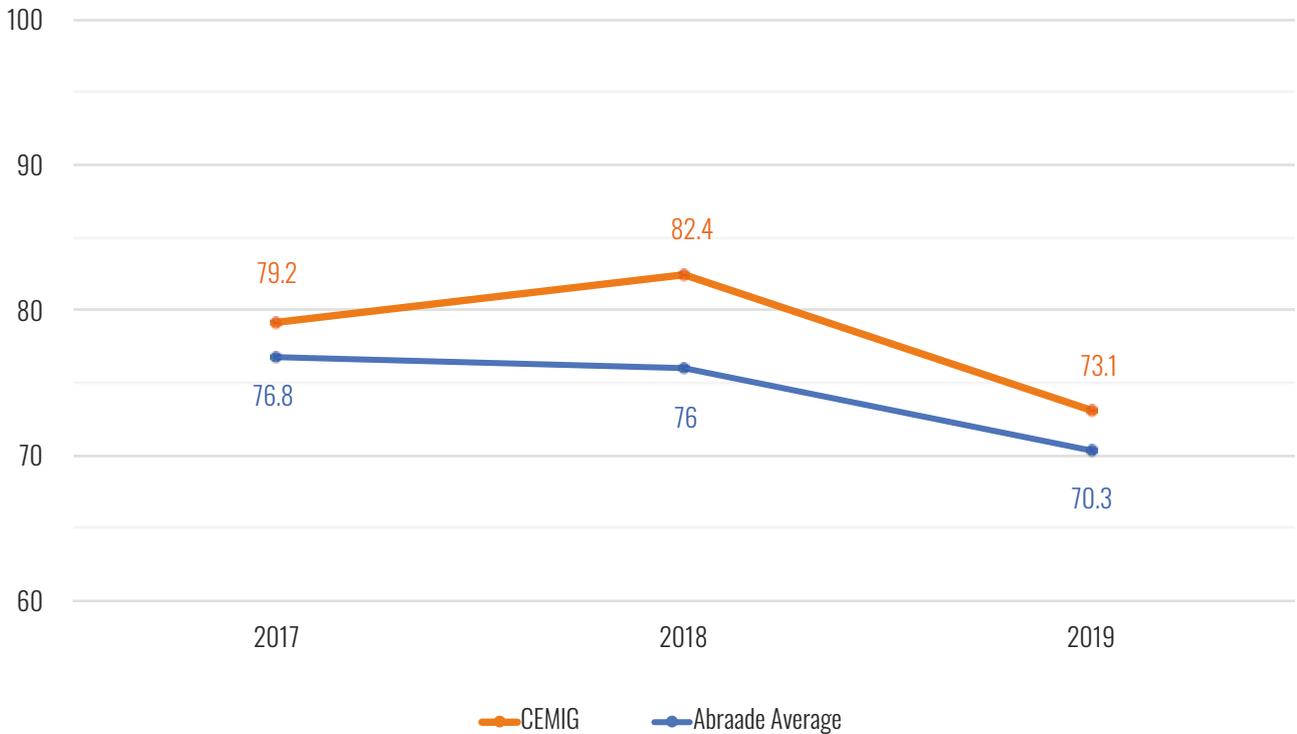


Chart 6 : Cemig's ISQP historical series and Abraadee average

Customer Satisfaction is an ongoing issue in the internal communication media, reinforcing the awareness of employees and contractors about their responsibility and contribution in this process.

Cemig D's Multifunctional Team was created in July 2018. It is made up of representatives from different areas, who are working in an integrated manner in defining and monitoring the actions implemented in order to improve customer satisfaction. The performance of this team has promoted awareness throughout the Company on the need to optimize processes with a focus on improving customer service.

## 4.7

# INFORMATION SECURITY



**[103-2:418; 103-3:418]** In a fully connected world with unlimited possibilities for accessing and using information, the entirety of Cemig's data network requires a lot of control and security. Poor management of technological resources and/or security breaches can expose the Company to great risks in case of leakage and improper use of personal data, or unauthorized access to strategic information, databases and confidential information. Information security is a permanent concern at Cemig, and it is a material topic for the 2019 report.

Concerning information related to Cemig - such as elements of its strategy, data on operations, risk analysis and privileged information - all of Cemig's information infrastructure is secured by a management system based on Brazilian Standard ("ABNT") NBR ISO/IEC 27001: 2013, in line with the best market practices. The information security management system includes processes for protecting and controlling policies, risks, communication, information classification, and information security. This way, the management of IT (Information Technology) infrastructure, operation and services is structured based on best practices defined by the ITIL model<sup>75</sup>, aiming at continuous improvement of the services that IT delivers to the business.

**75** - Information Technology Infrastructure Library, a set of best practices for the IT area.

Cemig is also subject to compliance with legal requirements of the US Sarbanes-Oxley Law, because it has shares traded on the New York Stock Exchange. To ensure compliance with this law, the Company has established a risk management and IT control system based on COBIT 5<sup>76</sup>, which is audited annually by internal and external audits.

**76** - Control Objectives for Information and related Technology 5 - COBIT 5 is a global business and management model for corporate IT governance and management.

Also, recurring actions to improve processes, communication, awareness-raising, and training help boost our information security. Cemig acts with other companies in working groups to improve and enhance information management by developing studies related to the area of data security. Noteworthy are the ABNT Safety Techniques Study Commission, the Strategic

Safety Committee for Installations of the Brazilian Association of Electricity Generating Companies (CESI/Abrage), the Electric Sector Data Protection Working Group - with the participation of Distributor Utilities -, the Brazilian Association of Electricity Distributors (Abradee), and the Temporary Cybersecurity Task Force of the

Brazilian Association of Electricity Transmission Companies (Abrate). Cemig also collaborates with the Center for Studies, Response and Treatment of Security Incidents in Brazil - Cert.br, through its Computer Security Incident Response Team - CSIRT.

In 2019, several preventive actions were developed to prevent possible cyber-attacks. With the performance of 4 vulnerability analyzes and an intrusion test on the systems uploaded to the Internet, the Company identified and carried out treatment of non-conformities, thus providing greater security for the services offered via the web. As part of efforts to improve cybersecurity controls, the inventory of Cemig GT's assets was carried out, which ensured compliance with the requirements defined by the National Power System Operator - ONS.

In 2019, a cybersecurity diagnosis of the System Operations Center was carried out, as well as assessments of Cemig GT's main substations. The diagnosis assessed conformity of the operating procedures to the best market practices and the level of protection against cyber attacks at Cemig's facilities. Besides, Cemig conducts annual communication campaigns geared toward its entire workforce, to raise awareness on information security risks and foster a culture of prevention.

In 2019, The "Em dia com a segurança da informação" (Up to date with information security) even included digital lectures and campaigns published on the Company's Intranet and also on workstation screens. In addition to providing information on risks and prevention in the use of technologies, the campaign messages highlighted the employees' fundamental role in maintaining a safe environment.

Also, two phishing<sup>77</sup> simulation campaigns were carried out as a way to ensure ongoing learning about safe workforce behavior. Messages simulating a phishing attack were directed to the emails of users, who received an educational message when they clicked on the fake link. In addition to being educational in nature, the results allowed for the

monitoring of the effectiveness of awareness-raising campaigns.

**77** - Practice in which false e-mails or false links are sent in order to reveal the individual's personal information, such as passwords, card numbers, documents, bank accounts, etc.

Cemig has been conducting an annual information security survey for 13 years to verify the adequacy of the environment and technology to good information security practices. In a search for constant improvement, the methodology to calculate the indicator is being updated, using as reference a new model based on the NIST Cyber Security Framework and the knowledge base of the Center for Internet Security, which is more complete, objective, and comprehensive. As of 2020, Cemig will use this methodology to carry out its information security assessment. As it is a well-known methodology in the market, it will even be possible to do benchmarking with other companies and organizations.

Another important front in terms of data security is linked to third party information managed by Cemig. In December 2019, Cemig started the project to adapt to the General Data Protection Law - LGPD (Law No. 13,709) enacted in Brazil on August 15, 2018. LGPD is a law of international relevance, which provides for the protection and privacy of personal data of all Brazilian citizens. The law is based on the General Data Protection Regulation, better known as GDPR, a European law that came into force on May 25, 2018 intending to protect the privacy of citizens' data across Europe. In Brazil, the deadline for companies to adapt to the new legislation is August 2020.

Respect for privacy is LGPD main foundation. The law provides that companies carry out the treatment of personal data made available to them (from customers, employees, suppliers, etc.) according to the prescribed guidelines and establishes rights for the holders who own such information.

To help it in this restructuring journey, Cemig hired a specialized consultancy, which will be responsible for conducting the diagnostic activities and implementing the necessary adjustments to the law.

Cemig works to enable an adequate Data Governance process, whose final purpose, in short, is to deploy and adapt the requirements introduced by the law to the Company's structure. This objective will be achieved by the creation and adaptation of policies, standards and procedures and, at Cemig, it will be implemented in 5 phases of action:

**Phase 1 - Mobilization and Planning:** Prepare and present detailed activity planning, identify focal points for mapping, and adapt activities.

**Phase 2 - Data Mapping and Risk Analysis:** Analysis of legal risks, analysis of the inventory of personal (applicable) data containing systems or technological repositories for the storage of personal data, identification of GAPS, and analysis of the legal bases applicable to the records of processing operations of mapped personal data.

**Phase 3 - Assessment of GAPS, analysis of legal bases and data governance:** Analysis of LGPD-related processes to identify risk exposure and maturity level, such as information security policies, standards and procedures, consent management, data transfer/security and privacy assessment, Security and Privacy Incident Management, Compliance Management, access management applied to systems, encryption and anonymization.

**Phase 4 - Building the program:** Presentation of the strategy and action program for compliance with the LGPD and governance structure, including addressing privacy and data protection issues with stakeholders.

**Phase 5 – Implementation of LGPD obligations,** covering all gaps identified in the previous steps.

To date, activities related to Phases 1 and 2 have been completed. 3 and 4 are already underway, and phase 5 will start in 2020. As a product of this process, by August 16, 2020, Cemig will implement all the requirements contained in the Law, including:

- Information life cycle management;
- Alignment and definition of information security strategies;
- Management of holder's applications;
- Security and privacy incident management;
- Data leak notification procedure;
- Design of the structure required for operating the process;
- Risk management (privacy by design and DPIA - impact reports);
- Third-party management - data transfer;
- Consent management;
- Drafting of privacy policies and strategies (in line with the compliance policy, corporate risk management policy, and internal controls/SOX);
- Preparation of training and awareness content, in order to even up knowledge on law enforcement, rights, duties, and responsibilities of stakeholders.

**[418-1]** In 2019, no record of complaints for breach of privacy that may have caused any type of damage to the Company's customers and employees was identified. Cemig does not sell or make commercial use of its customers' data.

## 4.8

# STRUCTURE AND TARIFF ADJUSTMENT

The “tariff” topic is very relevant for Cemig, as the value of tariffs charged directly influences the Company's economic and financial situation - since it is its major source of revenues - and its ability to deploy programs and projects. The methodology adopted by Aneel to define regulatory tariffs and revenues assumes that the defined revenue is enough for the concessionaire's economic and financial balance.

However, the risks associated with the topic are precisely those inherent to the rationale of regulation by incentive, which simulates competitiveness in the market, requiring the Company to always aim for efficiency and best practices.

Another risk-generating factor in regulated businesses is the possibility of the enactment of new regulatory rules caused by changes in policies in the electricity sector, thus changing the established scenario. In order to anticipate and mitigate such regulatory risks, actions are

taken to monitor and analyze the evolution of the regulatory scenario that governs electricity services, proposing changes to maximize and safeguard the Company's results, in line with the interests of customers and consumers.

The tariff management approach is carried out by active participation in Aneel's public hearings, on issues relating to economic and financial regulation, and at the Ministry of Mines and Energy by pointing out possible negative impacts not provided for in the proposals and contributing to improvements.

Interaction efforts before Aneel in tariff processes are also part of the area activities, thus contributing to a proper tariff repositioning. Other opportunities for tariff management

actions include internal actions in support of the Company's areas to understand the regulatory rules and help in the management of the Company's several processes.

Aiming at a tariff management approach, the management department responsible for the economic regulation of the Company actively participates in the formulation and calculation of indicators, among which the following stand out:

- **IRCO D:** it gauges the percentage of Cemig D's costs and expenses that are included in the tariff scope;
- **IRCO T:** it gauges the percentage of Cemig Transmissão costs and expenses that are included in the tariff scope;
- **D Disallowance:** Disallowance Rate of Investments in Distribution;
- **GT Disallowance:** Disallowance Rate of Investments in Generation and Transmission.

These indicators are periodically assessed by the Board of Directors and possible points for improvement and deviations are evaluated within the continuous improvement process. This way, preventive and/or corrective measures are adopted to guarantee the adherence of management mechanisms to business objectives. All of Cemig regulatory processes are monitored and regularly followed-up by the Regulatory Affairs Committee - CAR, which is made up of representatives from all boards. This Committee is responsible for assessing and proposing contributions from the public hearings at Aneel and the Ministry of Mines and Energy.

Therefore, the revenue defined and approved by Aneel for the Distribution and Transmission businesses takes the form of tariffs and the Annual Permitted Revenue - RAP, respectively. For the Generation business, especially as provided by Law No. 12,783 from January 11, 2013, the topic has become extremely relevant.

## CEMIG D

Cemig D's tariffs are regulated and supervised by Aneel, as it works in a regulated market. In addition to setting tariffs, the Agency also determines the cost associated with each type of consumer. This is used to calculate the several tariffs for the different consumption classes.

In the process of defining tariffs, Cemig D acts in defense of the Company before Aneel to have the costs and investments necessary to provide a service with quality and availability recognized.

The revenue billed by the tariffs includes coverage for 2 types of costs: manageable costs and non-manageable costs.

Manageable costs are the distribution operational costs, the remuneration of shareholders, and the invested capital write-back share. Non-manageable costs, on the other hand, are those that the distributor collects from the consumer and passes on to other players in the sector. These are the purchase and movement (transmission) of energy and sectorial charges.

## TARIFF ADJUSTMENT

Tariff adjustment aims at passing on non-manageable costs in full and to adjust for inflation the manageable costs that were determined in the Tariff Review. The adjustment happens on an annual basis, and the Review, every 5 years, as defined in the contract. The manageable cost adjustment index is IPCA (Wider Consumer Price Index). Then, the X Factor to capture productivity according to the methodology of the regulatory price-cap model is netted out from that amount.

From the amount charged on the invoice, 22% are held at Cemig D and is intended to pay interest on the investment, and pay for depreciation and costing of the Concessionaire. This portion is called Portion B. The remaining 78% are called Portion A and are carried over to pay for energy purchase (28.7%), sector charges (12.8%), transmission costs (5.7%), together with ICMS (24.4%) and PASEP/COFINS (6,1%) taxes.

As determined by the Federal Constitution, Cemig is obliged to collect taxes directly from the consumer's account and pass them on to the competent authorities. In Minas Gerais, consumer units registered as low-income residential units,

as defined by Aneel, are beneficiaries of the Social Tariff and whose monthly billing corresponds to an average consumption of up to 3 kWh per day are exempt from ICMS.

The Contribution for the Cost of Public Lighting Service (CIP) is also charged. Its amounts are defined by city halls. Cemig only collects the public lighting fee and passes it on to the municipality, which is responsible for the services of design, implementation, expansion, operation, and maintenance of public lighting facilities.

## TARIFF FLAGS

Tariff flags refer to a system established by Aneel to signal to consumers the actual conditions and costs of electricity generation in the month of consumption, allowing them to respond more rationally to the price of energy. The mechanism came into effect in January 2015, as determined by sub-module 6.8 of the Tariff Regulation Procedures - PRORET.

The Tariff Flags system is represented by a green flag, which indicates favorable conditions for power generation without implying a tariff increase, and by the yellow and red flags, which

indicate less favorable and critical conditions for energy generation, resulting in additional charges beyond the Power Tariff.

The distributor utilities pass on the funds from the billing of the Tariff Flags to the Centralizing Account, which is managed by the Power Trading Chamber - CCEE. The funds available in this account are passed on to the distributors, according to the need to cover for the costs of power generation by thermoelectric source and exposures to the short-term market.

In addition to the tariff sign, the Tariff Flag System is an important mechanism to mitigate the mismatch between expenditure and tariff coverage in power purchases.

## CEMIG GT

Cemig GT's transmission revenue consists of the sum of the revenues from all transmission assets. Thus, the Concession Agreements determined the Permitted Annual Revenues - RAPs of the assets in the existing system, which constituted the initial revenue responsible for the concessionaire's economic-financial balance.

As it operates in a regulated market, the revenue from Cemig GT's transmission assets is established by Aneel, and is updated in the periodic tariff review, extraordinary tariff review, and annual tariff adjustment processes. Similar to what happens at the Distributor Utility, the Company works with the Regulatory Agency to recognize its costs in the processes of reviews, readjustments, and ratification of RAPs for new assets.

The transmission revenue annual adjustment takes place in July of each year, except when there is a Tariff Review. This process aims at adjusting the RAP for inflation by adding to it the revenue from the boosts and improvements that went into commercial operation in the past tariff cycle (July of the previous year to June of the adjustment year) and calculating the Adjustment Portion. The regulatory model methodology is Revenue-cap.

The inflation rate used by Aneel to readjust Cemig GT's revenue is the IPCA. Besides concession number 006/97, Cemig GT also has a concession for a tendered substation, SE Itajubá, whose readjustment also occurs in July, using IGP-M (General Market Price Rate).

# 5

## EMPLOYEES

**[103-2:401; 103-3:401]** Cemig recognizes the importance of people for the success of the Company's business strategy, competitiveness, and prominence in the sector. The engagement of employees <sup>78</sup> with the Company's strategy is essential for Cemig to achieve its long-term vision. At Cemig, people management includes monitoring staff, training, and increasing employee productivity, reducing the average cost of payroll, meritocracy, accountability, and the health and safety of company employees.

Cemig's people management model is based both in its strategic planning and in Human Resource Policy. The model guides initiatives and programs geared at adding value to the business, aiming at gaining efficiency in people management and at quality assurance and availability of staff to provide services to consumers and the population of Minas Gerais.

**78** - People who work for Cemig under a permanent and full-time employment contract.

Below are the major initiatives from 2019:

- **JOBS, CAREERS AND COMPENSATION PLAN (PCCR):<sup>79</sup>**

It is made up of a set of jobs linked to business needs and career plans; the plan also allows employees to have an outlook of their careers in the medium and long term, and includes a salary structure and lists in keeping with both the Company and the market situation. In 2018 the PCCR was updated and, in 2019, its dissemination and application involving transfers, progressions, and promotions of staff. With the organizational restructuring carried out in August 2019, a new quantitative and qualitative sizing of the workforce was defined, and the need to review the PCCR was identified; this will be done in 2020.

**79** - It was implemented in the Company in September 2018.

- **SCHEDULED VOLUNTARY SEVERANCE PROGRAM – PDVP 2019:**

It was launched in December 2018 and ran until 31/Dec/2019. See the section on the program, below.

- **MANAGEMENT ADEQUACY PLAN – PAQG 2019:**

It laid down the conditions for a specific group of employees to apply for accession to the Scheduled Voluntary Severance Program - PDVP, applicable to the termination of Employment Contracts of the employee's own accord. The Plan targeted solely employees who have been removed from their managerial position (Managers, Superintendents) as a result of Potencializa Project, which determined removal from office of Managers and Superintendents or relocation of Superintendents the position of Manager, aiming at adapting the organizational structure and costs to market parameters.

- **PUBLIC TENDERS FOR HIRING OCCUPATIONAL HEALTH DOCTORS, ELECTRICIANS, JANITORS, MEDIUM LEVEL TECHNICIANS, PROFESSIONAL TECHNICIANS, AND UNIVERSITY:**

Valid for two years, renewable for an equal period, follow the PDVP to reestablish the staff and aims at ensuring the continuity of the Company's activities. They were held in 2018, and their results were in effect in 2019.

- **BASIC STAFF – QBP:**

The Basic Staff is a People Management tool whose main challenge is to maintain a quantitative and qualitative in-house and outsourced staff by area, without compromising the quality of the services provided, in line with the business results (tariff coverage and personnel costs). The goal is reaching an ideal situation determined for the next 2 years for the actual workforce.

## LEADERSHIP DEVELOPMENT PROGRAM

The Cemig's Leadership Development Program is one of the Strategic Human Capital Strategic Planning initiatives, and aims at:

- Applying the principles of Cemig's leadership (empowerment, communication, meritocracy, teamwork and orientation toward results);
- Developing strengths and skills, considered as critical for the senior and middle management positions;
- Enabling participants to understand the challenges and possibilities inherent to a management career;
- Increasing participants' ability to influence their superiors, peers, subordinates and customers;
- Improving the delivery of results by superintendents, administrators and managers in their areas of expertise;

- Developing the skills required to stay focused on results;

- Developing skills related to the management and development of a work team, such as assertive communication, conflict management, feedback and delegation;

During 2019, 50 managers and/or superintendents participated in the CEO Forum 2019 put together by AMCHAM<sup>80</sup>. Also, the Executive MBA Graduate Course<sup>81</sup>, Specialization Program in Business Management, held by Fundação Dom Cabral, was started for 72 managers/superintendents/senior analysts.

These actions aim at promoting the continuous development of the Company's leadership using a behavioral approach based on entrepreneurship, innovation, inspiration, participation, trust, commitment, and alignment between leaders and followers. This is how Cemig achieves excellence for its leaders.

80 - American Chamber of Commerce.

81 - Master in Business Administration.

## 5.1 EMPLOYEE PROFILE



**[102-7; 102-8; 405-1]** In 2019, Cemig had 5,596 own employees. This number represents a reduction of 8% compared to 6,083 employees in 2018, meeting the expectations of the Company for the adequacy of the workforce. Of this total, 4,851 are men (86.6%) and 745 are women (13.3%). Regarding the presence of women in leadership positions, even though there are no women on the Executive Board, women occupied 10.2% of the jobs considered to be management positions within the Company. Among these, 9.3% are managers and superintendents (top management positions), 8.5% are in management positions (first level) and 8% in leadership positions in the revenue generating functions.

Number of employees							
Company	Job category	Total		Males		Females	
CEMIG	Leadership	185	3.3%	166	3.0%	19	0.3%
	Graduate level	1147	20.5%	896	16.0%	251	4.5%
	Technician level	4264	76.2%	3789	67.7%	475	8.5%
<b>TOTAL</b>		5596	1	4851	0,87	745	0,13

Table 7: Number of employees by job category\ and gender

Black, mixed-race, oriental, and indigenous employees, in turn, amount to 35.8% of Cemig's in-house workforce. In terms of gender and race diversity, at the end of 2019 the workforce had 3.9% of black and brown women and 30.7% of black and mixed-race men. Regarding representativeness in management positions, black and mixed-race employees occupy 15.6% of those positions.

In terms of inclusion of the 50+ group, Cemig has the seniority and experience of 1,060 professionals over the age of 50, a figure amounting to 18.9%. Employees aged between 31 and 50 years, in turn, total 3,909 people, 69.9% of the total, and the other 627 employees are under 30 years old, amounting to 11.2%.

As for stratification by region, considering the nature of the Company's business and current operations, 99.7%, amounting to 5,581 employees of the staff, are concentrated in the state of Minas Gerais, with only 0.3% acting out of that state.

Regarding the Company's directors and board members, all are over 30 years old, 25% of whom are in the 30 to 50 age group and 75% are over 50 years of age. In terms of gender diversity, the staff is made up of 23 men, which amounts to 96% of the total of employees in those positions. In 2019, there is only one woman in a governance position with a chair in the Company's Board of Directors.

Stratification by race between directors and council members is currently not available. This is not identified via self-statement and is not mandatory; in Cemig's profile surveys there were no answers to that effect for any of the respective positions.

In addition to managing its own staff, Cemig also manages the contracts and labor relationships of employees hired as Temporary Workforce - MOT, interns, and minor apprentices.

MOT contracts are executed in situations where provisional replacement of regular or permanent

staff or complementary demand for - scheduled or unscheduled - services are required, and under Brazilian law<sup>80</sup>. These contracts are executed by an outsourced company and last for 180 days, renewable for a further 90 days. In 2019, they totaled 57 57 people, a number that amounts to about 1.0% of the total of employees.

82 - Law No. 13,429/2017

In 2019, the activities performed by temporary employees in 2019 do not amount to a significant portion of all activities that make up Cemig's operation. Outsourced employees are managed by specific contracts in the outsourcing business areas, including concerning health and safety issues, a topic present in the various contracting stages. More details are available in the Suppliers chapter of this report.

Cemig's Internship Program helps develop students from vocational and university courses professionally, offering them the opportunity for the hands-on application of theoretical knowledge.

Minor apprentices, in turn, join the Company via the Cemig Apprenticeship Program, which professionally trains socially deprived teenagers,

under the supervision of experienced Cemig's employees. Regarding minor apprentices, their hiring is intended to meet a legal obligation pursuant art. 429 of the CLT (Brazilian labor regulations) number of apprentices equivalent to 5% and a maximum of 15% of the workers in each establishment, whose jobs require professional training.

In 2019, in meeting that legal obligation, Cemig executed its contracts for minor apprentice with São João Bosco Inspeção - Centro Salesiano do Menor (CESAM).

Minor apprentice	
Cemig H	2
Cemig D	106
Cemig GT	14
<b>Total</b>	<b>122</b>

Interns	
Cemig H	2
Cemig D	117
Cemig GT	66
<b>Total</b>	<b>185</b>

Table 20: : Other outsourced staff

**[401-1]** Despite a decrease in the number of employees in 2019, 272<sup>83</sup> new employees started working for the Company. Vacant positions were filled through 3 Public Tenders held in 2017, with respective addenda published in 2018 and 2019.

In 2019, there was an increase of 51 positions at the operational level and 153 positions for middle education, vocational middle education, and university-level positions. On the other hand, 762 employees were terminated in 2019, including dismissals, pensions, and voluntary severance actions. In the same year, employee turnover, which measures the ratio between new employees who are hired and those who stopped working at the company, was 8.91%<sup>84</sup>. Staff detailing and stratification of information is given below.

**83** - In addition to new hires, hiring data include disability retirement returnees and reinstated employees.

**84** - This is calculated as follows: the number of people hired (A) and dismissed (D) are added during the year, and the total is divided by 2 the result is and multiplied by 100. This result should be divided by the Average Staff (EM), which is obtained by adding the existing staff in the months of the period considered, divided by the number of samples.  $\frac{[(A+D)/2]*100}{EM}$

		Total Number of Employees	Percentage	Total Number of Dismissals	Percentage	Total Number of Hirings	Percentage	Turnover
Gender	Male	4851	86.7%	680	89.2%	251	92.3%	9.2%
	Female	745	13.3%	82	10.7%	21	7.7%	6.7%
Age Range	Below 30 years	478	8.5%	20	2.6%	166	61.0%	19.4%
	Between 30 and 50 years	3943	70.4%	266	34.9%	87	32.0%	4.5%
	Over 50 years	1175	21.0%	476	62.4%	19	7.0%	21.0%
Region	Minas Gerais	5581	99.7%	759	99.6%	272	100.0%	9.2%
	Other regions	15	0.3%	3	0.4%	0	0.0%	10.0%
<b>TOTAL</b>		<b>5596</b>	<b>100%</b>	<b>762</b>	<b>100%</b>	<b>272</b>	<b>100%</b>	<b>8.91%</b>

Table 8: Dismissals, Hirings and Turnover Rate

In compliance with State Law No. 11,867/95, Cemig allocates 10% of the vacancies offered in public tenders to people with disabilities (PwD). However, in 2019, only 3% of Cemig's workforce was made up of people with disabilities (185 people). The small number of people with disabilities in the workforce is due to the Company's

legal framework and hiring requirements. As many jobs in the Company are of operational in nature, they require motor skills that are important for properly carrying out the activities. That is why the possibilities for hiring PwD people are limited.

Cemig, via its Diversity Appreciation Group established in 2019, is studying alternatives to increase this percentage of PwD in the company.

Employee Category	2017	2018	2019
Handicapped People	83	92	90
Rehabilitated People	117	98	95
<b>TOTAL</b>	<b>200</b>	<b>190</b>	<b>185</b>

Quadro 21: PcD e Reabilitados contratados pela Cemig

## 5.2

# REMUNERATION AND BENEFITS



[102-36; 102-37; 202-1] Cemig remunerates and provides benefits for its employees in line with the best market practices and aiming at gender equity. The Company conducts market wage researches to build the wage list that will be used to remunerate its employees. Wage surveys are carried out by consultants hired<sup>85</sup> by Cemig for that purpose. Institutions representing stakeholders are also involved in discussions

**85** - The relationships of consultants is specifically geared to a survey of salaries and benefits in keeping with market levels.

on remuneration, like unions, employee representatives, and managers of the people hiring and management area. All claims made by unions and employee representatives, whether of an economic nature or not, are negotiated at each base date, or at the end of the collective

bargaining agreement. The result of meetings related to the negotiation process is notified to the Company by the unions of each category.

Finally, the strategy for determining remuneration and building the wage list is carried out by the Executive Board, supported by the technical area and the consulting firm. This can be seen, for example, in the data on the proportion between the lowest base salary of the companies of the Cemig Group, which mainly performs in Minas Gerais,<sup>86</sup> and the Brazilian minimum wage in 2019.

**86** - 99.73% of Cemig's employees work in Minas Gerais, this state being its major operation location.

Group company	Males	Females
Cemig Holding	1.98	2.46
Cemig GT	1.98	2.51
Cemig D	1.98	2.46

**Table 22:** Ratio between Cemig's lowest salary and the Brazilian minimum wage in 2019

The lowest base salary paid to men (at Cemig D, Cemig GT, and the holding company) is R\$ 1,976.00, while women receive at Cemig D and the holding company a base salary of R\$ 2,451.35, and at Cemig GT, R\$ 2,500.38

**[102-38; 102-39]** Concerning the ratio between the total annual remuneration of the highest-paid individual in the Company and the total annual remuneration of all employees (excluding the highest paid), the rate being 7.39.

The relation between the percentage increase in the annual global remuneration of the highest-paid person in the Company against the average wage raise of other employees, shows very matching figures: the ratio is practically equal to 1.

The increase in the remuneration of the best-paid person in 2019 was 0.18%; the increase in average annual total compensation of all employees in the year before that covered by the report, on its turn, was 0.17%.

**[201-3; 401-2]** As Variable Remuneration, Cemig grants every 2 years a Profit and Income Sharing (PLR) agreed between the Company and its employees, as represented by their unions. The distribution of PLR is based on the achievement of specific goals for each area and common corporate goals in line with the company strategic objectives.

In addition to the compensation programs, Cemig offers a series of benefits managed by both the Company and the Cemig's Complementary Pension Foundation (Forluz) and Cemig Saúde. They are as follows:

- **BENEFITS DIRECTLY MANAGED BY CEMIG:**

fortnightly salary advance; advance of the Christmas bonus in any month of the year until October of the current year, when requested by the employee; advance of salary on return from vacation - paid in installments; reimbursement of expenses for disabled employees and/or dependents; education allowance; funeral allowance; extended maternity leave of 60 days (total of 180 days); extended paternity leave of 15 days (total of 20 days); special paternity leave in cases of incapacitating illness of the mother; <sup>87</sup> salary additional for employees on INSS leave; leave of 5 consecutive days due to civil marriage, in place of the 3 days required by law; 5-day leave to stay with a sick relative; meal/food tickets maintained in case of absence from work for 6 months and, in case of accident at work, for 30 months; daycare allowance from the end of the INSS leave until the child turns 7 years of age for female employees, widowed employees who have custody of their children, employees married to a disabled wife, and single, divorced or legally separated employees with custody of their children.

**85** - In exceptional cases, paternity leave may be extended for up to 30 (thirty) days from the child's birth date. The extension period will be determined by the Company's Medical and/or Social Service. The fact must be notified to the management immediately or within 2 business days after the mother is shown as incapable of caring for the child.

- **SPECIAL CARE PROGRAM - PAM:**

Cemig is concerned with meeting the special needs of employees and/or their family members with disabilities and provides guidance and support through the Special Care Program - PAM. As part of PAM, Cemig reimburses 50% of the expenses of employees and dependents with physical and intellectual disabilities. Reimbursed expenses, subject to prior analysis by Cemig's Medical Service, may include tuition from specialized schools, therapeutic alternatives (art therapy, music therapy, play therapy, hydrotherapy, equine-assisted therapy, swimming, physiotherapy, and speech therapy), prostheses, disposable diapers, and others.

- **BENEFITS MANAGED BY CEMIG'S COMPLEMENTARY PENSION FUND FOUNDATION CEMIG – FORLUZ:**

Private Pension Plan.

- **BENEFITS MANAGED BY CEMIG SAÚDE:**

coverage of expenses with medical consultations, exams, outpatient care, medications, hospitalizations, surgeries, obstetric care, and dental treatment for employees and dependents. Cemig also maintains Health Programs such as Novos Ares, against smoking, and Peso em Equilíbrio, against obesity.

**[401-3]** The benefits of paternity and maternity leave were granted, respectively, to 274 men and 34 women in 2019. All beneficiaries maintained their employment relationship with Cemig, including during the 12 months following their return from leave, which amounts to a 100% return and permanence rates for both men and women. All 5,596 Cemig's employees are entitled to maternity or paternity leave. Additionally, since 2018, the Company expanded the paternity leave from five to 20 days, intending to stimulate “responsible parenthood”, as a Company in the Empresa Cidadã (Citizen Corporation) Program.

The Empresa Cidadã Program was initially created to encourage the extension of maternity leave to 180 days, and subsequently came to encourage the extension of paternity leave to 20 days. By joining this program, the company receives tax incentives from the government.

## CEMIG SAÚDE

Cemig Saúde is a company managed based on the self-management model, with administrative and financial autonomy, its own equity fully applied to institutional purposes. All activities are conducted based on specific articles of incorporation and regulations. It provides customized service developed especially for beneficiaries of Cemig and other companies in the group.

The beneficiaries of Cemig Saúde are:

- Employees or directors active in sponsor companies;
- People from sponsor companies retired due to disability;
- Participants assisted by Forluz's pension plan;
- Self-sponsored people.

According to the Articles of Incorporation and the Regulations of the Plans, holders are permitted to appoint dependents and special dependents<sup>88</sup>.

<sup>88</sup> - Available at: <https://www.Cemigsaude.org.br/site/pagina/detalhe/2852>

## PREPARATION FOR RETIREMENT

Cemig is also concerned with the well-being of its employees after they retire. In the next 5 years, 4.4% of employees will meet conditions for retirement and, within a wider time frame of 10 years, it will be 14.6% of employees, all working in the Minas Gerais state<sup>89</sup>.

Concerning percentages disclosed in RAS 2018, there was a significant drop in that forecast; the rate of employees that can retire was directly influenced by the Brazilian Social Security Reform approved and incorporated to the Brazilian Constitution in November 2019, which increases the time before retirement for both men and women.

<sup>89</sup> - Electric Sector GRI: EU-15

Employees that will meet conditions for retirement (%)					
2020 to 2024			2020 to 2029		
Leadership position	Graduate level	Operational technician level	Leadership position	Graduate level	Operational technician level
0.4%	0.9%	3.1%	1.3%	3.3%	10.0%

**Table 23:** Employees that will meet conditions for retirement (%)

**[404-2]** The Company systematically carries out the Retirement Preparation Program - PPA<sup>90</sup>, participation in which is voluntary. The employee has the opportunity to discuss the time of retirement and its repercussions in their personal and family lives, medical and psychological approach for that phase of life, besides also introducing them to new possibilities through lectures on entrepreneurship, volunteer work, and other activities. Besides, each participant is entitled to enroll an adult companion, who may be a family member or a close friend.

In 2019, the program included 305 participants, 202 of whom were Cemig employees, and 103 were their chaperones. Also, there is permanent preparation through the Forluz Social Security and Financial Education Program - Para Viver Melhor (For a Better Life), through which issues such as budget management, investments, overcoming indebtedness, and how to live better according to one's finances are addressed.

**90** - This program complies with Law 8,842 from 04/Jan/94, which determines that it is up to public bodies and entities "to create and encourage the maintenance of retirement preparation programs in the public and private sectors, at least 2 years before the worker retires".

Attendance to the Preparation for Retirement Seminar			
Job Category	No. of Employees	Chaperones	Total
Leadership	4	-	4
Graduate level	37	-	37
<b>Technician level</b>	161	-	161
<b>Total</b>	<b>202</b>	<b>103</b>	<b>305</b>

[91] Chaperones were considered in the total number of attendees to the Preparation for Retirement Seminar; however, they do not fit any job category and, thus, there is no detailing of the absolute number. Classification by job category is solely for Cemig employees.

**Table 24:** Number of attendees at the Preparation for Retirement Seminar

## SCHEDULED VOLUNTARY SEVERANCE PROGRAM

**[401-1]** In 2019, in addition to the Voluntary Severance Plan underway since 2018, Cemig launched the Management Staff Adequacy Plan, a program that goes along the same lines as the PDVP, but is solely geared at employees who have lost management positions in the recent Company restructuring. In 2019, 601 in-house employees joined the Voluntary Severance Program. Regarding the age group of these employees, 261 were up to 50 years old and 340 were over 50 years old. Accessions to PAQG totaled 14 employees, all over 50 years of age. The Company expects savings of approximately R\$ 150 million per year with the negotiations resulting from these dismissals. In addition to accessions to PDVP and PAQG, Cemig had another 147 people dismissed, totaling 762 severances in 2019.



### 5.3

## DIVERSITY AND HUMAN RIGHTS



**[103-2:405; 103-3:405; 103-2:410; 103-3:410; 103-2:412; 103-3:412]** Cemig strives to respect human rights and acts in line with the United Nations (UN) Guiding Principles on Business and Human Rights, the UN Universal Declaration of Human Rights, with the fundamental labor standards of the International Labor Organization–ILO, and the UN Global Compact.

In order to boost its commitment and guide the practices of its leadership, employees, business partners, and suppliers, in 2017 Cemig formalized a public document entitled “Commitment to Human Rights”, which guides all relations established between Cemig and its stakeholders.

In 2019, Cemig created the Diversity Appreciation Group, under the Corporate Sustainability Committee. In line with Cemig's Human Rights Commitment, the Company's Code of Ethics, and the Company's integrity value, the Group was established to conduct the Company's agenda and is made up of representatives from several areas.

It is charged with dedicating itself to the study and deployment of actions that, among other equally relevant topics, can alter corporate and social reality, so that gender equity and the appreciation of diversity becomes a reality in the company. Its duties are: **(i)** to propose, coordinate and evaluate corporate actions and projects for the inclusion and appreciation of diversity; and **(ii)** analyze domestic and international trends concerning business programs and projects that value diversity, aiming at keeping the Company in line with the best global practices.

The following were actions of the Diversity Appreciation Group:

- Drafting the Diversity Appreciation Policy to be approved by the Executive Board;
- Conducting training sessions on the topic and benchmarking at leading companies;
- Participating in business groups on the subject of human rights, valuing diversity, and inclusion;
- Voluntary worker efforts geared toward women at social risk (Women Entrepreneurs);
- Inclusion of diversity issues in the 2020 Climate Survey;
- Definition of initiatives and indicators for monitoring diversity in the Sustainability Plan;
- Approval of the Diversity Program Awareness-Raising Campaign;
- A statistical study of career and remuneration data by gender and race by a multifunctional group (partnership with the area of People Management and Corporate Sustainability).

With a traditionally male professional environment, Cemig has sought to insert women in their staff and encourage them to remain there, from technical to managerial levels, providing equal opportunities and conditions in a search for gender equality.

In that regard, it is important to discuss the differences in remunerations between women and men, which is a reality in Cemig. However, an explanation for that can be found in the segmentation of activities between genders in society, with the consequence of a greater presence of men in the engineering areas. Besides that, the remuneration difference is due, in part, to the hazard pay, which is added to the

base salary to make up the final remuneration of professionals working in risk areas. The greater presence of men working in Cemig's risk areas, therefore, influences the difference between the average remuneration of both genders.

In other words, the selection is made before the public tender. Although men and women compete on equal terms, as required by the 1988 Constitution, historically, more men participated in the tenders held by the company. This explains the percentage of 13.3% participation of women in the company's workforce. This is an example of the several variables that contributed to the challenges the Company now faces in the search for gender equity.

**[405-2]** Promoting equity means identifying the realities that were built on unequal grounds and finding solutions that promote an inclusive society and corporate environment, thus boosting business, strengthening the economy, and observing sustainable development.

Cemig Group's Company	WOMEN'S SALARY AVERAGE / MEN'S SALARY AVERAGE			WOMEN'S REMUNERATION AVERAGE / MEN'S REMUNERATION AVERAGE		
	Leadership	Technician	Graduate	Leadership	Technician	Graduate
Cemig Holding	0.87	1.06	0.99	0.99	0.69	0.65
Cemig D	0.74	0.99	0.88	0.86	0.81	0.81
Cemig GT	0.97	1.07	0.91	0.96	0.86	0.86
Cemig Consolidado	0.88	1.01	0.89	0.95	0.81	0.82

**Table 9:** Mathematical ratio between base salary and remuneration of women against men

Besides initiatives for pushing the equity agenda forward, some efforts geared to the Company female public stand out. The follow-up of female employees who will be mothers during their pregnancy, postpartum, and during the first 3 months of their children's lives, as well as childcare assistance and the extension of maternity leave from 4 to 6 months.

The Declaration of Ethical Principles and Professional Conduct includes principles for fighting against any form of moral and sexual harassment and discrimination in all its forms, appreciation of diversity, and equal opportunities. Compliance with commitments made in the areas of diversity, equal opportunities, and human rights is monitored through Cemig's Anonymous Reporting Channel.

**[406-1]** In 2019, the Anonymous Reporting Channel received 298 formal whistleblowing tips. From those, there were 14 charges for mobbing and 4 for sexual harassment. As they have corporate responsibilities for the management of complaints entered in the Anonymous Reporting Channel, the Ethics Committee took all the necessary measures to investigate them. Of the 18 cases relating to discrimination, 5 are ongoing and 13 have been concluded. Of these, 4 were grounded and related to moral harassment; their treatment was providing guidance to employees. The remaining 9 were not valid and did not amount to discrimination.

Regarding wider aspects related to human rights, in 2019, Cemig held a Human Rights workshop for the Company Leaders. That workshop aimed

at going more in-depth on the subject and discussing how Cemig can have a positive or negative impact on human rights in its relations with stakeholders.

**[412-2]** Also in 2019, an online refresh training course on the Declaration of Ethical Principles and Code of Professional Conduct, version 2019, was held, where the topics of valuing diversity and combating discrimination were addressed. In that same training course, employees had the opportunity to review Cemig's Commitment to Human Rights, signed in 2017. That training was attended by 7,998 Cemig e Participações employees and totaled 15,996 trained man-hours. 92% of Cemig's in-house employees took the online training.

**[410-1]** In 2019, there was no training on issues related to human rights, specifically for security personnel, during education and refresh courses.

**[412-1; 412-3; 416-1]** An action that stands out in the company in the protection to human rights was the execution of due diligence in human rights via application of a specific methodology. Held for the first time in 2017 and currently reviewed on an annual basis, the process seeks to list the impacts of Company actions on human rights along its value chain and on the communities Cemig operates in.

The first step was to assess the impact of Cemig's activities on the fundamental rights listed in the UN Universal Declaration of Human Rights for their nature (positive or negative) and relevance. Through the methodology adopted, it was possible to assess the impact on 100% of Cemig's own operations and those of its suppliers, as well as the impact on local communities.

As a result, Cemig has prepared a risk matrix of human rights violations. The matrix displays Cemig's activities that pose the greatest risk on fundamental rights, highlighting the negative and most relevant impacts. The impact assessment included severity, extent, duration, remediation, and whether the Company is directly related or contributed indirectly to the risk of violation. Within that context, the holders showing the highest risk of committing violations were defined. The table below contains the result of the interaction matrix with the major risks of non-compliance with human rights and which are the focus of due diligence:

Right Holders	Rights
Employees	Right to life
	Right to non-discrimination
Suppliers	Right to life
	Right to not being subject to forced labor
	Right to decent and fair work conditions
	Right to non-discrimination
Surrounding community	Right to life

**Table 25:** Summary of interactions with the major risks of non-compliance with human rights

Cemig identified the risk to the lives of its employees as the greatest risk to fundamental human rights posed by its operations, mainly due to work with the electric power system. In 2019, the risk of non-discrimination was also defined as a priority for both employees and the supplier chain.

Concerning suppliers, the activities identified as having the greatest risk to human rights were: deploying of high voltage distribution projects, construction of distribution networks, maintenance of distribution networks, and care for distribution customers. Based on that, in 2019, the supply area revised the supplier qualification process. During this process, it increased requirements to minimize the following risks in the supply chain: child labor, slave-like work, discrimination, sexual exploitation, and unsafe work.

The defined actions taken to mitigate these risks are being implemented in 100% of the company's operations and businesses; that is, in all places with a high risk, there are mitigation initiatives led by the Labor Safety and Supply areas, respectively. The actions are described in the table below.

Stakeholders	Description of the topic	Mitigation actions	Monitoring actions
Employees	Cemig must ensure that its employees carry out their work activities with the appropriate level of safety, thus avoiding accidents that can lead to fatalities.	IT-SESMT-4.3.1-002 Risk analysis;	IT-SESMT-4.5.3-001 Monitoring and Auditing System for Practiced Security Analysis - SIMASP;
		IT-SESMT-4.5.1-004 Criteria for Educational Labor Safety Verifications;	Labor Accident and Risk Monitoring System - SMART;
		IT-SESMT-4.5.3-001 Safety Inspections	Daily Safety Inspections;
		Environmental Risk Prevention Program; Audits; OHSAS 18001;	OHSAS audits. Sinal Verde na Rede (Green Light Along the Grid) Award € Semi-annual
		Inspections and audits in the supply chain, carried out by independent teams;	Siga em Frente no Tráfego (Move Along in Traffic) Award € Semi-annual Empregado Destaque em Segurança (Outstanding Employee in Safety) - Annual
Employees	Cemig fights against and condemns any form of discrimination based on race, gender, sexual orientation, color, appearance, nationality, religion, age, and physical and mental condition, marital status or political ideology, and values diversity and equal opportunity.	Human Rights Training, Campaign to Disclose Cemig's Commitment to Human Rights, Code of Ethics Training (which includes the subject of non-discrimination and appreciation of diversity), creation of the Business Diversity Appreciation Group, preparation of the Communication Campaign on Valuing Diversity, elaboration of the Valuation Policy for Business Diversity.	Control, investigation, and referral of complaints about discrimination, mobbing, and sexual harassment by the Ethics Committee.

Suppliers	Cemig must ensure that its suppliers carry out their work activities with the appropriate level of safety, thus avoiding accidents that can lead to fatalities.	IT-SESMT-4.3.1-002 Risk analysis;	Technical Assessment Questionnaire;
		IT-SESMT-4.5.1-004 Criteria for Educational Labor Safety Verifications;	IT-SESMT-4.5.3-001 Monitoring and Auditing System for Practiced Security Analysis - SIMASP;
		IT-SESMT-4.5.3-001 Safety Inspections	Labor Accident and Risk Monitoring System - SMART.
		Delivery of an action plan to correct failures and recurrence, and the effectiveness verified during quarterly audits.	Daily Safety Inspections; IST-SESMT-4.4.2-001-003 Formal Safety Guidance for Contractors and Contractor Employees
Suppliers	Cemig must ensure that its suppliers carry out their work activities in compliance with Brazilian Labor Law, which forbids forced labor or slavery-like labor.	Clauses for the protection of human rights;	QAT- Technical Assessment Questionnaire;
		Periodic audits, including visits to supplier facilities;	ATI - Industrial Technical Assessment;
		Verification of working conditions: employees labor rights, legal working hours, a minimum of 11 hours between working hours, hygiene and health conditions, accommodations, and other items;	ATE - Contractor Technical Assessment;
		ATI - Industrial Technical Assessment;	Adoption of the following indicators:
		ATE - Contractor Technical Assessment;	IDF – Supplier Performance Index
		PE-MSQL-GDM-02 Procedure – Identification of suppliers with high sustainability risk;	Sinal Verde na Rede (Green Light Along the Grid) Award Đ Semi-annual Siga em Frente no Tráfego (Move Along in Traffic) Award Đ Semi-annual
Suppliers	Cemig must ensure that its suppliers carry out work activities in compliance with the Brazilian Labor Law, which include, among others, a determination of working hours, employee dismissal practices, remuneration, and practices related to compliance with Occupational Health and Safety.	Clauses for the protection of human rights;	Empregado Destaque em Segurança (Outstanding Employee in Safety) - Annual
		Periodic audits, including visits to supplier facilities;	
		ATI - Industrial Technical Assessment;	
		ATE - Contractor Technical Assessment;	
		Identification of Suppliers With High Sustainability Risk Procedure;	
		Indicators:	
		TF Đ Accident Frequency Rate;	
		TG Đ Severity Rate	
IDF Đ Supplier Performance Index;			

Suppliers	In all its relations, Cemig fights against and condemns any form of discrimination based on race, gender, sexual orientation, color, appearance, nationality, religion, age, and physical and mental condition, marital status or political ideology, and values diversity and equal opportunity.	Training on the Code of Ethics at Cemig's Supplier Portal (which includes the matter of non-discrimination and appreciation of diversity), creation of the Corporate Diversity Appreciation Group, and review of the qualification process of suppliers with increased requirements.	Control and investigation of complaints about discrimination, mobbing, and sexual harassment by the Ethics Committee. (It is worth mentioning that Cemig's Declaration of Ethical Principles and Professional Conduct includes contractors and subcontractors as recipients.)
Community	Respect for life is one of the Company's values __and, in the new strategic planning, efforts to promote the safety of the population are made clear by the "Minimize Impacts on the Community" initiative. This initiative presents a specific guideline for this topic: "Expand the prevention of accidents with the population".	The Company works with society to provide information and clarification regarding the safe use of energy and promoting the population's awareness of the care necessary to live near power grids.	A survey and mapping of critical areas with a highest change of accidents with the power grid, identifying priority intervention areas: replacement of grids, distancing, and campaigns.

Table 26: Risk mitigating actions by stakeholder

## 5.4 PERFORMANCE MANAGEMENT



[103-2:404; 103-3:404] In the area of human resources, Cemig's Performance Management aims at encouraging the achievement of organizational goals and fostering the development of the skills required by the Company. The deployment of an effective Performance Management process contributes to a better performance by Cemig by aligning the activities carried out by employees and the initiatives laid down by the Strategic Planning. It also contributes to stimulate collaborative dialogue and planning of employees' careers.

With a view at having a sustainable people development program at the Company with all employees assessed, structured feedback meetings, and developing plans that can demonstrate the continuous progress of each employee, Cemig carries out Performance Evaluation cycles. In line with the company's strategic planning, the performance assessment makes it possible to promote the development of people in the organization, increase the productivity of teams, improve the quality of the social bonds between leaders and teams, and have an updated people management practice.

The impacts of the people development program are:

- Improving the relationship between employees and the work process;
- Strengthening social bonds and self-esteem in the work environment;
- Contributing to the improvement and development of people and work teams;
- Improving alignment and commitment levels, with productivity gains.

To follow the best practices in the market and adapt the Company to the effectiveness of this process, it was essential to establish a methodology consistent with the organizational strategy.

Thus, the program mentioned above has the following objectives:

- Assess the degree of contribution of each employee to achieve the pre-established results, enabling the alignment of deliveries to the Company's Strategic Planning;
- Having a methodology that ensures growth in an orderly and discussed way, promoting a culture driven by results and high-performance levels.
- Guarantee the Company knows about its employees and receives continuous feedback, aiming at ensuring the success and longevity of Cemig;

**[404-3]** In 2019, Cemig carried out a Performance Assessment cycle as part of the People Development Program. These assessments served as a subsidy for the individual development of the skills required for the organization and consequent organizational learning. 100% of the Company employees were evaluated via the Performance Assessments, including managers, administrators, and superintendents.

# ORGANIZATIONAL LEARNING

**[404-2]** Cemig continuously invests in building and managing its corporate knowledge. This assertive corporate knowledge first undergoes a well-executed hiring process, where the technical requirements of the job positions are clear and fit the needs of the Company's. This way, Cemig seeks to develop the skills of employees relating to the specificities of the electricity sector, with the further goal of keeping its workforce trained and updated.

Once the professionals with the appropriate skills for the positions are hired, the Company provides them with a portfolio of technical, behavioral, and management training courses, intended to allow each employee to develop their knowledge according to the Job Description established for their position. In order to correct deviations and improve performance, each employee draws up a Development Plan together with their manager, where their training requirements are drawn up in line with what a needs assessment.

Also regarding skills development, Cemig refunds its employees for expenses related to technical, undergraduate, and graduate courses, and foreign language training courses.

Cemig's corporate university (UniverCemig) is responsible for training and developing Cemig's employees by building educational solutions, conducting their own training sessions, outsourcing training in Brazil and abroad, and managing post-graduation and language courses. Besides that, UniverCemig goes to market to offer training to other companies, especially contractors that provide services to Cemig D.

In line with this strategy, UniverCemig has been reformulating the corporate training processes and, since its inception, more than 10 years ago, it has built alliances and unified training systems and actions in favor of the Company.

The changes implemented over the past few years include the survey of demands, the simplification of corporate instructions, and the management of knowledge critical to the sustainability of the business.

The training portfolio is in line with corporate policies and guidelines, and is certified by two international standards: ISO 9001, which certifies processes from a quality standpoint, and OHSAS 18001, which provides a certification related to labor health and safety. UniverCemig also adopts a way of managing its learning solutions that allows for flexibility according to Cemig's scenario.

92 - Electric Sector GRI: EU-14.

In 2019, Cemig continued hiring employees selected via Public Tenders (held in February and March 2019), and also an initiative to increase the number of inspections in consumer units to detect and combat irregularities there. For that, UniverCemig started the professional training of

223 new employees, 72 Electricians, 2 Maintainers, 137 technicians, and 12 engineers; they have also trained 220 inspection technicians from outsourced consumer units.

The professional training of new employees and also the training on legal requirements, mainly the biennial refreshing training on NR10 and NR35 standards, all carried out in 2019, were responsible for increases of 61.6% and 43.4%, respectively, in the number of attendances to technical training sessions, and the man-hour training indicator compared to 2018 figures.

Another indicator that increased greatly compared to the previous year was the average of on-site training hours per employee, which jumped from 38.3 hours in 2018 to 56.5 hours in 2019.

In 2019, it was possible to have 11,422 in-house employees and 5,178 employees of other companies attend on-site technical training. The total amounted to 466,712 of training man-hours, 316,260 of which were in-house employees and 150,452 were from other companies.

Concerning distance training (EAD), UniverCemig made 16,089 attendances possible, totaling 38,456 training man-hours, including its employees, tax advisors, administration staff, contractors and interns, and average of 6,87 trained hours per employee.

Cemig believes that the training of its workforce is essential to achieve its strategic objectives with sustainability. So, Cemig strongly invests heavily in UniverCemig, whose performance got in 2019 a customer (leaders with teams attending training sessions) satisfaction level of 95.1%.

Training in 2019	Number of attendees	Trained Man-Hours (TMH)
Cemig	11,422	316,26
Other companies	5,178	150,452
<b>Total</b>	<b>16,600</b>	<b>466,712</b>

**Table 27:** Number of people trained and training hours in 2019, in the on-site modality.

[404-1]

The indicators show the average of training hours during the year of 2019 by employee and by gender.

Company	Job category	Number of employees		Trained man-hour		Average	
		Males	Females	Males	Females	Males	Females
Holding	Leadership	20	2	144	53	7.20	26.50
	Graduate level	30	6	152	0	5.07	0.00
	Technician level	25	3	28	56	1.12	18.67
Cemig GT	Leadership	57	6	1,994	80	34.98	13.33
	Graduate level	356	99	14,887	3,55	41.82	35.86
	Technician level	711	78	46,527	1,344	65.44	17.23
Cemig D	Leadership	72	8	3,229	165	44.85	20.63
	Graduate level	525	149	19,22	5,566	36.61	37.36
	Technician level	3,055	394	210,38	8,885	68.86	22.55
<b>TOTAL</b>		<b>4,851</b>	<b>745</b>	<b>296,561</b>	<b>19,699</b>	<b>61.13</b>	<b>26.44</b>

**Table 10:** Man-h\ trained and training average by job category and by gender, in the on-site modality

There has been a steady increase in the average number of training man-hours at the leadership level in the past 4 years, which indicates a consistent investment by Cemig in the training of its managers, directors, and council members, which is strategic for the Company.

Although the indicator shows a small reduction in the average man-hours trained at the graduate level from 2018 to 2019, it remains above other previous years. There was a significant increase last year in the average for the technical level, which is the level with the highest average of annual training time in Cemig's history. The illustrative chart is shown below:

## Average training man-hours trained by job category

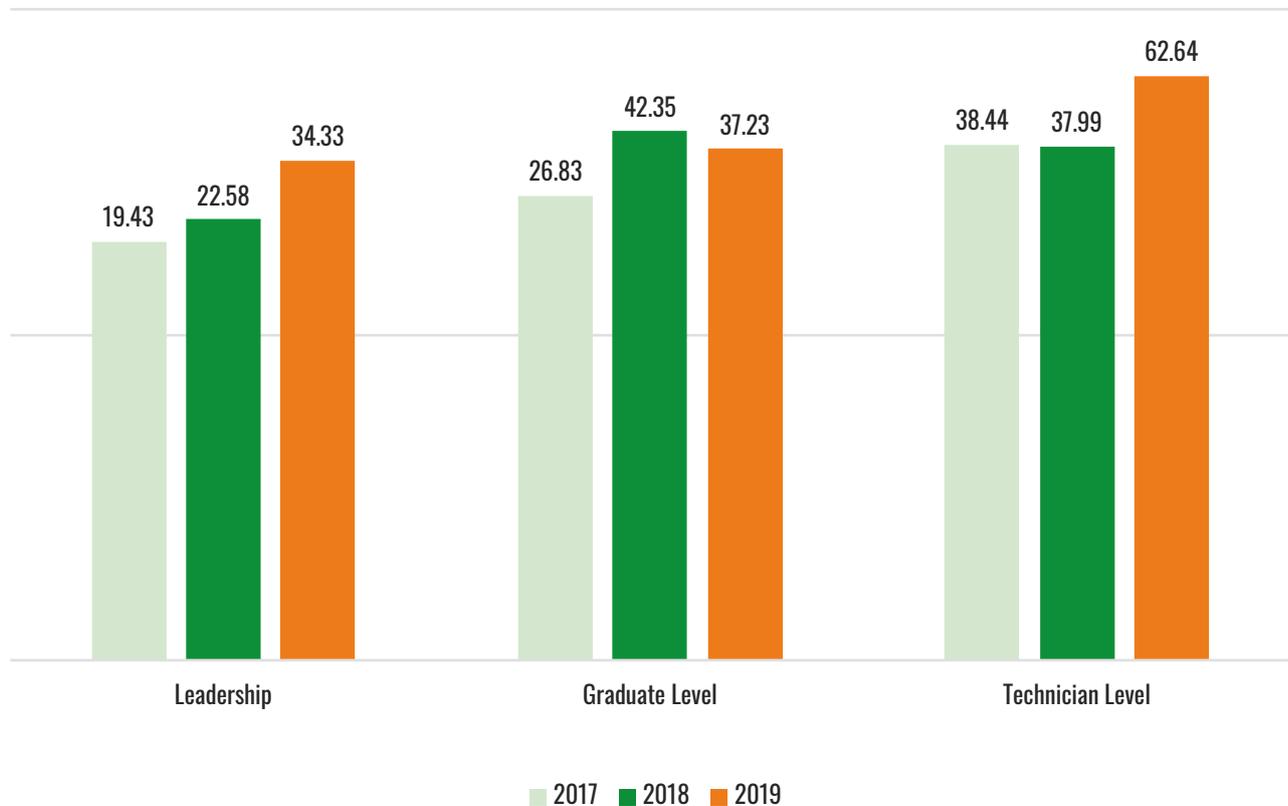


Chart 8: History of average training man-hours by job category

In 2019, UniverCemig continued with its 2 research and development projects: “D0595 - Development of Tacit Knowledge and Educational Alternance in the Training of Professionals” and “D0593 - PLAID-UniverCemig DIGITAL: Digital Platform for Staff Skill-Development and Training in Cemig's Electric System Operation Area”. Both projects seek to improve and speed up the training of Cemig's employees and to increase the effectiveness of the application of resources destined to training. The estimated investment for both projects is R\$ 9,200,000.00.

in 2019, R\$ 104,561.27 was invested in extramural training (EAD). This amount allowed UniverCemig to have 11,444 people attending extramural training, totaling 28,348 man-hours trained for its employees, tax and management advisors, contractor staff, and interns. Among the training

sessions in this modality, Variable Portion, Weekly Safety Reflection - RSS Mobile, and the Declaration of Ethical Principles and Code of Professional Conduct 2019 stood out.

Finally, in 2019, UniverCemig implemented the course “TTTP-0339 - Inspection in Low Voltage Consumer Units with Direct Measurement for Contractor Technicians”, which will provide the company with a substantial increase in the number of inspections carried out in consumer units so as to detect and combat irregularities there.

## PARCEIROS NA EDUCAÇÃO (PARTNERS IN EDUCATION)

Also, through its subsidiaries Cemig D and Cemig Saúde, Cemig maintains the Parceiros na Educação (Partners in Education) Program. The Program is an initiative of PUC Minas University in partnership with several institutions such as companies, professional bodies, and the government, in which the partners are offered the benefit of a 20% scholarship on the value of the semester tuitions of several Undergraduate Courses. Cemig D and Cemig Saúde employees and dependents (spouses and children) can obtain the same 20% (twenty percent) discount for undergraduate courses offered in the extramural modality by PUC Minas Virtual (IEC PUC Minas), and 15 % (fifteen percent) discount on the value of all lato sensu graduation courses (specialization and MBA), offered by IEC PUC Minas.

The People Hiring and Development Department - DPR/PD - UniverCemig announces that the benefits provided for in the Agreement signed between Cemig and PUC Minas for the “Parceiros

na Educação” Program were expanded and extended to include students in the first semester of 2020. The same clauses and conditions of the previously-signed agreement were kept.

### 5.5

## LABOR AND UNION PRACTICES



**[103-2:402; 407-1]** By a public commitment to adhere to the Global Compact and, internally, via its Human Resources Policy, Cemig acknowledges union entities as legitimate representatives, respecting the affiliation options of its employees and even transferring to those entities the amounts deducted from the payroll of affiliated employees.

Cemig has a specific area to deal with relationships with unions. This area maintains constant contact with them, always seeking to go over all the entrepreneurially-acceptable means to negotiate solutions ethically and respectfully. The Company carries relations with those associations in a very transparent way, and it believes there is no risk posed to the right of freedom of association and collective bargaining.

Regarding the workforce and its union relations, in 2019, Cemig identified:

- 3,371 employees affiliated to unions, which amounted to 59% of the workforce;
- 155 active employees who made up the boards of representative unions;
- 105 employees with temporary job stability due to working at unions;
- Holding of sectorial meetings at the company's facilities, in compliance with convention 135 of the International Labor Organization - ILO;
- 23 employees released full time to unions;

The list includes the execution of a technical cooperation agreement, which provides for release from work of those employees who make up the union boards, so that they can dedicate themselves to union activities, up to 6 whole or fractioned days per year, limited to a maximum of 2 days per month.

Annually, Cemig negotiates collective bargaining agreements with unions, in order to contribute to a good organizational climate and the Company's strategic objectives.

**[102-41]** The negotiation of Technical Cooperation Agreements - ACTs and Specific Bargaining Agreements - ACE for Profit Sharing or Results follows the guidelines set by the Company's Board of Directors. Cemig's collective bargaining agreements are negotiated and signed with unions of different categories, such as engineers, industrial technicians, administrators and lawyers, and with electricians' unions, which represent the employees of the administrative-operational technical staff.

These agreements cover 100% of the employees, who are all guaranteed the rights they provide. The entire negotiation process is communicated to employees and the agreement, once signed, is published on the Company's intranet.

Cemig's bargaining agreements expire annually on October 31, the date agreed between employees and their representatives, and as of November 1st, negotiations to establish a new bargaining agreement begin.

**[403-4]** In November 2019, the new ACT came into force. It will be valid for 2 years - until 2021. It has 58 clauses covering topics on remuneration, occupational health and safety, retirement, working conditions, and other matters. Concerning health and safety, the points that stand out are:

- The commitment to carry out studies to search for collective protection solutions and the reaffirmation that protection must be employed by wearing Personal Protective Equipment - PPE and Collective Protection Equipment - CPE;
- Inspection of contractors regarding work safety;
- Issuance of a health report;
- Granting of access of union directors to meetings of the Internal Accident Prevention Commission (Cipa) and the sending of copies of meeting minutes to the unions;
- Transfer of information on the frequency and types of illnesses and accidents, the notification, and summoning of unions in case of serious or fatal accidents to accompany the investigation of causes and the payment of hazard pay and “unpleasant work” pay.

The Labor and Internal Relations Management Department acts preventively in labor routines, so that the practices comply with the law, aiming at reducing the risks Company's labor liabilities.

**[402-1]** It is worth mentioning that clause 33, second paragraph, of the ACT provides that the introduction of new technologies and/or procedures for automation or centralization of activities that involve job redundancy will take place after wide disclosure to the employees involved and to their representatives, seeking suggestions to ensure the best solution for each initiative.

## 5.6

# WORK SAFETY, OCCUPATIONAL HEALTH AND WELL-BEING



**[103-2:403; 103-3:403]** Since 2007, in line with principle number 3 of its Declaration of Ethical Principles and Code of Professional Conduct, Cemig's Health, Occupational Safety, and Well-Being policy is strongly represented by its first Value, “Respect to Life” and in Strategic Initiatives No. 3 and 10, in the recent update of the Company's corporate strategic planning.

Strategic initiative No. 3 is monitored by the Accident Frequency Rate - TFA corporate indicator, while initiative No. 10 is monitored by the Frequency Accident Involving the Population - TFPO complementary indicator.

**93** - Electric Sector GRI EU-16.

The policy, which is widely disseminated, establishes the high relevance of the topic for the Company's business and the adequate protection of its entire workforce, consisting of in-house, outsourced, and contractor staff<sup>93</sup>.

The performance in Health and Safety directly affects the organizational climate, which can also impact the company's brand and reputation, as well as cause it to face labor and legal contingencies.

The principles of the Company's policy include the identification, assessment and control of risks to health and safety at work, proactivity in preventive actions, compliance with legislation and internal rules, the right of workers to refuse to expose themselves to unsafe situations, and their responsibility - regardless of tier level - for failure to commit to the promotion of Health, Occupational Safety, and Well-Being.

As a result of the policy, since 2009, the Company publishes a Technical Manual on Occupational Health and Safety on its intranet, which contains a series of internal mandatory instructions. Cemig also carries out periodic audits and establishes criteria and procedures for accountability and penalties for non-compliance with the policy, rules, instructions, procedures, or guidelines on the subject. Besides, Cemig publishes various campaigns and information on its website to encourage safety practices that contribute to the continuous decrease in the number of accidents, both for its own employees and third parties and customers.

**[403-2]** Cemig's accident statistics records and reports are made following the normative criteria of NBR 14.280: 2000 Work Accident Register - Procedure and Classification. In 2019, 239 accidents involving the workforce were recorded, with the most common injuries or health problems being: sharp force trauma, laceration, blunt force trauma, and puncture (18.8%), followed by fracture (12.1%), excoriation and abrasion, and contusion and crushing, both (10.1%).

In the period of this report, there was an accident case that resulted in a fatality, the source of the injury being a motor vehicle accident.

The total of 69 accidents with lost time, 10 involving in-house employees and 59 involving contractors, resulted in 1,966 lost days, most of which occurred with contractors, as shown in the table below:

Type of accident	Category	2017	2018	2019
Number of work accident without leave	In-house employees	32	15	26
	Outsourced employees	76	82	144
	Total	108	97	170
Number of work accident with leave	In-house employees	20	9	10
	Outsourced employees	36	56	59
	Total	56	65	69

Lost days [1]	In-house employees	529	206	282
	Outsourced employees	680	1,275	1,684
	Total	1,209	1,481	1,966
Number of deaths related to work	In-house employees	0	0	0
	Outsourced employees	2	0	1
	Total	2	0	1

[1] Lost days are counted from the date of the accident and in calendar days.

**Table 28:** History of work accident data

Cemig's Health and Safety Management System, based on the OHSAS 18001 standard and in the process of migrating to NBR ISO 45001: 2018, focuses on the prevention of occupational diseases and injuries. This certification covers all processes related to generation, and transmission processes, and part of the energy distribution process. UniverCemig and the Asset and Industrial Security Department are also certified in this system. Regardless of whether the area is certified, there is an internal procedure, the Hira-Cemig Model, which ascertains that the main health and safety risks, including psychosocial risks, are identified and assessed, and that controls are in place to mitigate them to acceptable levels.

**[403-1]** In addition to the Hira-Cemig model - in place since 2015 - Cemig has other tools to control risks. They are:

- Risk analysis carried out before each operational activity. It takes into account the specifics of each situation, including the physical and mental conditions of the workers in the time before starting the activity;
- Monitoring and Auditing System for Safety Analysis Practiced - SIMASP, which standardizes and unifies work safety inspections and feeds the Practiced Safety Indicator - ISP. This indicator shows conformity of the work of in-house and contractor employees regarding health and safety requirements and procedures;
- Monitoring System for Occupational Accidents and Risks - SMART, which generates statistical reports based on the accident record by type, and is used in the monthly accident management;
- Environmental Risk Prevention Program - PPRA, which is provided for in the legislation, is carried out annually at each facility of the Company and consists of the anticipation, recognition, assessment, and control of physical, chemical and biological risks; it is used as one of the subsidies to prepare the Hira-Cemig risk profiles;
- Safety Time, a venue for presenting and discussing topics related to Health, Hygiene and Safety at Work held every month and, from time to time, used for alignment and dissemination of information;

- The Occupational Health Medical Control Program - PCMSO deployed at Cemig has as its major objective the prevention, screening and early diagnosis of work-related health problems, including subclinical ones, in addition to finding cases of occupational diseases or irreversible damage to workers' health. That program is part of a broader set of Company's initiatives relating to the health of its workers, and must work in tandem with the provisions of the other Regulatory Standards (NRs), especially NR - 9 (Environmental Risk Prevention Program). The ultimate purpose is always to promote and preserve the health of the company's workers. PCMSO monitors the health of employees by means of pre-employment, periodic, return-to-work, job change, and severance exams. In addition to these, aiming at specific assessments, special medical inventories and psychological assessments are carried out locally where employees are based;
- Internal Accident Prevention Commissions - CIPAs, made up of representatives of employees and the employer and that act autonomously and independently in the prevention of accidents and occupational diseases. Its members have annual terms of office and before each term, all CIPA members receive legal-content training provided by UniverCemig. At the end of 2019, Cemig had 63 CIPAS that represented 100% of the employees.

Given the importance of the Internal Accident Prevention Commissions (CIPAs), a new distance learning course for CIPA secretaries was developed. The course was prepared by UniverCemig, in a partnership with a team from DPR/ST. It aims at instructing the secretaries, who have a very important role in the organization of the Commission, on their activities and responsibilities, in order to contribute to the better functioning of these Commissions, both in their actions and in documentation management.

**[403-3]** Other tools for monitoring employee health include periodic and special medical examinations and inventories, medical certificate management, psychological assessments, and social inventories. These examinations and assessments are carried out at the employees' own workplace. Taking into account all the periodic diagnostic procedures performed in 2019, including medical and supplemental assessments, the medical service performed a total of 45,400 exams. During these assessments, it is possible to gauge the working capacity of employees, especially those who perform critical activities (overhead work, with electricity, and in confined spaces), as it is possible to track and diagnose early pathologies that could cause sudden illness and, consequently, work accidents. The occupational, pre-employment, job change, periodic, severance, and return-to-work assessments in 2019 totaled 6.058 exams.

In 2019, 4,026 employees were vaccinated against the flu, 0.5% less than in 2018, when 4,048 employees were vaccinated. In 2019, no labor-related illnesses were diagnosed.

There are also campaigns and incentives for early detection of heart diseases, diabetes, dyslipidemia, breast

cancer, prostate cancer, bowel cancer, and vaccination against the flu. Cemig also offers the following social support programs to its employees:

Scope	Programs	Description
People	Professional Rehabilitation Program	It aims at relocating employees whose work capacity was reduced due to an accident or illness, thus requiring a job change. The program is jointly carried out by the medical, psychological, social, and occupational safety areas, with subsequent approval by the INSS (Brazilian Social Security Institute).
	Personal and Family Budget Planning Program	Using lectures, social services, and lending, it aims at making employees aware of the importance of financial balance.
	Social Intervention	It aims at guiding and covering health care expenses for employees on leave, injured at work, and retired due to disability resulting from an accident at work or occupational disease.
	Monitoring of Social Workers from Contractors	Management of Social Workers from contractors, monitoring the monthly and annual work plan, and recording the work carried out. Cemig holds 2 annual meetings with the entire team from contractors.
Regulatory and Market	Accidents with the Population	Monitor the occurrences of accidents involving the population in the company's concession area that caused injuries or damage to property. Draft a social expert opinion for the company's Legal Department, follow-up on victims, and enable the payment of expenses with health treatment, transportation, and food (depending on the company's legal demand and analysis).
People	Social Inventory	It consists of surveying the social variables that predispose the employee to an accident at work. We conduct individual interviews, present the social diagnosis, prepare the action plan and monitor its deployment in order to improve points displayed by the work carried out in the areas. The action plan is built together with the management of the respective departments.

Table 29: Program for social support to employees

**[403-1]** In the face of technological developments in the electricity sector, with the consequent need for revising work methodologies, the Company maintains internal committees that discuss technical matters directly or indirectly related to Health, Hygiene and Safety issues. They also actively participate in several workgroups in the domestic and international scene and ABNT commissions and study groups.

To avoid serious and fatal accidents with its workforce, the Company's top management established the "ZERO Tolerance for Serious and Fatal Accidents" directive, which is vital for defining a package of actions to promote health and safety for the entire Cemig Workforce. Among the points developed as part of this commitment in recent years (2015 to 2019), there are the following:

- Human Resources Department, focusing on people and results;
- Agreement for Adhesion to the Ibero-American League on Social Security, to go beyond Brazilian borders and seek the best in occupational health and safety practices;
- Integrated Accident Risk Prevention group for the integration and dissemination of best practices in Health and Safety in the several operational areas of Cemig D and GT;
- Work plan prepared by technicians from the Ibero-American Social Security Organization - OISS focusing on (i) Exercise of the Organization

Leadership and Commitment, (ii) Risk Analysis, (iii) Process Control and Measurement, and (iv) Assessment and Improvement;

- Unscheduled Educational Safety checks carried out by the Engineers and Technicians of Services Specialized in Safety Engineering and Occupational Medicine - SESMT;

- Center for Electronic Document Management, Labor Health and Safety for In-House and Contractor Staff - GESET, which aims at ensuring a trained, skilled, qualified and capable workforce by carrying out the full management of the health and safety requirements of the workforce.

## PERFORMANCE RESULTS

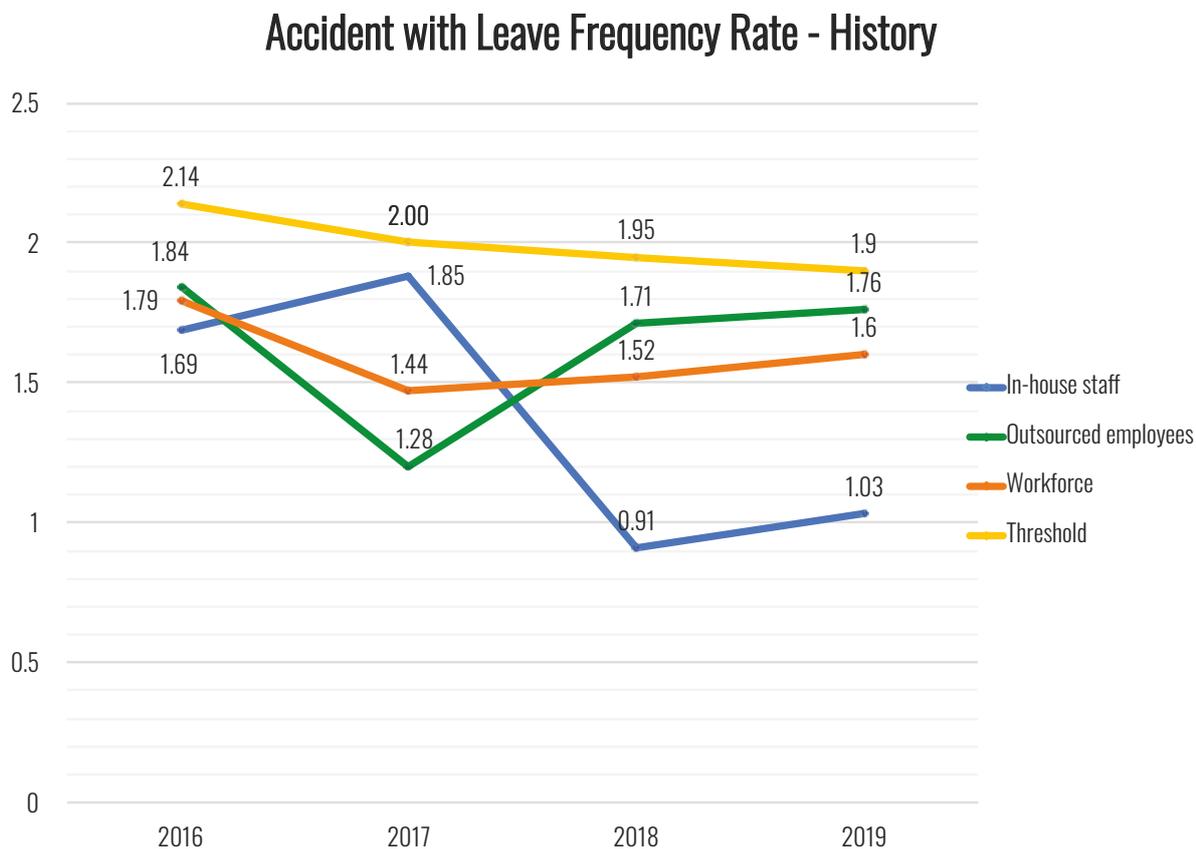
**[403-2]** The result obtained in 2019 is the fruit of a set of structured actions implemented throughout the year and conducted by Services Specialized in Safety Engineering and Occupational Medicine - SESMT and engaging in-house and contractor employees from all tiers. All accidents recorded in 2019 occurred in the state of Minas Gerais. There are no data by gender currently available.

Cemig has a computerized system for the management of aspects related to occupational safety. This system monitors the Frequency and Severity Rates of accidents based on the standard referenced in the Brazilian Norm ABNT NBR 14.280..

In 2019, the Severity Rate of Cemig's workforce was 184 workdays lost against one million man-hours of risk exposure. The specific rates for in-house and contractor employees were 29 and 230, respectively. These figures represent a significant 471.8% increase in the severity of accidents that occurred, when compared to 2018. The reason for this increase was the fact that there was one death in 2019, among contractors.

The Work Accident with Leave Frequency Rate - TFA for the workforce (in-house and contractor employees) has been the major indicator used to monitor the strategic objective of making safety a value in Cemig's corporate culture. In 2019, the result of the TFA calculation was 1.60 accidents per one million hours worked, 15.7% below the 1.9 limit laid down by the Company.

In comparison to the 2018 result, the 2019 TFA increased by 5.2%. The chart below shows the history of the past 3 years:



**Chart 9:** History of Accident with Leave Frequency Rate

In 2020, in compliance with a strategic guideline, Cemig will start to consider more robust analyzes of incidents and accidents without leave as well, in addition to accidents with leave, by calculating the Frequency Rate - TF of accidents. This guideline aims at deepening the safety analysis of its workforce based on the BIRD Pyramid Theory, so as to implement preventive actions to reduce accidents with lost time - which is currently monitored by TFA - and to avoid fatal accidents.

The numbers recorded for 2019 are presented in the table below:

Workforce				
Cemig Consolidated	Annual - 2019	DP	TF	TFA
		1,966	5.53	1.60
In-house staff				
Cemig Consolidated	Annual - 2019	DP	TF	TFA
		282	3.70	1.03
Outsourced employees				
Cemig Consolidated	Annual - 2019	DP	TF	TFA
		1,684	6.07	1.76

**Table 11:** Accident-related rates: lost days (DP), Work Accident Frequency Rate (TF), and Work Accidents with Leave Frequency Rate (TFA)

Cemig's goal for 2020 is reducing the number of work accidents to 165, which is a great challenge, as 239 of those were recorded in 2019. The goal also determines a threshold of 60 accidents with leave. Besides impacting the TFA, the reduction of accidents may also decrease social security contribution paid by the Company, since the Accident Prevention Factor (FAP) takes into account, among other things, the number of work accidents and occupational diseases, together with their severity.

# 6 SUPPLIERS

Cemig's supplier management includes defined policies, commitments, responsibilities, and objectives, together with actions that go beyond regulatory compliance<sup>95</sup>. This management process is based on legal norms, the Supply Policy, and the Declaration of Ethical Principles and Code of Professional Conduct. The Company also has specific policies on social and environmental responsibility, which are replicated to its suppliers. And those follow the guidelines in SA 8000, ISO 14001, and OHSAS 18001 standards, as well as the Global Compact principles<sup>96</sup>.

<sup>95</sup> - For more information, go to: <http://www.Cemig.com.br/pt-br/fornecedores/Paginas/Cemig-pol%C3%ADticas-de-suprimentos.aspx>.

<sup>96</sup> - Cemig acceded to the Global Compact in 2009

The supply chain management strategy includes 5 commitments that guide management actions; those are based on the stated items and policies, namely:

- Commitment to the public welfare and respect for the principles of legality;
- Commitment to business ethics;
- Commitment to legal equality;
- Commitment to transparency;
- Commitment to social and environmental responsibility.

**[308-1; 414-1]** Because of its legal nature, Cemig is subject to the Procurement Law, which lays down rules for tenders and direct Public Administration contracts. Thus, because of requirements prescribed by law, Cemig cannot hire suppliers, whether new or not, based on social (or due diligence) and environmental criteria. However, the criteria applied by Cemig in the registering and approval of new suppliers include environmental and social aspects.

Thus, as far as possible, Cemig seeks to apply to suppliers the same social responsibility and corporate value criteria that it applies in its operations.

The Company has procedures that verify conformity to environmental and social aspects for both contracted and non-contracted suppliers, which enable it to divide critical suppliers by category. To verify the alignment of supplier practices with the Company's requirements, on-the-spot checks are carried out on all critical suppliers, and also sample checks of the total number of suppliers.

Regarding social aspects, Cemig acts so as to verify legal compliance with labor and social security rules, has procedures for investigating claims, complaints, and whistleblowing, as well as applying contractual clauses aimed at preventing situations of risk to human rights. However, it still does not have a structured and ongoing due diligence process.

## 6.1 SUPPLY CHAIN MANAGEMENT

Cemig's Supply process is divided into 2 macro processes: (I) Planning and Strategy; and (II) Hiring, Quality, and Logistics, shown in the figure below.

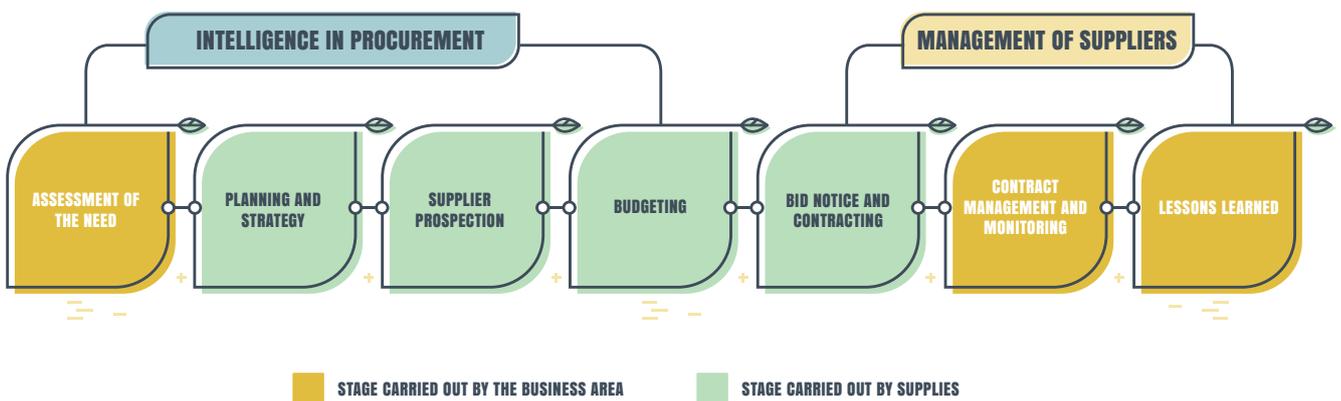


Figure 13: Areas responsible for the stages in Cemig's supply chain management

The Supplier Management process is initiated at Cemig based on the identification of contracting needs, which can be carried out both by the business area and by the Service and Material Planning areas. Based on that identification, efforts of prospecting, developing and registering (when necessary) the supplier, budgeting, market analysis, and preparing the monitoring of the supplier performance are started.

After these steps, the contracting process is carried out via the bidding modalities established in Cemig's Internal Bidding and Contracts Regulation<sup>97</sup>. The purpose of that regulation is to establish conditions, rules, and procedures related to works and service provision agreements, including engineering and advertising, acquisition and rental of assets, sale of goods and assets, and the implementation of real liens.

<sup>97</sup> - Cemig's Internal Bidding and Contract Regulation is a consequence of compliance with Law 13,303/2016, known as the "State-Owned Company Law", which allowed for innovation in major aspects of the legal regime for bidding and contracts. It delegated to the Company's Bylaws the important function of systematizing and accommodating the new legal provisions to the specificities of each state-owned company, thus replacing the regime in Law 8,666/1993.

That Internal Regulation seeks to ensure the selection of the most advantageous tender, including concerning the bid object life cycle, without prejudice to the principles of impersonality, morality, equality, publicity, efficiency, administrative probity, cost-effectiveness, sustainable national development, compliance with the tender instrument, competitiveness, and objective judgment.

The following guidelines are followed in Cemig's tenders and contracts:

- Standardization of the object, tender instruments, and contract drafts following specific internal rules. The adoption of standardized drafts from third parties is authorized in cases where it is customary for the market to adopt these instruments;
- A search for the greatest competitive advantage, considering direct and indirect costs and benefits of an economic, social or environmental nature, including those related to the maintenance, sale and donation of assets, the disposal of goods and waste, economic depreciation rate, and other equally relevant factors;
- Breakdown of the object into installments, when technically and economically feasible, aiming at expanding the participation of bidders, without loss of economy of scale, and provided it does not go down to amounts below the limits laid down in art. 20, items I and II;
- Preference for bidding in the auction modality laid down by law No. 10,520 from July 17, 2002, for the sale and acquisition of regular goods, works and services, meaning those whose performance and quality standards can be objectively defined in the tender notice using specifications that are usual in the market;
- Compliance with the integrity policy and the provisions in Cemig's declaration of ethical principles and code of professional conduct;
- Compliance with environmental and sustainability standards, when applicable;
- Use of products, equipment, and services that reduce the consumption of energy and natural resources.

The Company's Bylaws also require that the conditions for confirmation and qualification of suppliers are verified when signing the contract and before the execution of contractual amendments. Besides, the hired company must maintain the confirmation and qualification conditions required in the bidding throughout the contract life.

Thus, management and monitoring are carried out as specified in the bidding notice at the time the activities provided for in the contract are started and throughout the contract duration. This relationship cycle between Cemig and its suppliers is shown in the figure below.

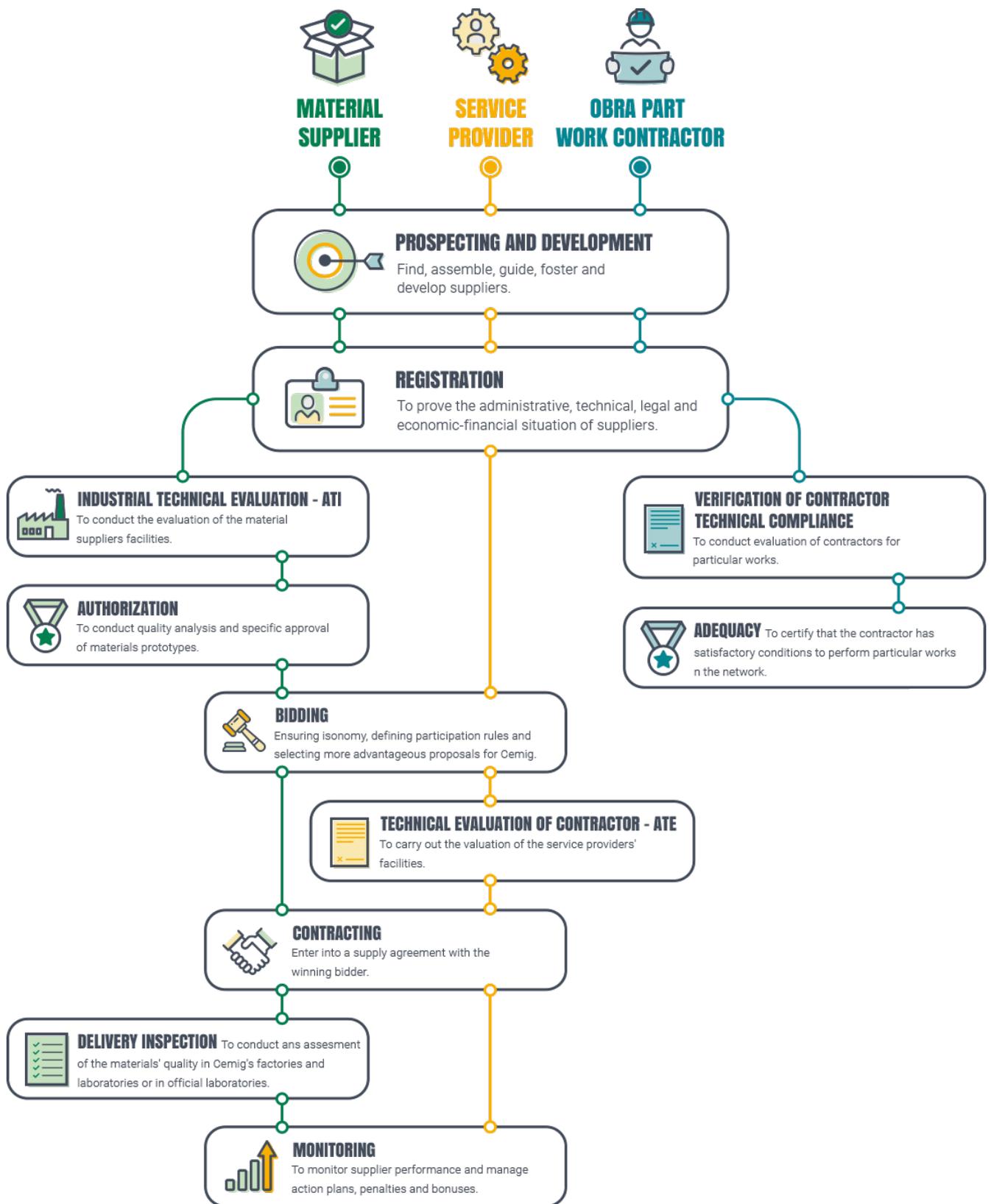


Figure 14: Cemig - Supplier Relationship Cycle Macro Flow

The area responsible for Supplier Management works in service planning, market analysis, prospecting, development and monitoring of supplier performance, and an information and system center. The wide coverage of these matters yields benefits for suppliers, mainly due to the standardization of processes via the centralization of activities, whose benefits are as follows:

- Standardization of processes thanks to the centralization of activities that were carried out by management areas;
- Scale savings;
- Optimization of activities;
- Greater amount and quality of facts and data to support decision-making;
- Priorities assigned according to company needs;
- Legal equality with equal treatment given to all suppliers.

## 6.2 SUPPLY CHAIN STAGES

The customer-supplier relationship at Cemig begins with the Supplier Prospecting process. Using this process, Cemig aims at increasing and improving its supplier base, boosting the competitiveness of its tender processes. Special care is given to quality, so the performance and reputation of prospective suppliers are assessed. The Company mainly prospects for new suppliers using workshops, seminars, domestic and international visits, research, and exchange of information with other utilities.

Cemig keeps the market informed about its practice of respecting the principle of legal equality and, at the same time, it looks for

qualified and better-performing partner suppliers, as well suppliers as with compatible cost practices.

Also in this context, as an incentive to the local market, fostering Minas Gerais suppliers, and getting closer to SEBRAE<sup>98</sup> and FIEMG<sup>99</sup>, it seeks to apply measures for the development and improvement of suppliers (with a focus on professionalization, process management, and improving relations with them).

<sup>98</sup> - Brazilian Micro and Small Business Support Service.

<sup>99</sup> - Federation of Industries of the State of Minas Gerais.

Supplier Registration is the pathway that allows for the effective participation of a company in a procurement process carried out by Cemig. The main objectives of the registration are:

- Ensuring that the tenderers in Cemig's procurement processes meet the participation requirements set out in the bid notices;
- Providing services to suppliers and internal customers with quality and timeliness;
- Ensuring an updated and solid base of suppliers registered with Cemig.

Any company can request its registration at Cemig, but only those that meet certain requirements will be effectively registered.

Also, aiming at improving the quality of service in the supplier registration, a unique remote service channel was created, together with the establishment of virtual service via Chatbot<sup>100</sup>. Other improvements were the revision of the requirements for the registration documents and the direct integration with the new process for prospecting suppliers.

**100** - Communication channel to answer questions about supplier registration, enabling 24x7 service for companies.

To ensure the quality of purchased materials, after requesting a supplier registration, for the supplying of some materials, an Industrial Technical Assessment (ATI) is required, aimed at verifying the supplier's facilities, infrastructure, staff, procedures, and manufacture processes, traceability, production capacity, safety at work, environment, and ability to carry out tests (laboratories), aiming at the approval of the applicant supplier's products and subsequent supplying to Cemig.

The Company also carries out quality inspections in order to verify the material compliance with the specified requirements. These inspections can take place at the supplier's facilities, at approved laboratories, or Cemig's laboratories, and may include checking the quality of raw materials, components, accessories, processes, and procedures used during manufacture, delivery, and installation. After being approved by ATI, the supplier will be able to have its products approved. So, to guarantee the quality of the materials purchased, the Material Approval process performs tests and inspections before the contracts are executed.

In the case of contracting services, some cases require a Technical Assessment at Contractor (ATE) - applicable to distribution service contractors - and other cases require the Technical Conformity Verification at Contractor (VCTE) - applicable to private construction contractors that will become part of Cemig's Electric Power System (SEP). ATE is intended to assess whether the contracted company mobilized all the necessary structures for the provision of services, as provided for in the Tender Notice. In other cases, there is a requirement from VCTE, both assessing suppliers based on specific criteria, such as team composition, staff, training, tooling, equipment, vehicles, facilities (offices, warehouses, cafeterias, locker rooms), documentation, and other items.

Execution of contracts goes together with a Supplier Performance Monitoring process order to lay down objective and standardized criteria that meet market practices. This way, by applying consolidated tools, Cemig aims at a transparent, impartial, and efficient supplier management capable of engaging and motivating the parties involved and resulting in improvements for them.

Suppliers are monitored using a system where the supplier, the supply area, and the technical area responsible for contract management interact. The measurement methodology was recently restated and is based on the follow-up of the Supplier Performance Index - IDF. IDF is broken down into 3 aspects: Technical, Financial, and Compliance.



Figura 15: Breakdown of the IDF Indicator

With the supplier performance analysis based on these 3 aspects, an innovative methodology was created. Some other gains provided by the monitoring process for the supply chain and the stakeholders involved are:

- With the monitoring of the Compliance aspect, using a specific indicator that measures Integrity, the Company seeks to fight corruption in all its forms, including extortion. Suppliers are encouraged to have a code of ethics, an anti-corruption policy, and they are also encouraged to create processes for complaints and to train their employees.
- Since 2015, Cemig has included in all contracts an item related to the obligations of suppliers, with the following wording: "To know and comply with the rules provided for in Law 12,846/2013 from 01/Aug/2013, the "Anti-Corruption Law ", refraining from committing acts tending to harm the public administration, denouncing the practice of irregularities of which they become aware using the reporting channels available to the contractor".
- Grounded predictability based on historical performance and data for decision making before an effective problem that may impact contract continuity materializes.

In that system, suppliers that initiated a new contract from the second quarter of 2018 on are monitored. This was when the measurement proposal for the IDF indicator was put in place, whose objective is to monitor the performance of individual suppliers, comparing them to other suppliers with defined rules and standards for indicators, penalties and bonuses.

For services, specifically in 2019 (first year with a standardized performance measurement), the monitored contracts represented, in value, 15.1% of the total contracts in force as of December 2019. It is expected that, within 5 years, this monitoring methodology will be incorporated in all contracts with suppliers (this is due to the 5-year term prescribed in the bidding law, Law No. 13,303/2016). Those that are in force (and that will last for 5 years) cannot be changed; that is, the previously-defined methodology will apply to them.

For the supply of materials, the measurement has been going on in a standard way for some years now, with its results also being called IDF. In the second half of 2019, in addition to revising the criteria for measuring materials, changing

their formulas and indicator components, the already-mentioned aspects of Compliance and Financial Health were also incorporated into the IDF. The goal is to have all contracts for materials monitored by this system within 2 years.

In 2019, therefore, measurement based on the new methodology was applied only to suppliers eligible for the Supplier Award<sup>102</sup> as a pilot/test of the methodology. Thus, the numbers determined for IDF Materials and IDF Services in 2019 - which are given below - are estimations based on a sample of suppliers already with contracts signed in this new context.

102 - In a topic corresponding to the award, the criteria for eligible suppliers are detailed.

SUPPLIER PERFORMANCE INDEX - IDF	
Year	2019
Material Suppliers IDF	88.0
Service Suppliers IDF	81.7

Table 30: IDF by Category

Due to changes in the methodology for calculating these indicators, the results verified in previous years are being disregarded, to avoid an inappropriate comparison with outdated indicators.

Aiming at the continuous improvement of the supply chain management process, Cemig works with internal medium-term (2018-2021) goals. These goals are presented below:

INDICATOR GOALS - SERVICES			
Indicator	2019	2020	2021
Technical Performance Indicator - IDCT	85.0	85.0	85.0
Compliance Performance Indicator - IDCO	100.0	100.0	100.0
Financial Health Performance Indicator - IDSF	70.0	70.0	70.0

**Table 31:** Supplier performance indicators

The target for the IDCT Technical Performance Indicator is the minimum considered as acceptable. This is because each contract has its specific technical indicators for TERM and QUALITY with measurement, calculation formulas, and goals varying according to their application, object context, importance, and area of operation.

Therefore, focusing on a minimum goal was determined by Cemig to be more prudent, since there is no sense in setting goals and monitoring average results when the goals are variable.

INDICATOR GOALS - MATERIALS			
Indicator	2019	2020	2021
Technical Performance Indicator - IDCT	88.0	92.0	95.0
Compliance Performance Indicator - IDCO	100.0	100.0	100.0
Financial Health Performance Indicator - IDSF	70.0	70.0	70.0

**Quadro 32:** Metas de Indicadores - Materiais

The IDSF indicator represents the monitoring of the financial health of contracts signed with Cemig. An indicator to monitor this performance was created in order to allow the Company to preventively and in advance identify possible problems with suppliers; it is supported by the sharing of good management practices, avoiding, as far as possible, losses for companies that are the parties in the contract (in no way does the Company contribute with financial resources).

When the performance of the supplier falls below expectations and what is determined in the contract, or there is a breach of a legal or contractual requirement, a Punitive Administrative Process is carried out to investigate what happened and, when necessary, enforce the penalty determined by the competent authorities.

Currently, with the Supplier Performance Monitoring process in place, the Punitive Administrative Process is no longer a terminal procedure for suppliers. This was the routine for most cases, namely, economic punishment and suspension of a defaulting supplier; however, progress was made towards pedagogical practices of gradual punishment. This way, there is an opportunity for the supplier to recover. But should it fail to do so, it falls into a logical and progressive sequence of penalties.

In 2019, Cemig instituted 31 punitive administrative proceedings (31.1% less than in 2018), of which 28 were for contractual defaults (non-compliance with deadlines, non-delivery of the object, irregular service), 2 for defaults to the Electronic Auction, and 1 on suspicion of document fraud and fraud. No supplier was prosecuted for serious accidents or damage to/impacts on human rights.

## 6.3

# IDENTIFICATION AND MANAGEMENT OF ENVIRONMENTAL AND SOCIAL IMPACTS



**[103-2:308; 103-3:308; 103-2:414; 103-3:414]** Cemig also has specific policies on its social and environmental responsibility, which, as a matter of course apply to its suppliers. These policies carefully follow the guidelines of SA 8000, ISO 14001, OHSAS 18001, and the Global Compact. The Company has procedures to identify risks to sustainability in the Supplier Chain in place. These apply to all contracting processes in effect, encompassing the economic, environmental, and social responsibility risks to which Cemig is exposed because of the performance of its suppliers.

These risks can cause damage to Cemig's brand, image, and reputation before the several categories of stakeholders, losses before the market and its competitors, and may be held criminally and judicially liable. For that reason, Cemig has consolidated a careful supplier management process, so that their registration and technical assessments meet the policies in effect.

As said before, since it is a semi-public company, Cemig may not decide to hire suppliers based on social and environmental criteria. Rather, it has procedures applicable to the selection of suppliers to be included in the registry. The directive is for Cemig to only have relations with those showing legal conformity in social and environmental aspects. Suppliers that do not meet these requirements and have negative media and reputation are disregarded for prospecting and development activities.

**[308-2]** Cemig's critical suppliers are those whose goods or services have a significant impact on the company's (i) competitive advantage; (ii) market success; or (iii) survival. This rating (critical supplier) can include scope and volume of goods or services, or the supplying of critical or irreplaceable components. The table below shows the number of critical suppliers in the past 3 years:

MAPPING OF CRITICAL SUPPLIERS			
YEAR	2017	2018	2019
Critical suppliers contracted in each year	104	186	150
Critical suppliers with contracts in effect	-	-	177

**Quadro 33:** Mapping of critical suppliers

The Company ranks suppliers as of high risk by considering potential negative (environmental and social) impacts resulting from material non-conformities. The identification of high-risk materials, services, and suppliers is reviewed annually, generating follow-up and control actions from the registration, technical assessment, and contract inspection phases.

Potential negative impacts of suppliers are taken into account:

- Factors related to the environmental license for operation, products and services;
- Waste management;
- Water grants;
- Human rights related to child and forced labor, freedom of association, working conditions, and occupational safety and health;
- Business ethics, corruption, and antitrust practices.

MAPPING OF SUPPLIERS WITH HIGH SUSTAINABILITY RISK			
YEAR	2017	2018	2019
Suppliers with high sustainability risk hired in each year	41	75	68
Suppliers with high sustainability risk hired with contracts in effect	-	-	70

Table 34: Mapping of Suppliers with High Sustainability Risk

## MANAGEMENT OF ENVIRONMENTAL AND SOCIAL IMPACTS WHEN PROSPECTING FOR SUPPLIERS

The prospection effort aims at increasing and improving Cemig's supplier base, thus raising the competitiveness of its tender processes, with special care to quality. That step involves selecting suppliers for registration and not for actual hiring. Cemig mainly prospects for new suppliers using workshops, seminars, domestic and international visits, research, and exchange of information with other utilities. Those who fail to meet the requirements laid down by Cemig and/or have a negative standing are disregarded.

The media analysis is carried out using search engines on sites specialized in the assessment of companies (Reclame Aqui and related sites) as part of the prospecting process. The CAFIMP, CEIS, and CNEP<sup>103</sup> websites are also checked to make sure that there are no impediments to hiring by public administration bodies. Cemig is part of a

benchmark group of concessionaires that allows for the exchange of information about suppliers.

**103** - CAFIMP: Register of Suppliers Prevented from Contracting with State Public Administration Bodies; CEIS: Registration of Disreputable and Suspended Companies; CNEP: Brazilian Registry of Punished Companies.

## MANAGEMENT OF ENVIRONMENTAL AND SOCIAL IMPACTS WHEN REGISTERING SUPPLIERS

The supplier register has the following objectives: (I) ensure that the tenderers in Cemig's procurement processes meet the participation requirements set out in the bid notices; (II) provide services to suppliers and internal customers with quality and timeliness; and (III) ensure an updated and solid base of suppliers registered with Cemig.

When performing a new registration and annual register update, all Cemig's suppliers must submit a statement<sup>104</sup> certifying that they:

- Do not employ children under 18 in night-shift, hazardous or unhealthy work;
- Do not employ children under 16 in any job, except from 14 years of age as an apprentices;
- Do not adopt a labor relationship amounting to forced labor or analogous to slave labor;
- Do not acquire or use ores (tantalum, tungsten, tin and gold) from areas of armed conflict in the Democratic Republic of Congo and its neighbors, which are characterized by extreme levels of sexual and gender violence;
- Value diversity and do not adopt discriminatory practices based on race, gender, age, nationality, sexual orientation, physical disability, and religion;
- Meet the learning quota pursuant article 429 of the consolidation of the labor laws of Brazil, aiming at the technical-professional training of young people in their first experience as workers;
- Know and comply with "Cemig's declaration of ethical principles and code of professional conduct" and "Cemig's anti-fraud policy";
- Strictly and fully comply with the requirements on environmental legislation and personnel safety, meet all the requirements from official bodies for environmental control and personnel safety, as well as that all their operating and movement permits and those of their sub-suppliers are valid, and their respective environmental conditions are being met.

104 - Available at: <http://www.Cemig.com.br/pt-br/fornecedores/Paginas/cadastro-fornecedores.aspx>.

In the registration process, the standard procedure consists of checking all statements received, without using samples. Only suppliers that meet these requirements will be registered. Complementary to the registration process, an Industrial Technical Assessment - ATI and a Contractor Technical Compliance Verification - VCTE are carried out for most of the items. In those assessments, items relating to work and health and safety practices (especially hazardous and unhealthy work) and environmental aspects are checked.

## MANAGEMENT OF ENVIRONMENTAL AND SOCIAL IMPACTS IN THE TECHNICAL ASSESSMENT OF SUPPLIERS

Execution of contracts goes together with a Supplier Performance Monitoring process, in order to lay down objective and standardized criteria that meet market practices for Cemig regarding the monitoring of its contracts.

With this Supplier Performance Monitoring process, Cemig is able to gauge suppliers' achievement of goals and compliance with requirements, so that there are specific indicators for Health and Safety, Environment, and Documentation Compliance.

When carrying out ATI, ATE and VCTE, social and environmental conditions are checked with suppliers, especially those related to hazardous and unhealthy work, forced labor, manufacturing processes, waste management, standardization of processes, and others. At those times, when Cemig is in contact with the suppliers' professionals, it is also possible to identify potential situations for prejudice, harassment and labor debts. All of this is accounted for and testifies against the supplier's acceptance.

For the bidding process, Cemig prepares technical specifications and estimates that include all the social and environmental requirements for the execution of the contract. As an example, we can mention, from the social side, Cemig's requirement that all of its dedicated labor contracts include providing workers with meal tickets and health insurance; on the environmental side, obtaining all the environmental and operating licenses necessary for the contract scope.

## MANAGEMENT OF ENVIRONMENTAL AND SOCIAL IMPACTS WHEN EXECUTING SUPPLIER AGREEMENTS

Regarding socioeconomic and, above all, inclusive and sustainable growth, Cemig complies with Federal Complementary Laws No. 123/2006 and No. 147/2014, which deal with the Brazilian law on Micro and Small Businesses, which treat those differently from large companies. This creates more jobs and fuels the local economy.

During the contracting process, Cemig's team checks the price lists presented by suppliers that won the tender, to verify whether the amount quoted is sufficient to cover all expenses related to contractual execution. Specifically in terms of services, Cemig analyzes whether the quoted prices include labor benefits and charges.

When executing contractual, the supplier documentation proving they have paid all taxes and burdens, as well as properly managed the social and environmental aspects, is verified. Payments are only released after that verification.

With this Supplier Performance Monitoring process, Cemig can assess suppliers' achievement of goals and compliance with requirements, so that there are specific indicators for Health and Safety, Environment, and Documentation Compliance. In addition to the performance monitoring itself, it is worth highlighting the verification carried out by Cemig's team regarding contractual issues with suppliers, including social and environmental impacts.

By carrying out direct and reverse logistics for materials and equipment, Cemig also fulfills its social and environmental role. The Company's Logistics Operator has an SLA<sup>105</sup> with sufficient scope to adequately monitor these aspects. Cemig's social and environmental management approach is constantly audited, both by

Company's independent processes and by management software, as explained below.

**105** - Service Level Agreement: it is an agreement between the two parts of a business, the contracting company and the service provider. It consists of an official contract that establishing the responsibilities of both sides and reducing risks.

The Company has areas engaged in social and environmental aspects that are duly certified in quality (ISO 9001), environmental (ISO 14001) and health and safety (OHSAS 18001) management. This allows the Company to implement and assess appropriate policies and procedures related to social and environmental aspects, as well as to criticize the current performance.

Cemig has specific and independent departments to examine current processes, such as: Compliance, Corporate Risk Management, Ombudsman Office, Environment, Process Audit, Software Audit, and Occupational Safety. These

areas have the autonomy to point out errors and complaints from third parties regarding current processes, as well as issues that prevent the Company from adopting the best management practices.

Regarding technology, the software packages used by Cemig, whether acquired in the market or developed by the company itself, include a data security certification methodology, in addition to being continuously audited for possible fill-in failures, process flows, databases, systems logic, governance, risks, and compliance, in perfect harmony with the Sarbanes-Oxley Act.

Cemig invests in comparative models (benchmarking) with other large companies in the electricity sector and also in the market in general, in a search for best practices for its processes. Using the COGE<sup>106</sup> Foundation and a benchmarking group involving power utilities in Brazil, the social and environmental aspects of suppliers, especially contractual requirements, are continuously debated.

106 - To learn more about this Foundation, go to: <https://www.funcoge.org.br/>

## 6.4

# ENVIRONMENTAL AND SOCIAL PERFORMANCE OF SUPPLIERS



**[407-1; 408-1; 409-1; 414-2]** Cemig acknowledges areas of risk (potential negative social impacts) in the supply chain, given the segment in which it operates - the electricity sector. That is why the management of these risks is permanent, updated, and shared with several departments of the Company. For example, concerning the risk of working with electricity and overhead, the Company provides contractors with specific training to mitigate these risks, at its facilities, at UniverCemig.

In the past 12 months, no significant negative social impacts were detected in the supplier chain. Likewise, there is no record of suppliers identified as causing significant negative social impacts. The reorganization of procedures and integrated supplier management have contributed considerably to this, thanks to the connection of processes and departments that relate to suppliers.

Monitoring the performance of suppliers is also essential for this objective, as it provides monthly and targeted assessments on social aspects involving suppliers with a workforce dedicated to the Company. Along those lines, the Company also does not have operations and suppliers running any significant risk of having cases of child labor, forced or compulsory labor, or threats to freedom of association and collective bargaining. The cases of child and forced labor are continuously monitored by specific contractual rules, the performance monitoring process, and by inspections carried out at the suppliers' facilities.

As for freedom of association and collective bargaining, it is worth mentioning that the Company respects and interacts with the most diverse unions in the electric sector, in addition to including expenses with union negotiations applicable to suppliers in its budgets for new hires, even though Brazilian law has recently been amended regarding some of those obligations.

Similar to social issues, the Company acknowledges the potential negative environmental impacts in the supply chain. When drafting technical specifications, the environmental factor is widely addressed, so that suppliers are properly instructed to perform the contract following environmental requirements.

For example, when it comes to working on hydroelectric power plant dams, all issues involving risks to fauna and flora are previously established in the technical specifications, the supplier performance monitoring indicators, and contractual clauses. Concerning this matter, it is also worth recalling the ichthyofauna preservation program conducted by the Company with society in general, which, obviously, its suppliers contribute to and participate in.

Last year was no record of significant negative environmental impacts detected along the supply chain. There is also no record of suppliers identified as causing significant negative environmental impacts. This shows how much Cemig is engaged in dealing with environmental issues related to its suppliers and boosting its commitment to issues related to the Global Compact.

During 2019, there were recurring assessments related to the social impacts of suppliers. As already mentioned, this assessment is not carried out in a constant and coordinated manner, but is based on complaints of irregularities received both by third parties (members of the civil

society) and by the internal public (employees scheduled for possible technical visits and operational procedures at suppliers). So, this year, it was not necessary to execute agreements on improvements or terminate contracts with suppliers based on social performance assessments.

The effort of organizing procedures and having an integrated supplier management contributes for the continuous improvement of the connection between processes and departments that relate to suppliers. Monitoring the performance of suppliers is also essential for this objective, as it provides monthly and targeted assessments on social aspects involving suppliers with a workforce dedicated to the Company.

## 6.5

# COMMUNICATION CHANNELS WITH THE SUPPLIERS

Cemig provides several communication channels to its suppliers. One of the major ones is the Electronic Procurement Portal (PEC). PEC is an open and direct channel where all tender process procedures are listed, and contracting is published and made, thus allowing the supplier to interact with and look into processes and results, file proposals, enter certification documents, and

participating in electronic bids. The website is accessible to the public and allows stakeholders in general to follow the processes, which helps improve the process transparency.

107 - Available at: <http://compras.Cemig.com.br/>

Cemig uses the Government Gazette to publicize its actions. In that newspaper, extracts from tender notices and contracting executed by the company are published.

Cemig's Portal includes a specific area for communication with suppliers. That is the Suppliers Portal, where the Supply Policies are made available, together with information and instructions for registering and prospecting for new suppliers, technical assessment, development of prototypes and approval of material, monitoring of suppliers, acknowledgments, etc.

On Cemig's Portal you can find the contact e-mails for the major supply areas, in addition to a Virtual Assistant to provide first-level service to Cemig's suppliers, in order to clarify their main doubts. A frequently asked questions list was put together that the COGNIBOT machine learning tool can answer. The list includes questions with direct and generic answers and that apply to a range of suppliers, and specific questions related to the asker, which will be answered via integration with Cemig's systems.

Cemig is always open to receive suppliers and establish successful partnerships. The supply team is available to assist suppliers via phone, e-mail and meetings, to answer questions, provide guidance, and maintain this relationship.

## 6.6

# HIGHLIGHTS AND ADVANCES IN MANAGEMENT

The highlights in supplier management in 2019 are detailed below:

## CEMIG'S SUPPLIER AWARD REVIEW

In order to encourage the improvement of the goods and services supply process, in addition to acknowledging the harmony between suppliers and Cemig required to achieve common goals, since 2010, some material suppliers and service providers have been honored annually at the Cemig's Suppliers Award event. During the 2019 event, Cemig not only held the award ceremony for the best suppliers of the year, but Cemig's supplier policies, such those for as supply, selection and payment were introduced, together with the entire management process and its stages.

The award acknowledges suppliers that have excelled in 3 kinds of performance:

- Technical, which includes aspects of time, quantity, quality, health and safety, and the environment;
- Financial, which concerns the financial health of the supplier.
- Compliance, which includes registration regularity, monthly payment of legal, tax and social security obligations, and the supplier's integrity in relation to conduct; and

The final performance is given by the IDF (Supplier Performance Index) score.

The 2019 Suppliers Award criteria were as follows: first, the strategic categories of material or service supply were selected, which are those whose disbursement between August 2018 and July 2019 was at least R\$ 15 million. Categories are groupings of similar objects, suppliers and markets, and other identified similarities gathered together in a group with a specific designation so it is possible to internally treat processes and actions in a macro way.

It was necessary to have at least 2 different suppliers for each category eligible for the award, and these must have supplied a minimum of R\$ 1.5 million/year in the period from August 2018 to July 2019. Also, they had to have fulfilled at least 50% of the contract in terms of value and have no punitive administrative proceeding

ongoing at Cemig or restrictions in bodies such as CAFIMP, CEIS, and CNEP. Within each category, the supplier with the highest IDF score received a performance acknowledgment trophy for contract performance.

From a total of 482 suppliers that had purchase orders or contracts with Cemig, 12 categories of services and materials were selected for trophy awards. 35 suppliers were finalists in those categories, and 6 suppliers of materials and 6 of services were awarded the trophy.

## CEMIG'S PROCUREMENT BANK

Some procurement acquisition and accounting activities carried out by the company in the current cycle include the updating of the Procurement Bank. It stands out as an essential tool for analyzing the data on the acquisitions made. To this end, a working group is acting to

link the Procurement Bank to the company's fiscal SPED<sup>108</sup> to obtain greater regulatory adherence to the investments involved in carrying out the PPD - Distribution Development Plan.

108 - Digital Bookkeeping Public System

## S&OP

Integrated Sales and Operations Planning (S&OP) is a process by which senior management can achieve a greater degree of control over the company's operations. It is the element that connects the areas of operation, expansion, and maintenance with the supply area, as well as with senior management. It is a link for vertical and horizontal communication among sectors, constituting a regular and frequent process where senior management meets with the managers/superintendents of the functional areas to update the plans for each area, with a focus on the discussion on what will be carried out in the periods of the next year or more.

One of S&OP major objectives at Cemig is to generate demand, operational, supply, and financial plans, and introducing new products that are realistic, feasible, and consistent with each other and in line with the strategic objectives of the organization. This is achieved through a process that several areas of the company participate in, so that we can analyze the impacts of each decision on all areas involved.

In 2019, S&OP was implemented and consolidated at the High Voltage Expansion. In 2020, the goal is to deploy it to the medium and low voltage distribution concession areas, among others.

## PROCESS CONFORMITY AUDIT AT SUPPLIERS

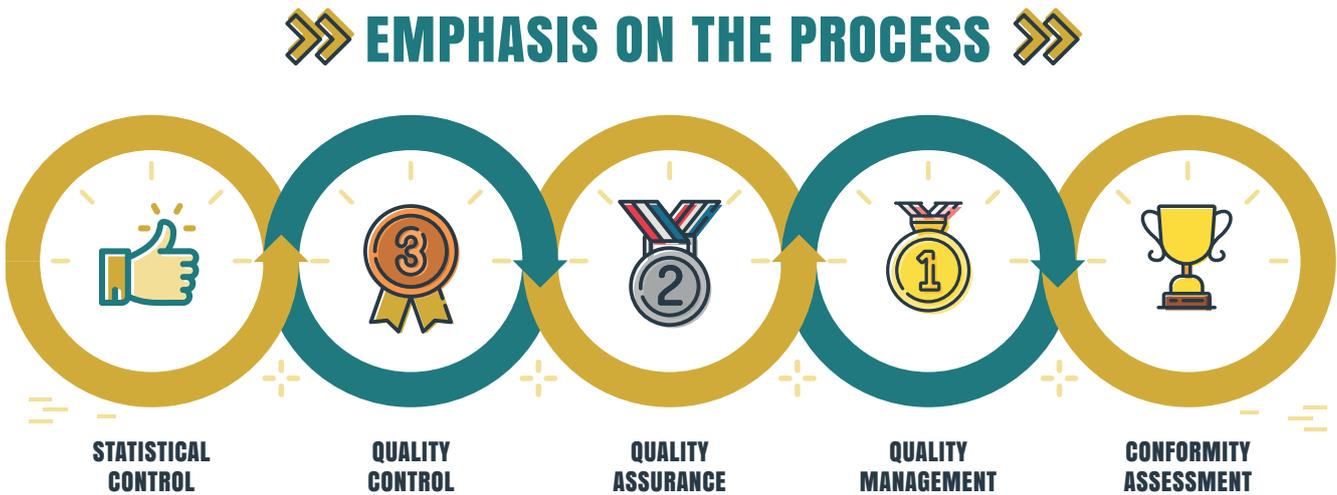


Figure 16: Quality in the supplier chain process

The supplier relationship area removes the emphasis on approving the product, and focuses on the production process. Along those lines and in line with and support from related areas, Cemig aims at achieving a system of quality audits focused on processes and also on safety, the environment, social responsibility, and integrity. It is important to consider that, in this auditing process, Cemig acknowledges its educational and market preparation role, and that it must not only demand from suppliers, but also prepare them and the market for what is important for a good relationship with customers.

## R&D INTELLIGENT SUPPLY CHAIN MANAGEMENT

During its first year of implementation, the R&D Intelligent Supply Chain Management project applied widely researched and tested concepts to Cemig's Supplies function, given the research problems that justified the need for a specific R&D process.

Universidade Presbiteriana Mackenzie (Mackenzie Presbyterian University) and the European Institute of Purchasing Management, together with Cemig's professionals, have progressed on topics such as the supplier qualification methodology, which made R&D into a company-wide project, with contributions from the Compliance, Environment, Health and Safety, and Social Responsibility areas - topics that have become requirements to be elective as a Cemig's supplier. There has also been progress in automating the process of

analyzing financial indicators by the adoption of an academic methodology that produces indices and runs quantitative and objective analyses without human interference.

The added value view was integrated into the survey to link the analysis of Cemig spending to that of third parties based on its social accounting report, providing new views of spending by

suppliers, categories, locations, and business units. The integration of financial and expense analysis provides the suppliers' level of dependence.

In 2019, also regarding R&D, an international seminar was held. It focused on the international market, best practices, and Supplier Management. This will provide subsidies for continuous innovation and consolidation of an Intelligent Supply Chain Management at Cemig.

## 6.7 MAIN MONITORING ITEMS AND INDICATORS

**[102-9; 204-1]** The main monitoring items in Cemig's supplier management area are shown in the table below, with an emphasis on the figures in the picture and charts below. In 2019 1,162 new supplier agreements were executed, amounting to R\$ 2.907 billion negotiated. Along 2019, R\$ 2.854 billion reais in supplier agreements were paid.

Expenditures with suppliers				
Year	Contracted Amount	Disbursed Amount	Agreements Executed	Number of Suppliers
2017	R\$ 3.040 B	R\$ 2.188 B	1595	908
2018	R\$ 2.338 B	R\$ 1.319 B	1408	748
2019	R\$ 2.907 B	R\$ 2.854 B	1168	490

**Table 35:** History of expenditures with suppliers

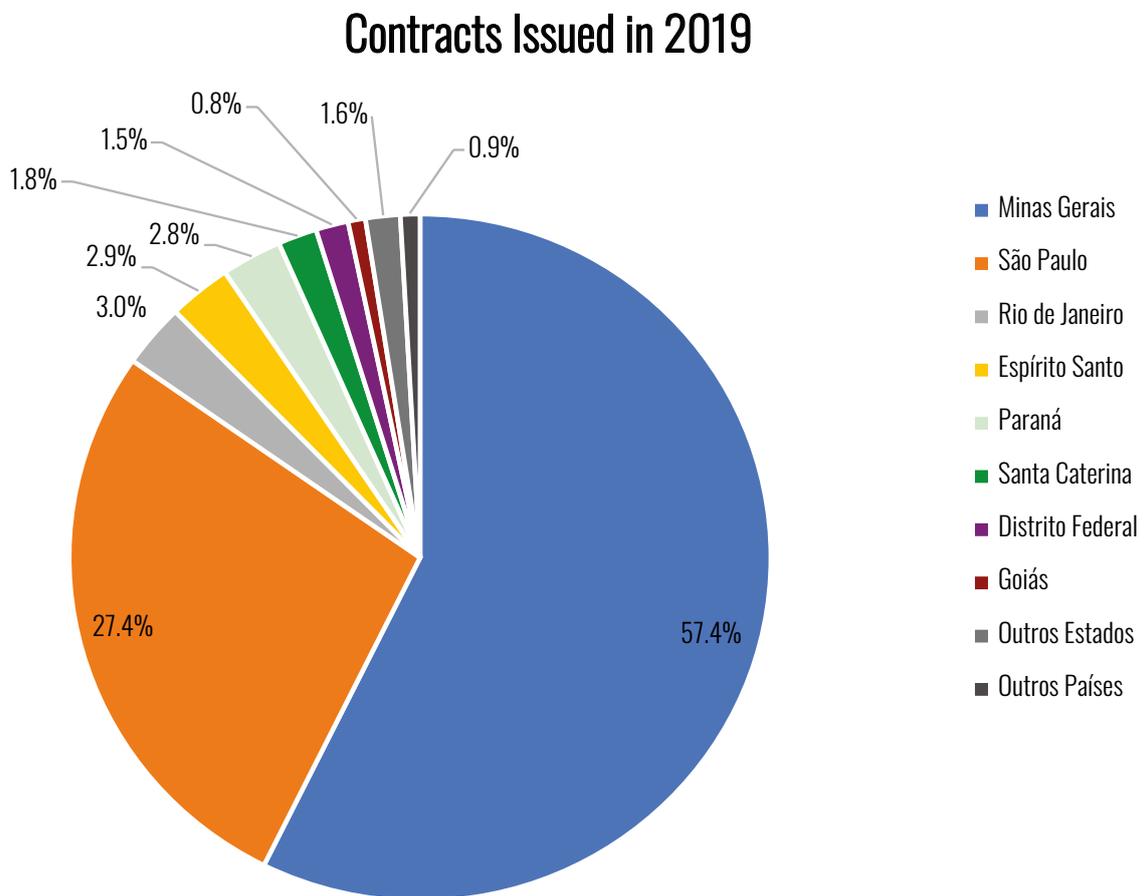
**109** - The above-mentioned disbursed amount refers to the total amount paid to suppliers, not only to disbursements corresponding to the amount contracted in the year.

Composition of Expenditures with Suppliers				
Category	Contracted Amount	Disbursed Amount	Contracts in Effect	Number of Suppliers
Material	R\$ 1.04 B	R\$ 0.564 B	403	217
Service	R\$ 1.86 B	R\$ 2.290 B	765	278

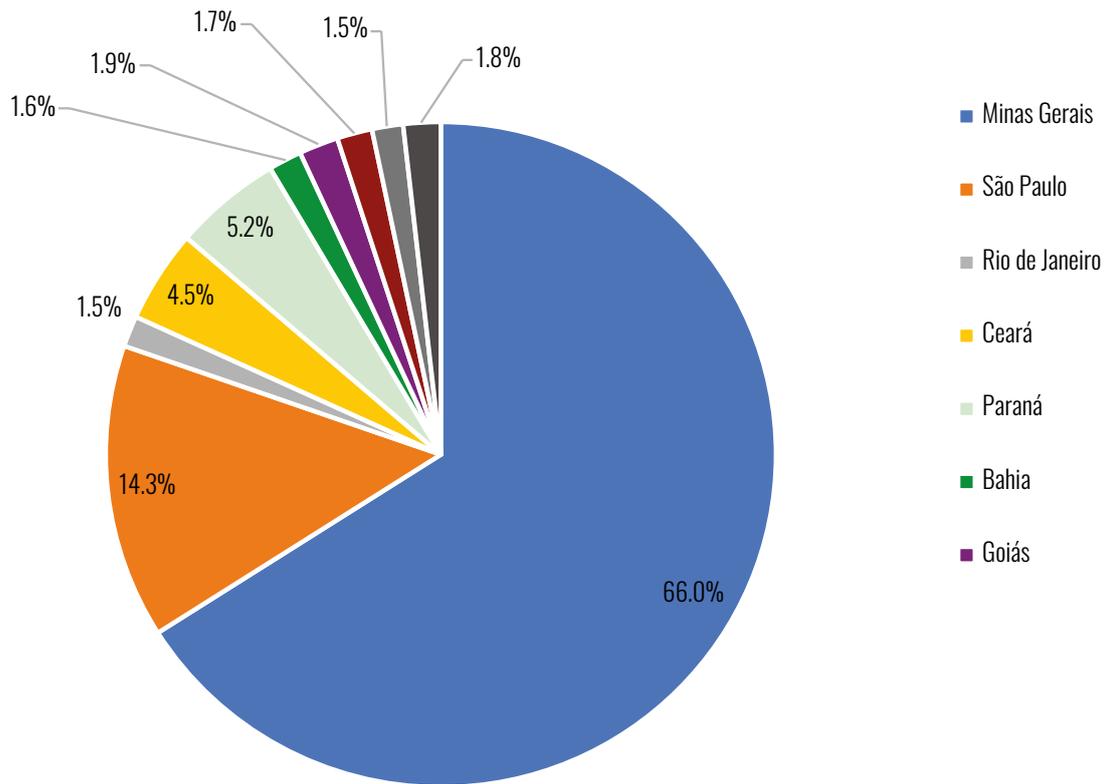
Table 36: Expenditures with suppliers in 2019, by category

110 - The total number of suppliers does not represent the sum of service and material suppliers, as some suppliers provide both services and materials.

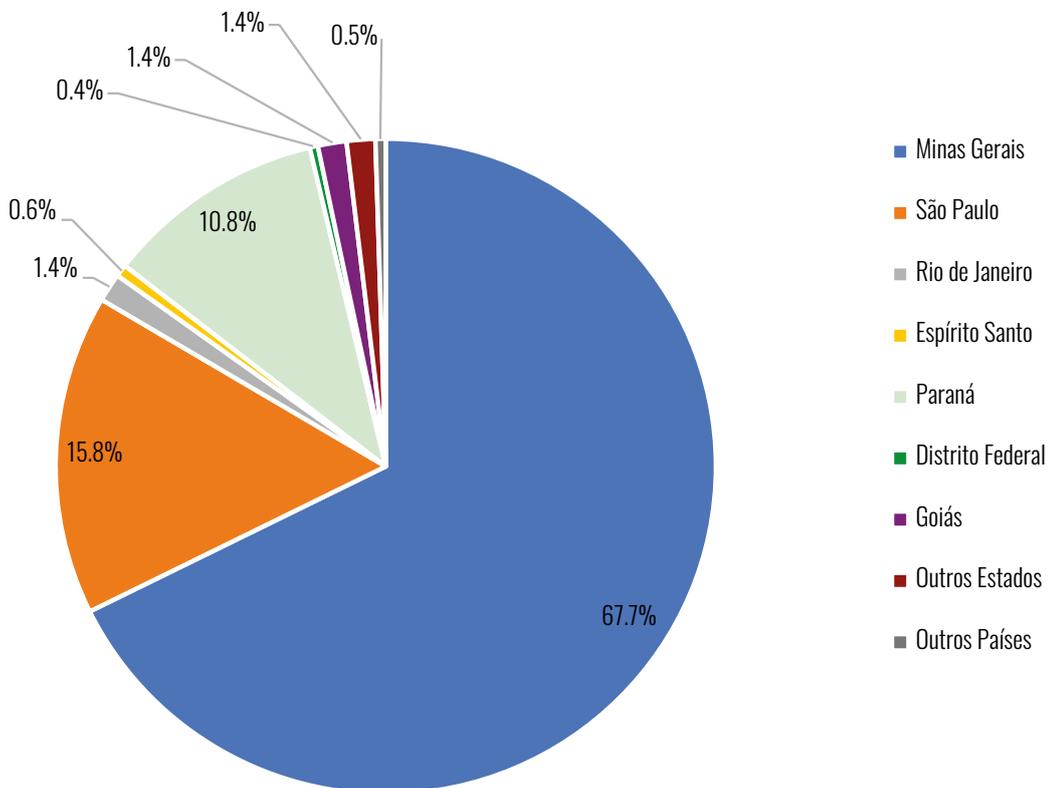
Gráfico 10: Stratification of suppliers by region



## Disbursed amount in 2019



## Contracted Amount in 2019



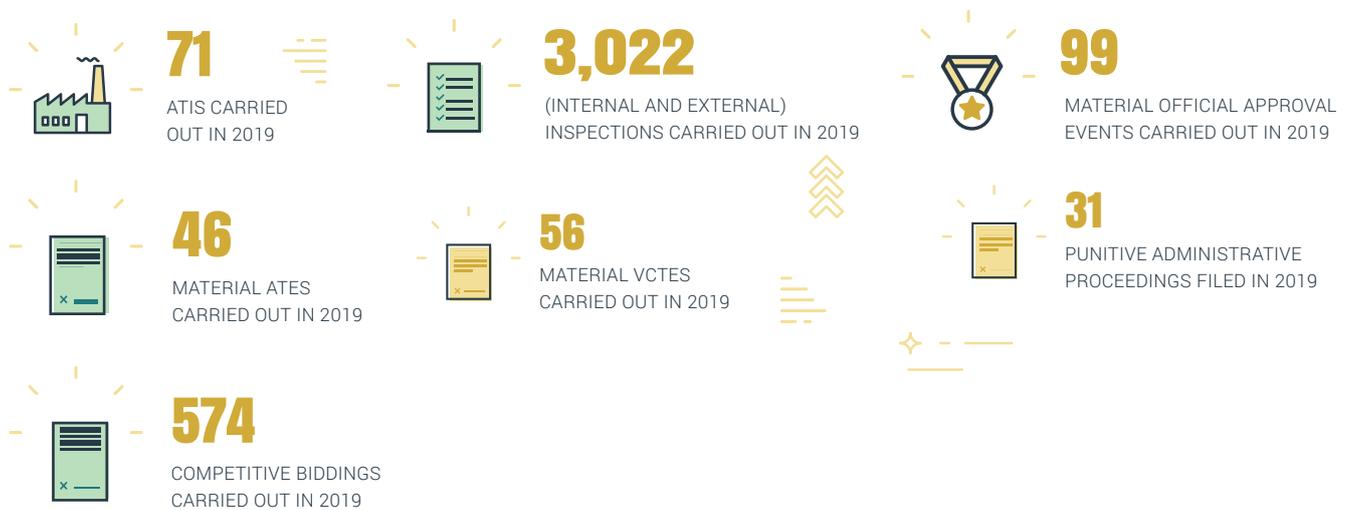


Figura 16: Other 2019 figures regarding Supplier Management

# CEMIG AND SUSTAINABLE DEVELOPMENT



## SUSTAINABILITY PLAN

Sustainability has increasingly taken on a fundamental role in companies that want, in a responsible way, to thrive in their market. And their great challenge has to do with the fundamental principle of sustainability: the balance between the social, economic, and environmental aspects. Statistics show that companies acknowledged as sustainable have their shares valued in the capital market and improve their image before their stakeholders.

Mindful of the corporate sustainability pillars, Cemig continuously aligns the creation of economic value, respect for social relations with

stakeholders, and preservation of the environment by developing several projects in the social, economic, and environmental fields.

Since 2016, Cemig has an Environmental Policy in place containing 6 principles that guide its activities and direct its efforts related to the protection of the environment, the conservation of biodiversity, the sustainable use of natural resources, the management of waste, and the mitigation of and adaptation to climate changes. These principles are translated into actions, which are intended to make employees and partners aware of the main environmental challenges for Cemig and the world.

At the same time, Cemig's social responsibility is incorporated into its daily life and is part of its Mission, which places the issue at the center of the Company's strategy. As a provider of public services, the Company's social strategy includes relationships with society, its internal public, suppliers, and consumers, in addition to responsibility for its products and services and respect for human rights.

In doing so, Cemig generates value for its shareholders, consumers, and for the whole of society.

Cemig's Sustainability Plan was developed in an integrated manner in 2019, with the involvement of several areas of the Company, aiming at the following main objectives:

- Align sustainability efforts to Strategic Planning;
- Create value for stakeholders;
- Identify risks and opportunities, integrating sustainable principles and practices into the organizational culture;
- Identify the major gaps and points for improvement in the socio-environmental and governance aspects;
- Keep the company in line with best practices, boosting sustainability leadership;
- Improve communication of the sustainability strategy to stakeholders and add value to Cemig's brand and reputation.

Initially, a comprehensive analysis of the external environment was carried out, in order to identify trends, risks, threats, and opportunities that may affect Cemig, as well as a systematization of the major topics, considering the Environmental, Economic, Social and Corporate Governance aspects. At that time, several sources of information, international methodologies, sustainability ratings, benchmarking with reference companies in sustainability, and the electricity sector, and the Sustainable Development Goals - ODSs were analyzed.

Subsequently, an analysis of the internal environment was carried out to map the impacts caused by the Company's operations along its value chain, and identify the major weaknesses, points for improvement and best practices. At that time, interviews were conducted with specialists in the areas, questionnaires were answered, and a workshop with the leadership was held, in addition to a detailed analysis of the Company's internal policies and guidelines.

Based on the information obtained via internal and external analysis, the 7 most relevant topics were defined and prioritized, as shown below; they were then broken down into 31 sub-topics that make up the Materiality Matrix of the Sustainability Plan:

- Governance;
- Risk management;
- Innovation and renewable energies;
- Value chain management;
- People management;
- Natural capital and climate change management;
- Efficiency.

Moving on with the work, initiatives were proposed in line with the corporate strategic planning and the “top risks” of the Company, for the validation and implementation of actions by the various areas in charge of them in a 5-year scenario, starting in 2020.

For monitoring, measurement, and analysis of the results of Cemig's Sustainability Plan, around 50 indicators related to the topic are being defined. Their performance will be assessed at the end of each year against the previous year, in addition to monitoring implementing and carrying out the initiatives.

Within this process, there was a review of the goals defined by the Company and the assignments of these goals. Below are the main goals and objectives in force in 2019, which are still under evaluation. Some of these goals will be monitored within Cemig's Strategic Planning, and some will be monitored within the Sustainability Plan.

Goal	Performance in 2019	Further information
Complete, in 2019, the drafting of Cemig's Sustainability Plan.	The Sustainability Plan has been concluded and is being implemented. Goal achieved.	-
Fully comply with the Distribution Result Plan agreed with Aneel - Sep/2017 - Aug/2019	The Result Plan was closed in 2019 with some points for improvement. The goal was not fully met and a new Result Plan was agreed with Aneel - Oct/2019 - Sep/2020.	Chapter 2 - Business Model
Invest, in 2019, resources equivalent to 0.30% of the Net Operating Income (NOI) in research, development, and innovation (INOV indicator).	In 2019, the Company invested R\$ 114.8 million. This amount represents 0.705% of the Gross Operating Revenue, thus confirming the achievement of the goal.	Chapter 2 - Business Model
Obtain an ICONF - Cemig's Compliance and Governance Index in 2020 at each Executive Department equal to or greater than 75%	Indicator created in 2019 to be determined in 2020.	Chapter 3 - Corporate Governance
Have, in 2019, an IPTD (Total Losses in Distribution Index) lower than 11.49%.	The total loss index calculated in 2019 was an IPTD of 13.57%. This result is 2.08 percentage points above the limit, thus preventing the achievement of the goal.	Chapter 4 - Customers
Have, in 2019, a DEC below 10.53 hours.	The global annual DEC calculated in 2019 was 10.62 hours, so the stipulated goal was not met.	Chapter 4 - Customers

Have, in 2019, a FEC below 7.24 interruptions.	The global annual FEC determined in 2019 was 5.05 interruptions, so the stipulated goal was met.	Chapter 4 - Customers
Obtain, in 2019, an Aneel Consumer Satisfaction Index (IASC) equal to 70.	The satisfaction survey conducted by Aneel in 2019 showed a result of 70.58% for Cemig. The goal was achieved.	Chapter 4 - Customers
Obtain, in 2019, a Perceived Quality Satisfaction Index (ISQP) above the Abradee average.	The satisfaction survey carried out by Abradee in 2019 showed a result of 73.1 for Cemig and 70.3 for the average of energy distributor utilities. The goal was achieved.	Chapter 4 - Customers
Have, in 2019, a training efficiency index above 80%.	In 2019, the level of customer satisfaction (leaders with teams that participated in training) was determined, with a result of 95.1%; thus the goal was achieved.	Chapter 5 - Employees
Have, in 2019, more than 15 hours of training per employee.	The average man-hour trained in 2019 was 56.5 hours for face-to-face training and 6.87 hours for extramural training, totaling 63.38 hours trained per employee. The goal was achieved.	Chapter 5 - Employees
Have, in 2021, an accident frequency rate (TFA) below 1.80.	In 2019, the Accident Frequency Rate for Cemig's workforce was 1.60, 1.76 for contractors, and 1.03 for in-house employees. The goal was achieved.	Chapter 5 - Employees
Make investments of R\$ 4.5 billion between 2018 and 2022 under the Distribution Development Plan (PDD).	The five-year investment cycle, as per the sector regulations, covers the period from 2018 to 2022, with an amount of R\$ 6 billion having been approved for this period. In 2019, the Company made investments amounting to approximately R\$ 971.3 million, totaling 1.8 billion invested so far.	Chapter 7 - Economic Performance
Distribute in 2019 at least 50% of Net Income (NI) in the form of dividends.	The Board of Directors decided to forward to the AGO - to be held on 30/Apr/2019 - the proposal to allocate R\$ 867 million as minimum mandatory dividends to the Company's shareholders, which amounts to 51% of the 2019 Net Profit. With the approval of this proposal at AGO, the goal shall be achieved.	Chapter 7 - Economic Performance

Present, in December 2019, a net debt/EBITDA ratio of less than 3.5.	The net debt/EBITDA ratio determined in 2019 was 3.08, thus confirming the goal was achieved.	Chapter 7 - Economic Performance
At the end of 2019, it had an EBITDA between R\$ 4.733 and R\$ 5.133 billion.	In 2019, the Company's EBITDA was R\$ 4,376 million. The goal set was not achieved, but this result amounted to a 15.7% increase against 2018.	Chapter 7 - Economic Performance
Maintain, in 2019, the Company's consolidated debt at an amount equal to or less than 2 (two) times the EBITDA (earnings before interest, taxes, depreciation, and amortization).	At the end of the 2019 financial year, the Company's indebtedness amounted to R\$ 14,776 million, a value 3.37 times the EBITDA. The goal was not achieved.	Chapter 7 - Economic Performance
Have, by 2021, 35% of employees participating in the AI6% Program.	in 2019, 27.6 % of employees participated in the AI6% Program, showing a tendency to meet the goal in 2021.	Chapter 8 - Social Performance
Incorporate, by 2019, the Integrated Vegetation Management methodology as a standard procedure for the maintenance of bandpasses for Transmission Lines.	Integrated Vegetation Maintenance - MIV is already formalized and incorporated into Cemig's bandpass maintenance procedures.	Chapter 9 - Environmental Performance
Carry out the Cemig's Urban Tree Planting Circuit on an annual basis.	The Urban Tree Planting Circuit was held in 2019 in the towns of Abaeté and Piumhi.	Chapter 9 - Environmental Performance
Have a maximum of 819kg of biomass affected by 2021.	In 2019, measurements of biomass affected by Cemig operations amounted to 111 kg, a low figure compared to the one laid down in the goal. The goal was achieved.	Chapter 9 - Environmental Performance
Maintain, until 2022, power consumption at the level of amounts consumed in 2017.	In 2019, total energy consumption was 780,196 GJ, an amount 4% higher than the consumption in 2017. For 2019, the goal was achieved.	Chapter 9 - Environmental Performance
Plant 200 hectares by 2021 (Forest Compensation).	In 2019, 100 hectares were planted, in addition to the maintenance of another 60 ha. 10,600 seedlings planted and 52 km of fences built around springs and protected areas. 50% of the goal has already been achieved.	Chapter 9 - Environmental Performance

Reduce, by 2020, the Company's water consumption by 4%, based on consumption in 2011.	In 2019, a 89.5% reduction against the consumption in 2011 was verified. That result shows a trend toward reaching the goal laid down for 2020.	Chapter 9 - Environmental Performance
Have, in 2020, 99% of its industrial waste recycled, regenerated or disposed of.	In 2019, from all industrial waste produced by Cemig, 99.74% was destined to recycling, generation, or sale. That result points to a trend toward reaching the goal laid down for 2020.	Chapter 9 - Environmental Performance
Reduce, by 2020, the intensity (ton/MWh) of emissions of particulate matter from thermal sources by 2% and the emissions of particulate matter from vehicle sources by 4%, having 2017 as the base year.	In 2019, the intensity (ton/MWh) in particulate material from thermal sources dropped by 11%, and that of vehicle sources dropped 3%, against 2017. These results show a trend toward reaching the goal by 2020.	Chapter 10 - Climate Change
Reduce, by 2020, the intensity (ton/MWh) of emissions of NOx from thermal sources by 1% and the emissions of NOx from vehicle sources by 4%, having 2017 as the base year.	In 2019, the intensity (ton/MWh) in NOx from thermal sources dropped by 11%, and that of vehicle sources dropped 1%, against 2017. These results point to a possible trend of reaching the goal laid down for 2020	Chapter 10 - Climate Change
Reduce, by 2020, the intensity (ton/MWh) of emissions of SOx from thermal sources by 25%, having 2013 as the base year, and the emissions of SOx from vehicle sources by 15%, having 2017 as the base year.	In 2019, the intensity (ton/MWh) of SOx emissions from the thermal source decreased 14%, and that from vehicle sources decreased 94%, against 2017 (a large part of this reduction is due to a change in the emission factor). These results point to a possible trend of reaching the goal laid down for 2020.	Chapter 10 - Climate Change
Maintain the percentage of SF6 losses (kg of SF6 issued/total installed quantity of SF6) at a maximum of 0.66% until 2022	In 2019, the percentage of loss of SF6 verified was 0.48%. The goal was achieved.	Chapter 10 - Climate Change
Have, in 2019, scope 1 emissions at most equal to 56,842 tCO2e.	In 2019, the total scope 1 emissions verified by Cemig was 51,938.62 tCO2e, 9.44% below the projected target. The goal was achieved.	Chapter 10 - Climate Change

Table 37: : Goals being developed by the Sustainability Plan

## SUSTAINABILITY COMMITTEE

Reaffirming the importance that this topic has for Cemig, in 2019 the Company formally established its Sustainability Committee with the purpose of consolidating the integration of corporate sustainability into the Company's management process. It aims at proposing policies, guidelines, actions, plans, and projects, in addition to strategic initiatives, to foster Cemig's performance in the social, environmental, economic, and corporate governance aspects, with a focus on its contribution to sustainable development.

The Committee is made up of 7 representatives and their respective deputies, with one representative of each of the following areas:

- Cemig GT's Board (DGT);
- Cemig D's Board (DCD);
- Cemig Trade's Board (DCC);
- Cemigpar's Board (DCP);
- Finances and Investor Relations' Board (DFN)
- Corporate Communication and Sustainability Area, linked to the CEO's Office (DPR), and;
- Strategy, Environment, and Innovation (PM) Superintendence, linked to the CEO's Office (DPR).

The Committee coordination is conducted by an executive coordinator, who is responsible for monitoring and validating the work carried out, and a technical coordinator, in charge of carrying out the work. Both are appointed by the CEO's Office (DPR).

There are a Social Responsibility Work Group and a Business Diversity Appreciation Work Group, which are directly linked to the committee. They are coordinated by employees allocated to the Corporate Sustainability Management Department (DPR/SE), and a Work Group to monitor the Environmental Adequacy Program, which is coordinated by an employee allocated to the Environmental Management Department (PM/GA).

Cemig's Sustainability Committee has an advisory function. It does not have decision-making attributions. However, they may call, at their discretion, employees or support groups from the Company to guarantee the full and effective execution of its activities.

# 7

## ECONOMIC PERFORMANCE

[102-45] The accounting data presented in this report refer to the group of companies Cemig holding has operational control of, except when mentioned otherwise in the text. As companies under this umbrella can be found in the Cemig Group's organizational chart presented in the chapter 'Cemig'.

All data presented here are included in Cemig's Administration Report and Financial Statement<sup>III</sup>. These data were consolidated based on criteria laid down in Brazilian legislation (for more details, see note 3 to the Standardized Financial

Statements - DFP, on Cemig's website).

III - Available at: [http://ri.cemig.com.br/ptb/18677/2453\\_746939.pdf](http://ri.cemig.com.br/ptb/18677/2453_746939.pdf)

In 2019, Cemig showed a net profit of R\$ 3,127 million, against a net profit of R\$ 1,700 million in 2018, amounting to an 83.9% increase.

### Fiscal Year Net Earnings - 2019

Amounts in R\$ - million

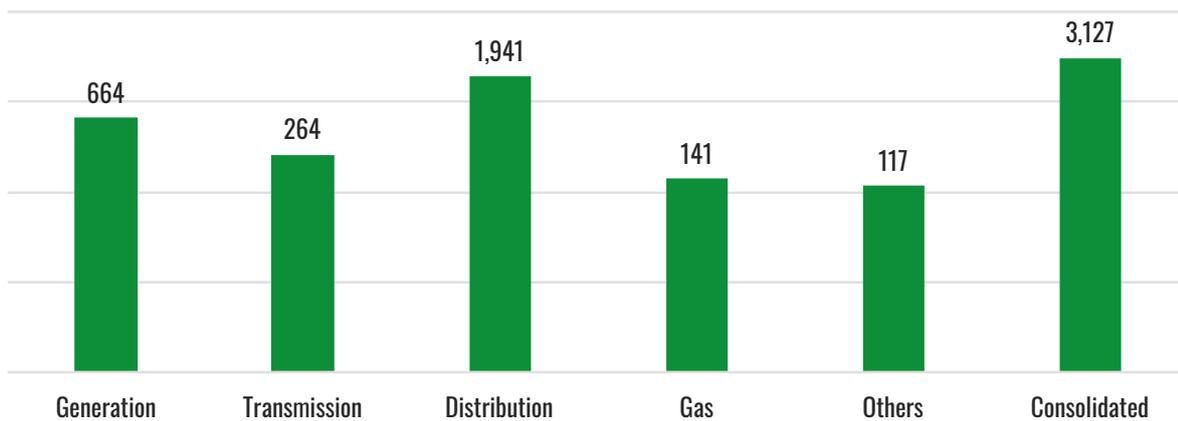


Chart 11: Fiscal year net earnings by segment and consolidated

## Net Earnings – 3-year History

Amounts in R\$ - million

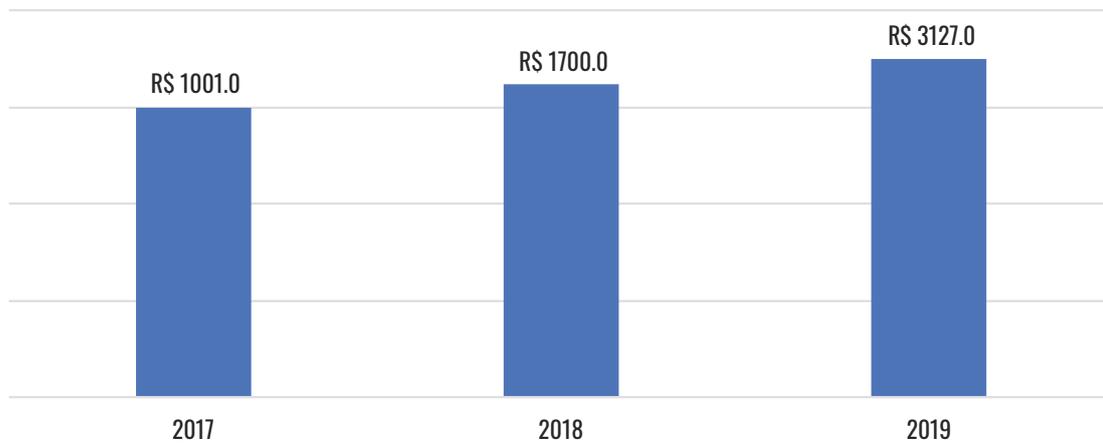


Chart 12: Net earnings historical series

[201-4] In 2019, Cemig did not count any kind of financial assistance received from the government. The major variations in revenue and net financials costs and expenses are provided throughout this chapter.

## 7.1

# MAJOR FINANCIAL INDICATORS



## EBITDA

In 2019, Cemig's results, which were already following an upward curve, displayed significant growth. The Company's cash generation, as measured by EBITDA, grew 15.7%, from R\$ 3,781 million in 2018 to R\$ 4,376 million in 2019.

EBITDA - (R\$ million)	2017	2018	2019	18/19 Variation
Income for the year	1,001	1,7	3,127	84%
+ Income Tax and Social Security Expenses (*)	664	728	1,651	127%
0	997	518	(-1,360)	-362%
0	850	835	958	15%
EBITDA	3,492	3,781	4,376	16%

Table 12: EBITDA 2019

\* - The income tax and social contribution expense in 2019 and 2018 include, respectively, the amounts of R\$ 85 and R\$ 129 million, which are presented by net include of discontinued activities.

The Company's EBITDA margin did not show any significant variation; it was 16.9% in 2018 and 17.2% in 2019.

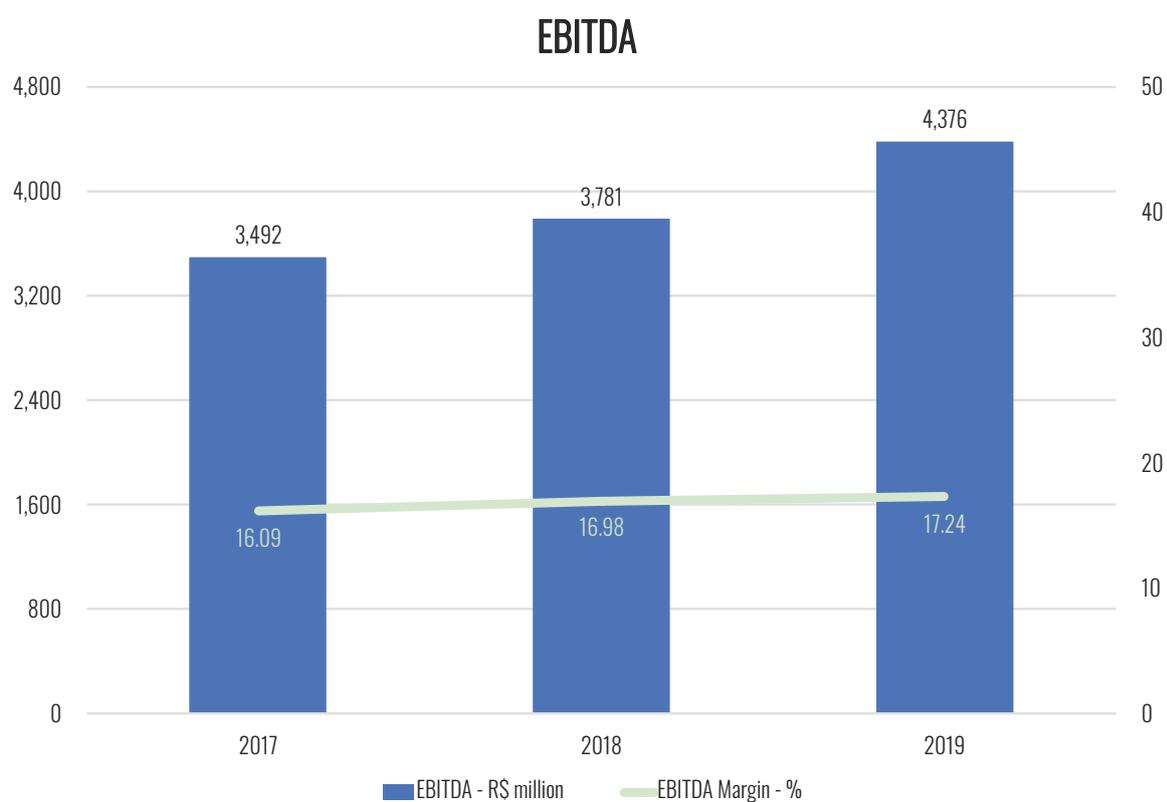


Gráfico 13: EBITDA

## OPERATING REVENUE

**[103-2-201; 102-3-201]** In general, for the businesses of the Company and its subsidiaries in the electricity, gas and other sectors, revenues are recognized when a performance obligation is met at the amount expected to be received in exchange for the goods or services transferred, which should be allocated to this performance obligation. The Company recognizes revenue only when it is probable that it will receive the consideration in exchange for the goods or services transferred, considering the customer's ability and intention to fulfill the payment obligation.

**[102-7]** The composition of operating revenue for fiscal years ending on December 31, 2019, is as follows:

Operating Revenues (R\$ Million)				
Revenue Composition	2017	2018	2019	18/19 Variation
Gross Supplying of Power	23,701,361	24,871,995	26,927,559	8%
Revenues from the Use of Distribution Systems - TUSD	1,610,593	2,044,599	2,722,444	33%
CVA and Other Financial Components	988,26	1,973,064	57,988	-97%
Revenues from Transmission Concession	371,066	410,852	504,314	23%
Revenues from Transmission Construction	24,827	95,712	220,39	130%
Revenues from Transmission Indemnity	373,217	250,375	155,013	-38%
Revenues from Generation Indemnity	271,607	55,332	-	-
Revenues from Distribution Construction	1,093,921	801,778	979,308	22%

Adjustment of the cash flow expectations for the recoverable financial asset of the distribution concession	8,586	325	17,839	5389%
Revenue from the Financial Correction of the Grant Share Dividend	316,88	321,427	318,266	-1%
Transitions with energy at CCEE	860,108	217,218	431,994	99%
Gas supplying	1,758,692	1,995,406	2,298,114	15%
Penalty for violation of continuity indicator standard	-	-44,326	-57,897	31%
Other operating revenues	1,483,377	1,584,094	1,723,059	9%
Recovery of PIS/Pasep/Cofins tax credit	-	-	1,427,786	-
Taxes and burdens on revenues	(11,150,805)	(12,311,634)	(12,335,871)	0%
Net operating revenues	21,711,690	22,266,217	25,390,306	14%

Table 13: : Operating Revenues

Revenue from gross power supply was R\$ 26,928 million in the 2019 fiscal year, against R\$ 24,872 million in 2018, amounting to an 8.27% growth. Revenue from energy sold to final consumers, in its turn, was R\$ 24,052 million in the 2019 fiscal year, against R\$ 21,882 million in 2018, a 9.91% increase.

The main items that affected this revenue are as follows:

- Cemig D's annual tariff readjustment, with an average impact on consumer tariffs of plus 8.73%, went into force as of Tuesday, May 28, 2019; and
- Cemig D's annual tariff readjustment, with an average impact on consumer tariffs of plus 23.19%, went into force as of May 28, 2018;
- Increase in the volume of energy sold to commercial class by Cemig GT and wholly-owned subsidiaries.

Also noteworthy is the 14.16% increase in the amount of energy sold to commercial consumers and the 2.65% increase in residential consumption in 2019, when compared to 2018. The increase in household consumption is mainly due to the incorporation of 149,331 consumer units.

On the other hand, there was a 9.41% reduction in the amount of energy sold to the industrial segment. This result is a merge of the 7.9% reduction in the captive segment, due mainly to the migration of customers to the free market, and a 9.7% reduction in that market. In the free market, the reduction is due to the termination of energy sales contracts.

Revenue from the use of power distribution systems refers to the tariff for the use of the distribution system (TUSD), arising from charges levied on free consumers for distributed energy. In 2019, this revenue amounted to R\$ 2,722 million, against R\$ 2,045 million in 2018, representing a 33.1% increase. This variation is mainly due to the Company's annual tariff adjustment, applicable as of May 28, 2018 (full effect in 2019).

Cemig GT's transmission revenue consists of the sum of the revenues from all transmission assets. Thus, the concession agreements establish the Annual Allowed Revenues (RAPs) of the existing system assets, updated annually based mainly on the IPCA (Wider Consumer Price Index) variation. That revenue amounted to R\$ 504 million in 2019, against R\$ 411 million in 2018, a 22.6% increase. This variation is mainly due to the annual RAP adjustment for inflation, which occurred in July 2019, added of new revenues related to authorized investments. It also includes the adjustment of the concession contractual cash flow expectation.

Revenue from transactions with energy at CCEE was R\$ 432 million in the 2019 fiscal year, against R\$ 217 million in 2018, a 99.1% increase. This variation is mainly due to Cemig GT obtaining a greater energy surplus in 2019, which was valued at the Varied Settlement Prices - PLDs defined monthly. Although the variation in the average annual PLD for 2018 and 2019 was not relevant,

energy surpluses occurred in 2019 in months with high PLDs, thus increasing revenue at CCEE in these months and the expected revenue for the year.

The Company recorded revenues from gas supplying amounting to R\$ 2,298 million in the 2019 fiscal year, against R\$ 1,995 million in 2018, a 15.2% increase. This variation is basically due to the increase in the pass-through of the costs of gas acquired from Petrobras and the readjustment of 6.7% (IGPM) in 2019.

Finally, it is worth mentioning the PIS/Pasep and Cofins tax credits on the ICMS tax amounting to R\$ 1,428 million, which resulted from the success of a lawsuit where the Company disputed the inclusion of ICMS in the tax base of PIS/Pasep and Cofins, with retroactive effect to July 2003. More information can be found in note 10, which appears in the 2019 DFP.

## OPERATING COSTS AND EXPENSES

Operating costs and expenses amounted to R\$ 22,479 million in the 2019 fiscal year, against R\$ 19,420 million in 2018, a 15.7% increase. The main variations in expenses are described below:

The expense with profit sharing of employees and managers in the net profit was R\$ 263 million in the year of 2019, compared to the amount of R\$ 77 million in 2018. This variation stems from the growth of Cemig's consolidated result, the basis for calculating the payment of profit sharing, given that the collective bargaining agreements are unified.

Expense with personnel was R\$ 1,272 million in the 2019 fiscal year, against R\$ 1,410 million in 2018, a 9.8% decrease. This variation is mainly due to the 10% reduction in the average number of employees in 2019, compared to 2018, those numbers being 5,796 and 6,430, respectively.

Expenses with third party services amounted to R\$ 1,239 million in 2019, against R\$ 1,087 million in 2018, a 13.9% increase. The major impacts are basically due to the prioritization of actions and expenditures by Cemig D, aiming at reducing energy interruptions and improving the quality of service to its consumers.

Infrastructure construction costs were R\$ 1,200 million in 2019, compared to R\$ 897 million in 2018, a 33.8% increase. These costs are fully offset by the construction revenue and correspond to the Company's investment in the period in concession assets. The greatest variation was noticed in the transmission activity, which increased by 130% in 2019, in the absolute amount of R\$ 125 million.

## NET INCOME FOR THE YEAR

The Company obtained a positive net financial income for the year in 2019 amounting to R\$ 1,360 million, compared to a net financial debt of R\$ 518 million in 2018. This increase was mainly due to the situations detailed below.

In 2019, there was an increase in gains from hedging operations contracted to hedge against the risks of foreign currency variation linked to Eurobonds, which reached the amount of R\$ 998 million, compared to R\$ 893 million in 2018. This variation was mainly due to the reduction in the estimated future interest rate curve during the term of the contracts, which contributed to the decrease in the liability (Company obligation), which is indexed to the Interbank Deposit (DI). The increase in the fair value of the option (call spread) also contributed to the gain in hedge operations.

Also, the updating of PIS/Pasep and Cofins tax credits on ICMS tax, amounting to R\$ 1,580, contributed to this positive result.

Finally, the decrease in the exchange rate variation linked to foreign currency loans, which amounted to a financial expense of R\$ 226 million in 2019, compared to a financial expense of R\$ 582 million in 2018. This decrease is due to the drop in the exchange rate variation in force in the period, which was 4.0%, compared to the 17.0% variation in 2018.

## INCOME TAX AND SOCIAL SECURITY

In the 2019 fiscal year, the Company recorded expenses with income tax and social security amounting to R\$ 1,566 million against LAIR (profit before taxes on profit) of R\$ 4.469 million, excluding the result of discontinued operations, amounting to an actual tax bracket of 35.04%. The Company determined expenses with income tax

and social contribution in 2018 amounting to R\$ 599 million against LAIR of R\$ 1,977 million before taxes, thus amounting to an actual tax bracket of 30.3%.

## CASH AND CASH EQUIVALENTS

Cash and cash equivalents on Tuesday, December 31, 2019 totaled R\$ 536 million, against the R\$ 981 million balance on December 31, 2018, and were not maintained in currencies other than the real. The reasons for this variation are given below.

Cash Flow from Operational Activities: net cash from operating activities in 2019 and 2018 totaled R\$ 2,037 million and R\$ 1,008 million, respectively. The increase in cash produced by operating activities in 2019, compared to 2018, was mainly due to the increase in the Company's profitability and the relationship between non-manageable costs and Cemig D's tariff receivables noticed from the behavior of the variation in the values of "Portion A" items (CVA) and other financial components.

Cash Flow from Investment Activities: net cash used in investment activities in 2019 totaled R\$ 1,189 million, against a net cash used in investment activities in 2018 of R\$ 211 million. This result arises mainly from Gasmig paying the granting bonus amounting to R\$ 891 million to restore the economic and financial balance of

the concession contract and ensure its extension until 2053; this amount was added to Gasmig's asset remuneration base as an intangible asset to be amortized by the end of the concession agreement.

Cash Flow from Financing Activities: the cash flow consumed in financing activities during 2019 totaled R\$ 1,203 million, and consisted of the amortization of R\$ 4,883 million in financing and in obtaining R\$ 4,477 million in funds, in addition to the payment of R\$ 96 million in interest on equity and R\$ 701 million in dividends.

The cash flow used in financing activities during 2018 totaled R\$ 936 million, and consisted of the amortization of R\$ 3,527 million from financing and R\$ 2,990 million in financing having been obtained. Additionally, the payment of dividends and interest on equity in 2018 reached the amount of R\$ 509 million, 27% less than the amount paid in 2019.

Fundraising Policy and Debt Management: in the 2017 and 2018 financial years, the refinancing of the Company's debt cost more than in the past, in light of the liquidity challenge that was imposed on it. In 2019, on the other hand, Cemig, benefiting

from the reopening of the capital market and the improvement of its financial structure, concentrated its efforts on cost reduction and financial leverage.

In July 2019, Cemig D carried out its 7th ordinary bond issue, amounting to R\$ 3.66 billion. The resources incorporated into Cemig D's cash are considered part of debt management, allowing the Company to replace a set of more costly debts of equal value (average cost equivalent to 144.1% of IDC) and with maturity dates focused around the 3-year time frame for another with a lower cost and amortizations diluted over the next 7 years, thus contributing to increase the average term of Cemig D's total indebtedness from 2.9 years to 5.1 years.

Pursuing its intention to improve the quality of its credit, Cemig amortized a significant volume of debts in 2019. R\$ 4,173 million in debts was amortized at Cemig D and R\$ 610 million was amortized at Cemig GT.

## LIQUIDITY AND CAPITAL FUNDS

Cemig's business is capital intensive. Historically, the Company has needed capital to finance the construction of new generation facilities and expanding and modernizing existing transmission and distribution facilities.

Cemig's liquidity requirements are also affected by the dividend policy. Cemig finances liquidity and capital needs mainly using cash generated by operations and, to a lesser extent, with funds from financing.

## DISTRIBUTION OF ADDED VALUE

**[201-1]** The Statement of Added Value - DVA shows the Company's wealth building and representativeness to society, with R\$ 19,395 million of added value in 2019, against R\$ 17,343 million in 2018. The distribution of added value occurs in 4 major directions. A portion is intended for the Company's employees, through direct compensation, benefits, and a guarantee fund. Another part is destined to the municipal, state and federal governments, via the payment of taxes, fees and contributions. Also, part of it is intended for return on equity - the Company's and third parties - through interest, rents, dividends, and retained earnings. The chart below shows the form of this distribution for the 2019 fiscal year:

### Added Value Distribution - DVA

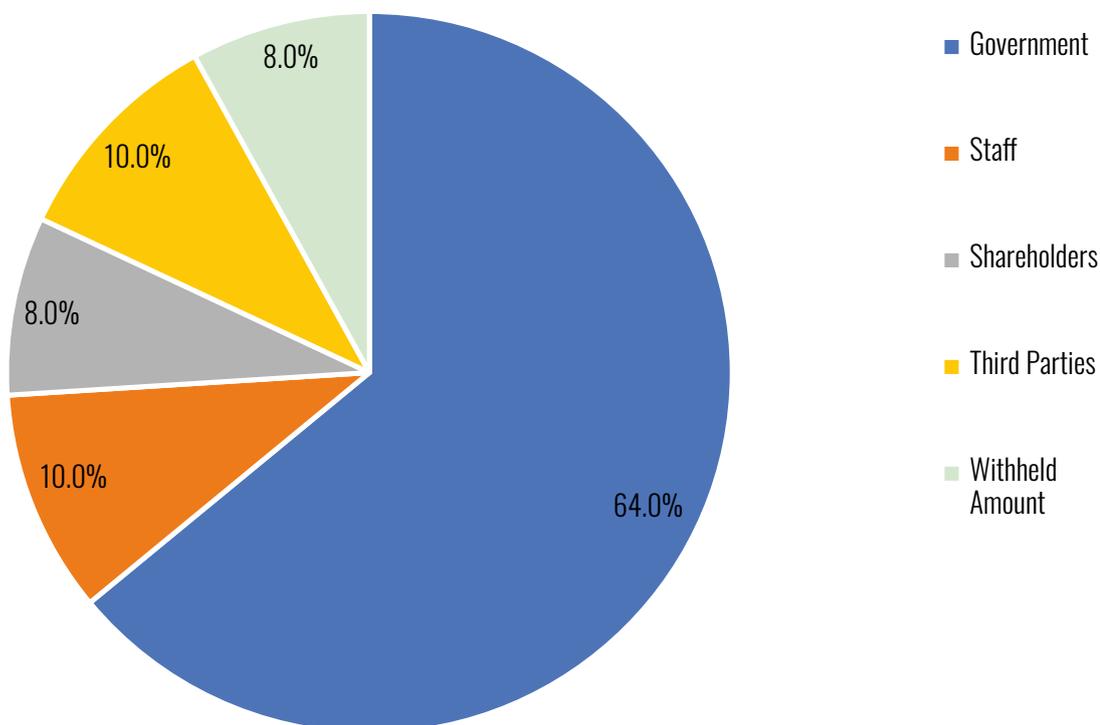


Gráfico 14: Added Value Distribution in 2019

# PROPOSAL FOR INCOME DISPOSAL

The Board of Directors decided to send to the General Shareholders' Meeting ("AGO") to be held on April 30, 2020, the following proposal for destination of the 2019 Net Profit - amounting to R\$ 3,127 million - and the balance of realization of the mobilization deemed - amounting to R\$ 24,812 thousand.

- Allocation of R\$ 764,181 thousand as mandatory minimum dividends to the Company's shareholders, as follows:

- R\$ 400,000 thousand the form of Interest on Net Equity ("INE"), to be paid in two equal installments, the first by Tuesday, June 30, 2020, and the second by Wednesday, December 30, 2020, with shareholders who have their names registered in the Registered Share Registration on Monday, December 23, 2019, being entitled to it;

- R\$ 364,181 thousand in the form of 2019 dividends to be paid in a single installment by Wednesday, December 30, 2020, with shareholders who have their names registered in the Registered Share Registration on the date of the AGO being entitled to it.

- R\$ 834.603 thousand to be destined to the Unrealized Earnings Reserves, considering the positive equity in earnings net financials from subsidiaries and affiliates not yet financially realized.
- R\$ 1,535,170 thousand destined to the Profit Retention Reserve, to guarantee the Company's consolidated investments planned for the year of 2020, according to the capital budget.
- R\$ 18,256 thousand destined to the Tax Incentive Reserve related to tax incentives obtained in 2019 from investments made in the Sudene region.

As provided for in Article 202 of Corporate Law, should dividends from investees referring to the 2019 fiscal year and still pending of financial realization by these investees be received, the reversal of unrealized profits reserve will be included in the calculation of the minimum mandatory dividend for the 2020 fiscal year.

## 7.2

# CAPITAL MARKETS AND DIVIDENDS

Cemig trades its shares at the São Paulo Stock Exchange (Bovespa) with the CMIG3 (ON) and CMIG4 (PN) symbols, at the New York Stock Exchange with the CIG and CIG/C denominations, and at the Madrid Stock Exchange under the name of XCMIG. Below are the closing quotes of shares in each of those markets for the years 2018 and 2019:

Name	Symbols	Currency	2017 Closing	2018 Closing	2019 Closing
Cemig PN	CMIG4	BRL	6.39	13.86	13.79
Cemig ON	CMIG3	BRL	6.32	14.39	15.59
ADR PN	CIG	US\$	1.91	3.38	3.34
ADR ON	CIG.C	US\$	1.83	3.76	3.90
Cemig PN	XCMIG	Euro	1.78	2.98	2.80

**Table 38:** Cemig shares market value

In 2019, CMIG4 preferred shares registered a trading volume of R\$ 33.7 billion, with a daily average of R\$ 136.1 million. This amount traded is 25.1% higher than that seen in the previous year, and makes Cemig's preferred share (PN) one of the most traded shares on Bovespa, providing security and liquidity for investors.

The average daily volume of trading with preferred shares on the New York Stock Exchange in 2019 was US\$ 12.66 million and produced US \$ 3.19 billion in financial activities, a level 22.2% higher than the 2018 one, which was 2.61 billion; this consolidates Cemig's position as a worldwide investment option.

In terms of performance, the Company was the one most traded in the electric sector at Bovespa. Cemig had the highest amount traded in 2019 among the ADRs of the Brazilian electricity sector traded on the NYSE.

The Company market value is represented by the totality of shares available at their market value on the last trading day of each year. In 2019 Cemig's market value amounted to R\$ 20,986 billion, a growth of 0.1% against the previous year.

## Market Value - R\$ millions

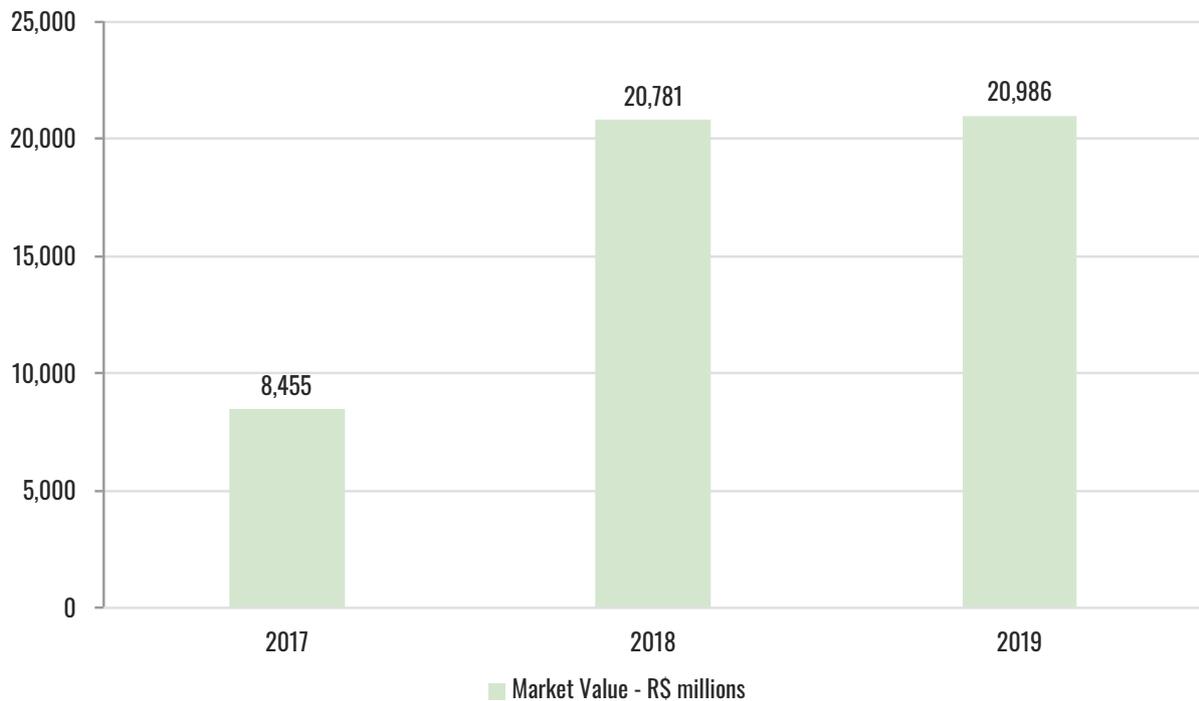


Gráfico 15: Market Value

### 7.3

## INVESTMENTS IN GENERATION, TRANSMISSION AND DISTRIBUTION



While concerned with the balance of finances by carrying out negotiations aimed at structuring the company cash flow, Cemig also works to constantly improve the services provided to its customers and consumers. Through various investment actions in new solutions, technical qualification, infrastructures and equipment, Cemig seeks to achieve its major objective: to offer the best quality of service, prioritizing the continuity of supply and the fast recovery in case of emergency events, maintaining the focus on the final consumer.

**[203-1]** To ensure the availability and reliability of power supply, Cemig has several initiatives focused on asset management<sup>112</sup>. In 2019, R\$ 1,235 million was invested in actions to improve and develop the Company's infrastructure, R\$ 986 million, R\$ 26 million and R\$ 223 million of which went for the power distribution, generation, and transmission segments, respectively.

The investments planned for the 2020-2024 period add up to R\$ 10.4 billion. For 2020, the investments planned amount to R\$ 2 billion, R\$ 1.7 billion will be invested in Cemig D, probably the largest investment in a distribution concessionaire in Brazil.

**112** - Referring to the EU-06 indicator of the sectoral supplement linked to the G3 version.

## DISTRIBUTION DEVELOPMENT PLAN - PDD

Through its Distribution Development Plan - PDD, Cemig D defines its priorities for the investments it will make, referring to the Regulatory Remuneration Base - BRR. These planning instruments also support the respective prudent management of resources in the current tariff cycle, with the objective of increasing the availability of power continuously, with quality, safety and in the amount required by customers, thus promoting social and economic development in Cemig D's concession area.

The PDD consists of undertaking projects linked to the electric power system and associated with the expansion, boosting, refurbishing and renovation of Cemig D assets, such as substations and distribution lines.

From the point of view of supply reliability, the PDD stands out for the macro-projects for boosting and reformatting the distribution system. These include investment actions aimed at reducing the number of interruptions in supply, reducing the number of consumers affected by each occurrence of these interruptions. This aims at imparting greater operational flexibility to the distribution system. The goal is to facilitate

the restoration from power outages, should they occur, thus reducing the time of interruptions for final consumers. These actions include works for deploying new substations, changes to the network to more reliable standards, and double feeds that allow localities to be served by more than one source in the event of an operational contingency.

According to the sector regulation, the five-year investment cycle covers the period from 2018 to 2022, with an amount of R\$ 6 billion having been approved for this period. These funds will be distributed among the several macro-projects, considering that, in 2019, R\$ 971.3 in investments was made, distributed as follows:

Macro-project	Amount invested
	(R\$ Million)
Expansion and reinforcement of high voltage lines	104,337
Care to consumers and accessing users (Cemig's Participation)	45,181
Renovation of the high voltage system	4,542
Operation and maintenance of high voltage lines	21,935
Reinforcement of medium and low voltage grids	50,039
Care to the medium and low voltage urban market	144,531
Care to the medium and low voltage rural market	107,47
Supplemental Program (Cemig's Participation) in low and high voltage	151,414
Third-Party Safety (Cemig's Participation)	15,132
Renovation of medium and low voltage grids	40,894
Operation and maintenance of medium and low voltage grids	121,311
Change of Measurement/Border Measurement	79,281
Medium Voltage Automation Master Plan	48,641
Judicial Outstanding Issues	26,428
Environment	2,236
Telecommunications;	7,972
Scada Project	-
<b>TOTAL</b>	<b>971,344</b>

**Table 39:** Investments in PDD Macro-Projects

As important as making investments is capitalization (accounting) to compose the Company's asset base, which is the source of the Distributor Utility's revenues. If capitalization does not carried out following regulation and deadlines, Aneel may order the non-remuneration of the asset, representing, therefore, loss of revenues, in addition to this constituting an infraction subject to a fine.

The optimal application of investments seeks to maximize the Distributor Utility's revenue and minimize its operating costs, aiming at (i) meeting the increased demand for energy, both from new and existing customers; (ii) contribute to a decrease in DEC (the average time that each consumer is without energy) and FEC (the average number of times that each consumer is without energy); and (iii) improving security at Cemig's facilities for employees, contractors and the population as a whole.

It is also worth mentioning that the Distributed Generation (DG) scenario has had an impact on the PDD, causing a sudden change in the prioritization of investments due to the unpredictable growth in the number of mini-generation connections distributed for remote compensation. Since it is the insertion of injected energy at points in the system where there are no loads to consume that energy, new investments are needed to accommodate this generation.

## 8

# SOCIAL PERFORMANCE

Cemig acknowledges that its business causes direct and indirect impacts to several communities. The Company also believes that the success of its business and the quality of its products depend on the relationship with several categories of stakeholders. Therefore, it values a harmonious interaction, respecting and considering the needs and contributions of each stakeholder.

The primary focus of the company's social management has been strengthening relationships and promoting social development in the communities (i) surrounding hydroelectric plants, (ii) along transmission networks, and even (iii) in places mostly influenced by Distribution, such as large urban centers.

## 8.1

# RELATIONSHIP WITH THE COMMUNITY



**[103-2:413; 103-3:413]** Cemig's strategic position concerning local communities in the areas where it operates includes social, environmental, and economic aspects to be considered in all the Company's projects. Its Policy of Communication with the Community determines that communication and engagement with stakeholders is the major route for corporate social responsibility.

This policy reinforces Cemig's commitment to transparency in its management efforts, with a focus on joint responsibility with the community, and the encouragement of local economic and social development, making public the fundamentals and premises that guide the definition of communication strategies and practices. They include objectives to create and perfect adequate communication tools between the stakeholders and the Company's main areas of activity, mainly those of generation, transmission, distribution, and energy development.

Cemig also has a Company's Communication Plan, which, together with the Policy of Communication with the Community, makes up the set of communication strategies adopted in the relationship with communities and directs the Social and Environmental Diagnostics prepared for each project or program.

Other documents that support and guide practices in the relationship with the community are the instruction on Social and Environmental Negotiations at Cemig IS - 48 and the Code of Ethics.

Cemig maintains a direct relationship with communities characterized as low income. This performance has been guided by the guidelines for relationship with the community and addresses different fronts of Cemig's performance in relation to human occupations in the Company's operating areas.

Opinion polls have been applied to allow knowledge and dialogue about the operations, projects and changes in the Company that impact communities, as well as to receive the main demands of the communities surrounding Cemig projects.

## 8.2

# TERRITORY MANAGEMENT



**[413-1; 413-2]** In order to build substations, power plants, and repeater stations, Cemig sometimes needs to acquire properties from residents of the communities or institute administrative easement, in the case of deployment of distribution and transmission lines and distribution grids.

Considering a territory as a space defined by power relations - where there is a presence and/or human or political activity - its management is vital to outline strategic guidelines and fair practices when Cemig carries out its activities. The relationship with the community is essential to mitigate negative impacts and optimize opportunities.

Aneel Normative Resolution No. 560/2013 determines the general procedures for energy distribution concessionaires to apply for a Declaration of Public Utility - DUP, which is necessary for deploying power generation, transmission, and distribution facilities in areas of social use.

Feasibility studies are prepared by in-house teams assembled for that specific purpose, whenever there is a need for property acquisition or expropriation. The previously-defined layout options are compared with areas of statutory reserve, preservation, consolidated land subdivisions and, simultaneously, with the mapping of impacted areas; this shows, for example, if there are leasehold improvements

to be suppressed when deploying projects and provides for confirmation of the people that will be affected by the projects. It also provides an understanding of the project acceptance by the impacted owners, indemnity amounts, and other relevant factors. Only after analyzing these factors that make up the feasibility studies, is the best layout chosen.

Cemig respects the individual integrity of each citizen, the history and culture of the communities affected by the projects, and also values friendly negotiations, seeking compensation at fair market price based on appraisal reports prepared under the Brazilian Association of Technical Standards NBR 14.653.

## HUMAN OCCUPATION IN HIGH VOLTAGE OVERHEAD LINES

**[103-2:413; 413-2]** Human occupation of the safety belts of high voltage overhead lines is a problem that several Brazilian power utilities are subject to. In addition to other factors, this happens as a reflection of the socio-economic conditions of part of the population. Most of the occupations are from low-income families with no housing options, who find in safety belts as an area available to establish themselves in, even in precarious conditions of life and safety.

Given this situation, and in line with its strategic planning, Cemig saw the need to work on safety solutions for the population. The goal is to revert this critical situation represented by the occupations of the safety belts of electric power transmission and distribution lines.

This is done by the implementation of short, medium and long term measures capable of restraining the spread of occupations via continuous surveillance, and of reducing the number of irregular occupations that are already there. This second action front is developed in partnership with the municipalities by signing agreements that allow the removal of illegal homes and the resettlement of families to decent housing units.

The following Structural Measures were maintained and implemented in 2019:

- Inspection and mapping services on rights-of-way by 30/Dec/2019;
- Publication of the Policy for the Determination and Prevention of Human Occupation under Power Lines.

As a way of minimizing the risks to the population, Cemig concluded the diversion of the 138 thousand Volts lines in the Santa Rita neighborhood, in the city of Juiz de Fora, which required an investment of approximately R\$ 1,400,000.00, removing approximately 45 families from the risk area.

On the other hand, given the urgent need for facing complex issues involving illegal occupations in line safety belts, 22 demolitions in illegal occupations in line safety belts were carried out in 2019 via detinue claims. Also in 2019, 108

detinue claims were filed aiming at new safety interventions along power line safety belts. Cemig is waiting a final decision of the court on these suits.

## DAM SAFETY

To address one of its major water risks and aiming at guaranteeing the safety of the dams operated and maintained by Cemig, the Company employs a methodology supported by the best national and international practices. This methodology also complies with Federal Law 12,334/2010, which lays down the Brazilian National Dam Safety Policy and its associated regulations (Aneel Normative Resolution No. 696/2015)<sup>113</sup>.

**113** - 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.

Dam safety measures include procedures for field inspections, collection and analysis of instrumentation data, drafting and updating of dam safety plans, planning and monitoring of maintenance services, analysis of results, and ranking of civil structures. Based on the ranking of the structures, the frequency of safety inspections and the monitoring routine are laid down.

Each dam vulnerability is continuously automatically calculated and monitored by the Dam Safety Specialist System (Inspector). The software was originally developed via an R&D project. It includes anomaly georeferencing tools that enable a global analysis of the behavior of each dam, as well as systemic analyzes of the portfolio. Inspector is scheduled to be upgraded during the first half of 2020, in line with technological developments and new regulatory requirements, in addition to incorporating risk management concepts.

Dam management activities include periodic safety reviews that, in addition to Cemig's professionals, may involve a multidisciplinary team of external consultants. During these activities, all issues related to safety are carefully verified.

Also as part of these activities, Cemig prepared specific Emergency Action Plans - PAEs for each dam, a new Proximity Program Proposal, established the "Dam safety of hydroelectric plants operated and maintained by Cemig

GT Working Group", and prepared the Crisis Management Plan for the dams.<sup>114</sup>

114 - GRI Setor Elétrico: EU-21

## I. EMERGENCY ACTION PLANS

In compliance to the law regarding dam safety, Cemig prepared the Internal and External Emergency Action Plans – PAEs detailed below:

- **Internal PAE:** a document where all detection, prevention, and correction procedures to be adopted by Cemig in an emergency situation are detailed. The document aims to impart a relative degree of certainty and agility to the decision-making process of the technical staff involved, and, where possible and appropriate, to preserve the structure of the dam, thus preventing accidents;
- **External PAE:** a document detailing the interfaces between Cemig and the external public to be put into place when emergency situations are detected.

In compliance with Aneel Normative Resolution No. 696/2015, internal PAEs have been addressed by the company's internal department responsible for the operation and maintenance of hydroelectric plants; these PAEs are now being made available for the projects and the dam and civil maintenance and technical staff. External PAEs must be available at the ventures, in the city halls involved, and also be handed to the competent authorities and civil defense organizations. The external 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.

Cemig prepared specific External PAEs for the 34 dams, as determined in a Normative Resolution. The 34 dams run by Cemig impact the life dynamics of 85 different municipalities, and in

some cases, the same municipality is included in 2 PAEs, since two dams are operating in its territory.

In 2019, some "Preparing the PAE" Work Meetings were held, moving on with the activities started in 2018. With the 8 meetings held in 2019, there were 21 work meetings, covering 9 plants and 24 municipalities.

Finally, 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<sup>115</sup> coordinators have a link to access the document, which will always be in its most updated version.

The other Integration Workshops will be held in 2020.

**115** - Municipal Coordination for Civil Defense and Protection.

## II. PROXIMITY PROGRAM

In compliance with the Brazilian National Dam Safety Policy (Law No. 12,334 from 20/Sep/2010) and its associated regulations, Cemig implemented a warning/alarm strategy and means of communication in the communities that may be affected by emergency situations resulting from dam breaches.

Once the PAEs are ready and delivered to the municipalities, the idea is to hold "PAE and PLANCON<sup>116</sup> Integration Workshops, for a technical presentation of the major information contained in the PAE. In 2019, 10 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.

In line with CEDEC-MG, Cemig also developed the Proximidade App and made it available as a risk management, alert notification, and registration action tool for use by COMPDECs.

**116** - Contingency Plans.

### III. WORK GROUP: DAM SAFETY OF HYDROELECTRIC PLANTS OPERATED AND MAINTAINED BY CEMIG GT

The “Dam safety of hydroelectric plants operated and maintained by Cemig GT Work Group” aims at increasing integration among the several areas of the Company. After its work was completed in December 2018, several initiatives to identify vulnerabilities, risks, and mitigating actions had been developed. Among the group's activities, the Crisis Management Plan was prepared.

### IV. CRISIS MANAGEMENT PLAN

The Crisis Management Plan for dams aims at:

- Formalizing synchronized actions that will be taken in case of dam emergencies, aiming at avoiding human losses and reducing material losses;
- Ensuring continuity of the company's activities;
- Prevent the organization critical business processes from being affected;
- Preserve the company's image;
- Provide information to the several publics; and
- Minimize impacts on the potentially-affected population.

The Crisis Management Plan will be implemented along 2019 with the Company's top management and together with the regional offices for decentralized actions.

## ACCESS TO ENERGY

Cemig sees access to energy as a fundamental vector for the development of regions and populations. Therefore, the Company constantly invests in upgrading and expanding its generation structures and its transmission and distribution networks, seeking to meet the increased demand for energy, both from new and existing customers..

In 2019, Cemig deployed 7,238.1 km of new distribution networks, allowing for 149,331 home consumer units to be connected to the grid, besides connecting over 85,453 business consumer units by laying 478.3 km of medium and low voltage grids. This means a 2.2% and 11.8% increase, respectively, against 2018. As for rural consumers, there was a 9.2% decrease in 2019 against 2018. This amounts to a decrease of 65,727 rural consumer units. Despite this, there was an extension of 2,825.84 km in the medium and low voltage distribution network in rural areas, amounting to an increase of 0.69% in 2019, against 2018.

In these cases, service to consumer units with a load of up to 50kW is done at no cost to the applicant, emphasizing the focus on promoting the possibility of development of the beneficiaries (granting access to energy for consumer units in urban and rural areas).

In 2019, Cemig reached a service rate of 99.7%, in 758 municipalities in its concession area, with a rate above 99% and no municipality with

a rate below 90%. Therefore, urban and rural electrifications did not have specific programs in 2019. The services were carried out following the regulatory conditions in force established by Aneel's Normative Resolution No. 414/2010 - General Conditions for Power Supplying<sup>117</sup>. In 2019, Cemig's service liabilities was 0.24%, 0.21% of which in the urban area, and 0.03% in the rural area.

117 - Electric Sector GRI: EU-23

The map below shows the service rate by municipality in Cemig's concession area

## SERVICE PROVISION INDEX - CEMIG GENERAL

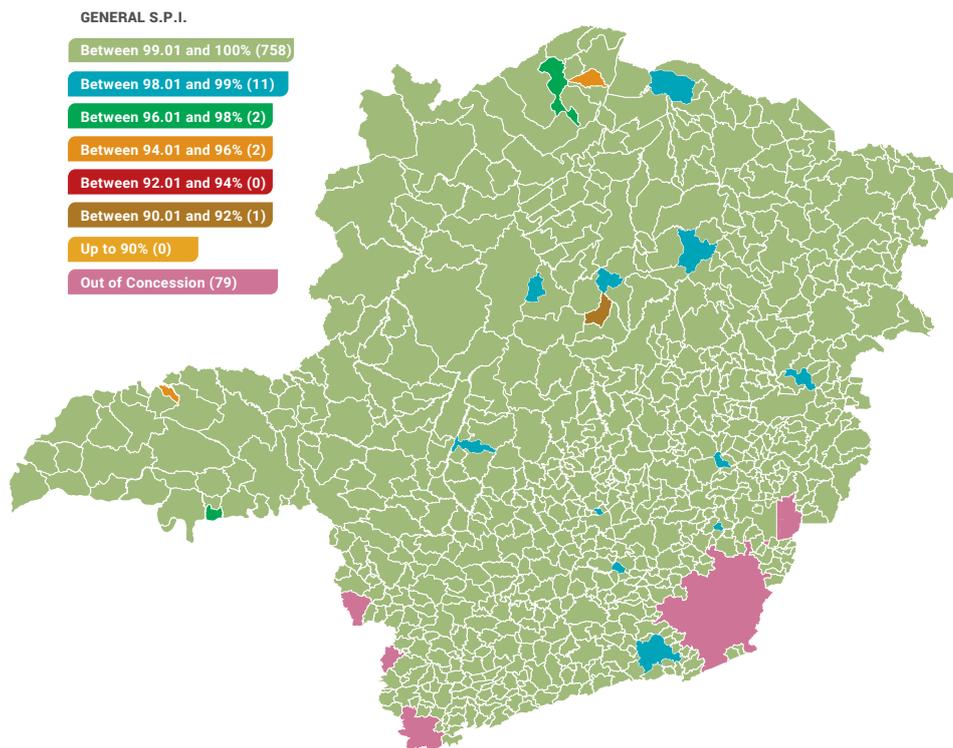


Figure 18: Service Provision Index

Cemig also operates with the social tariff, a discount on the electricity bill for low-income families. In 2019, an average of 586 thousand Cemig consumers received monthly tariff benefits from the social tariff, totaling R\$ 171.3 million in the year.

To receive the discount on the electricity tariff, consumers must comply with legal provisions. That is, those residential consumer units that are occupied by families enrolled in the Single Registry for Social Programs of the Federal Government - Cadastro Unico, or who receive the Continued Social Care Provision Benefit - BPC, pursuant Articles 20 and 21 of Law No. 8,742 from December 1993.

In such cases, the discount will only apply up to a consumption of 220 kWh. Above that consumption rate, there will be no discount. The benefit results in a cumulative discount on the tariff applicable to the residential class

according to consumption range: 65% from 0-30 kWh, 40% from 31-100 kWh, 10% from 101-220 kWh and 0% above 220 kWh. Indigenous and Quilombola families have a 100% discount up to a consumption limit of 50 kWh/month.

The risks related to this program come from delays in the transfer of these funds and the consequent impact on the distributor utility's cash flow. The loss of revenue from the distributor utilities due to the subsidy granted to low-income residential consumers, as well as to other subsidies, is monthly covered by an investment of funds from the Energy Development Account - CDE.

## RURAL REGISTRATION RENEWAL

Aneel's Normative Resolution No. 800/2017<sup>118</sup> regulates the maintenance of tariff subsidies granted to rural producers throughout Brazil, requiring them to renew their registration at all power distributor utilities. According to Aneel, the objective of the resolution is to grant the subsidy only to those customers who are actually entitled to it - those having a right to discounts in tariffs for irrigation and aquaculture, from 9 pm to 6 am.

118 - For more information, go to: <http://www2.Aneel.gov.br/cedoc/ren2017800.pdf>

That Resolution determines that, at the first registration renewal (from 2019 to 2021), a registration review should be carried out. In it, the consumer units that claim the benefit should present documentation proving their situation, in keeping with regulation requirements. However, the Brazilian Association of Electricity Distributors (Abradee) reported consumers finding difficulty in obtaining the several documents necessary to prove rural activity, thus compromising the deadline laid down by Aneel.

As a result, the Agency decided to comply with the Association's request to reassess the conditions for compliance with Normative Resolution No. 800 from 2017. Thus, in early 2020, the registration for maintaining the tariff subsidies granted was suspended throughout the country. After that

decision, Aneel opened a public inquiry process lasting 60 days, from January 16, 2020, to March 16, 2020, to receive contributions from society and then set a new deadline for registration renewal.

Anel also determined that customers who have already lost the benefit must have their tariff subsidy renewed in their next power bills. However, those who received a technical visit from the distributor utility that proved that the property does not meet the legal criteria provided for will not have the subsidy reinstated. Cemig reaffirms its commitment to rural producers.

## 8.3

# CORPORATE CITIZENSHIP AND SOCIAL INVESTMENTS



**[103-2-203]** In line with its Vision, Mission, and Values, Cemig seeks to create shared value by aligning its philanthropic and corporate citizenship strategies with its business objectives, to foster the economic and social development of the communities it operates in.

As it is part of an emerging market, the Corporate Citizenship and Philanthropy strategy defined by Cemig has the following priorities:

- Social and educational development;
- Boosting of the cultural sector; and
- Increasing the sports sector, strengthening the Company's brand and image in the market and society.

In order to realize that strategy, it works in partnership with the Government (Health Secretariat, Secretariat for Education, Secretariat for Sports, Secretariat for Culture, Ministry of Sports, and Ministry of Health), with municipalities (Municipal Councils for the Rights of Children and Adolescents), and with philanthropic institutions. Cemig also disseminates initiatives to contribute to the sustainable development of its employees and customers through projects and actions that will be detailed throughout this chapter.

The Company has a Sponsorship Policy, which aims at contributing to boosting sectors such as culture, sports, education, and social, always in line with public policies in force in the respective communities. That policy reiterates Cemig's commitment to the transparency of its management, making public the assumptions, foundations, and origin of the funds, both in defining sponsorships, supports, partnerships, and in the use of incentive laws.

Cemig also has an internal Service Instruction (IS58 - Preparation and Management of Corporate Social Responsibility Projects) that determines the responsibilities of all the players involved and defines impact indicators to ensure efficiency in the management of social projects.

**[203-1]** Cemig promotes and carries out several programs to foster social and educational development. Some of those programs are linked to indirect economic impacts, which are investments in infrastructure and service offerings, which have positive impacts on communities and local economies.

**[201-1]** Community investments are also an important means of exercising corporate citizenship. This category includes contributions to community institutions, NGOs and research institutes, funds to support community infrastructure - such as recreational facilities - and direct costs of social programs, including artistic and educational events. Among those, some Cemig programs that stand out are detailed in the table below:

Cemig Social Programs					
Program Name	Players	Beneficiaries	Major Objectives	2019 Results	Note
Donation Granting Program	Philanthropic institutions that foster social and health care.	To participate in the Program, entities must present a Clearance Certificate issued by the Minas Gerais State Secretariat for Development - SEDESE.	Grant deductions of up to 25% in power bills to the registered institutions.	947 entities benefited, totaling R\$ 6.2 million in deductions from power bills of the entities that receive the benefit.	This benefit is calculated using the average power consumption (kWh) and/or demand (kW) determined in the 12 months before the date the benefit is granted.
Sponsoring Program	Any Cemig customer can become a sponsor. The sponsors who enroll in the Program can choose the registered institutions they wish to benefit and the amount to be collected in their power bills.	Institutions for assistance to children	Gather donations for philanthropic institutions from third parties (sponsors) via power bills; the amount of donations is then transferred in full via bank deposits.	239 institutions received approximately R\$ 66 million from those donations.	The institutions receive the donations securely by using Cemig's infrastructure and capillarity, without the cost of issuing, paying and receiving invoices and/or payment slips.
Corporate Volunteer Program- VOCE	The Corporate Volunteering Policy is the guiding instrument for Cemig's workforce to carry out the practice of voluntary service. The specific Service Instruction lays down the execution rules and guidelines to be followed by VOCE participants.	Projects that benefit public school students and women at social risk.	Encourage and disseminate solidarity and voluntary work of the workforce, in order to foster human development and contribute to the well-being of the communities it operates in.	5,041 work hours from Cemig employees were granted to the planning and structuring of the Program, together with site visits and attendance to training sessions, courses and congresses. Besides that, Cemig's volunteers donated 2,5318 hours of their time and destined R\$ 5.8 million to 181 entities that support children and adolescents from 95 municipalities in the Company's coverage area	Corporate volunteering is acknowledged in the corporate world as an important tool for improving organizational climate and skills development, in addition to contributing to society, and the image and reputation of companies

V Day	Workforce and retirees from the companies of the Cemig group and their family members), as well as professional partners (companies, institutions and healthcare professionals)	A community previously selected by the coordinating team. In 2019, the Cemig Group V Day coordinating team analyzed the needs and work carried out at various institutions and selected Instituto BH Futuro, which works on behalf of the poor communities of Aglomerado da Serra.	Stimulate the practice of volunteer work among the workforce[1]	Engagement of 1,000 residents of poor communities in Aglomerado da Serra in a diversified program that included, for example, medical care, cultural shows, legal guidance workshops, registration of social energy tariffs, and other actions.	National Volunteer Day seeks to acknowledge and highlight the work of people who donate time and materials to communities
Cemig Volunteer Program - VOCE, The Cemig Energy Efficiency - Program, and Junior Achievement Minas Gerais - JAMG	The Corporate Volunteering Policy is the instrument that guides the volunteer service and the specific Service Instruction lays down the execution rules and guidelines to be followed by VOCE participants.	Public that received care from Junior Achievement students from public schools	Have a positive impact on communities surrounding Cemig's operations, mainly through training and sharing of experiences.	Opportunity to develop personal and professional skills for 1,054 young students and women in socially vulnerable situations (partnership between Você, EE, and JAMG).	Students from Econudos Mini-business, financed by Cemig, represented Brazil in COY, an event that selects the 20 best mini-businesses in the Americas.
AI6% Program - Educating Citizens.	Cemig's Workforce. AI6% is the result of a partnership between Cemig's Intermanagerial Association - AIC, and VOCE.	Institutions that work with children and teenagers in personal or social risk situations.	Encouraging employees to pass on up to 6% of their income tax due to support the social projects from the approved institutions to raise money for the Childhood and Adolescence Funds - FIA. Cemig also allocates part of its income tax due to the participating Municipal Councils for Children and Adolescents - CMDCA's.	Allocation of funds to 95 municipalities to support projects from 181 charities. The amount allocated by employees was R\$ 1,156,462.00 and that allocated by Cemig was R\$ 4,615,500.00 to provide care for about 27 thousand children and adolescents.	Since the inception of the AI6% Program, over R\$ 25 million have been allocated to projects of participating entities, benefiting thousands of children and adolescents. Total after taxes: R\$ 10,511,395.00 (amount allocated with part of the 1% of Cemig's IRPJ and related companies - Três Marias, Sá Carvalho, and Salto Grande).

Table 40: Detailed examples of social programs

119 - The Cemig Group, under the general coordination of Cemig Saúde, together with Cemig Intergenerational Association - AIC and Cemig Employees' Recreational and Cultural Association - Gremig, have carried out this action since 2001.

It is also worth mentioning Cemig's participation in associations that promote volunteer work, such as:

- Brazilian Business Volunteer Council - CBVE: a network that brings together companies, confederations, institutes, and business foundations, and develops activities for the promotion and development of corporate volunteering. CBVE aims to be a network for the promotion and development of corporate volunteering, both in Brazil and abroad, providing a space for collective construction and dialogue for its members.

- Minas Gerais Committee of Corporate Volunteering - CMVC: an organization that came out of the interest of several companies in creating a space for sharing experiences focused on volunteering among business corporations. The challenge for member companies is to disseminate and improve the culture of corporate volunteering and corporate social responsibility, and to help these practices become a tool for local and human development, in line with the strategies of each organization.

Below are detailed the actions geared at boosting corporate citizenship in 2019:

## TAQUARIL PROGRAM

Cemig developed the Taquaril Environmental Program, an action that promotes visits to the Taquaril Substation (SE) and its environmental reserve, located in the town of Nova Lima, starting as a volunteer work effort by the team of that facility in April 2001<sup>120</sup>; it was put together with the support of teachers and principals of public schools in the Sabará region. Due to the increase in requests from several schools to participate in the project, that team sought partnership with other areas of Cemig to meet the growth in demand. By 2019,

**120** - In the period from 2014 to 2016, SE Taquaril was under construction, which did not allow the project to be carried out at that time.

with the support of other areas and service providers, the project reaches students from public schools in the Metropolitan Region of Belo Horizonte that are in the area of influence of the substation activities and its power lines.

The main objective of this Program in the 2019 cycle was to maintain the reduced profile of the number of shutdowns of transmission lines caused by fires in the facilities that make up the substation. Specific objectives were laid down to achieve that, namely:

- Foster awareness-raising in elementary school children about the prevention of fires close to the power grid, conscious consumption and safe use of electricity, and the preservation of the environment;
- Make the topics of the program part of the daily lives of students and teachers, who can then be trainers' trainers of these topics in the community;
- Improve the relationship level between Cemig and its stakeholders;
- Develop the feeling of citizenship in students and the community in the Taquaril substation region;
- Encourage children to study;
- Make the community aware of the risks and consequences of vegetation cleaning fires for both the power supply and the environment, the importance of preserving the environment, and the safe and rational use of electricity.

## CAMPOS DE LUZ PROGRAM

The program started in 2005 with a grand total of approximately 900 amateur sports fields. In 2019, multi-purpose sports courts were included in the project. There are 306 amateur football fields and 50 multi-purpose sports courts that will get electric lighting, aiming at improving the quality of life and social inclusion of destitute communities through the practice of sports, leisure and cultural activities, especially at night.

To participate in the Program, the City Hall must not be in default with Cemig and take responsibility for the management of the multi-purpose sports field/court, including security, maintenance of facilities, and payment of electricity bills. The fields/courts where lighting is installed must belong to the municipalities and must be within Cemig's concession area.

The investment made in 2019 amounted to R\$ 15 million, and was used for the drafting of lighting projects, the acquisition of materials, and the execution of the works. Of the 356 fields/courts included in the project to be lighted, 227 fields and 42 courts were completed. R\$ 1.8 million was invested in 2019.

## SOCIAL INVESTMENTS

**[201-1]** The Company is an entity that provides relevant resources for culture in the state of Minas Gerais; it has also invested in areas such as sports, health, education, and citizenship, always taking into account interests usually common to its 8 million customers from 774 municipalities served by the company in Minas Gerais.

The priority of initiatives to encourage social projects, whether by allocating social investments or by sponsoring projects, is to contribute to social transformation, with a focus on training children and young people in multiple municipalities.

In the current context in which the observed trend is the reduction of public funding for the cultural sector, Cemig is moving in the opposite direction, consolidating itself as the biggest sponsor of culture in Minas Gerais and associating its brand with big names such as Fundação Clóvis Salgado, Instituto Inhotim, Minas Gerais Philharmonic Orchestra and the groups Galpão e Corpo, Palco Hip Hop, Fundação de Educação Artística, Sempre um Papo, and others, by allocating funds via federal and state incentive laws.

In 2019, there was a 135% increase in social investments, when compared to 2018. Part of them has already been contributed, and there are also actions in progress or due to start throughout 2020.

Finally, there are projects whose sponsorship has been approved and that are in the process of being initiated. The details of the values for social investment and sponsorships are given in the table below:

Investment area	2017	2018	2019
Culture	R\$ 34,128,000	R\$ 17,295,738	R\$ 31,777,516
Education	R\$ 2,150,000	R\$ 10,472,871	R\$ 4,434,979
Sports	R\$ 3,313,000	R\$ 4,034,974	R\$ 4,982,240
Social Actions	R\$ 87,759,000	R\$ 26,661,705	R\$ 98,443,173
Healthcare	R\$837	R\$ 1,838,093	R\$ 2,049,320
<b>Total</b>	<b>R\$ 128,277,000</b>	<b>R\$ 60,303,383</b>	<b>R\$ 141,687,230</b>

Table 42: Cemig Social Investments

The funds used to carry out actions, investments and sponsorships can come from different sources, depending on the pathway used for financial contribution to the projects. The chart below gives the sources of funding and the proportion of amounts contributed to in 2019.

### Origin of the Sponsorship Funds

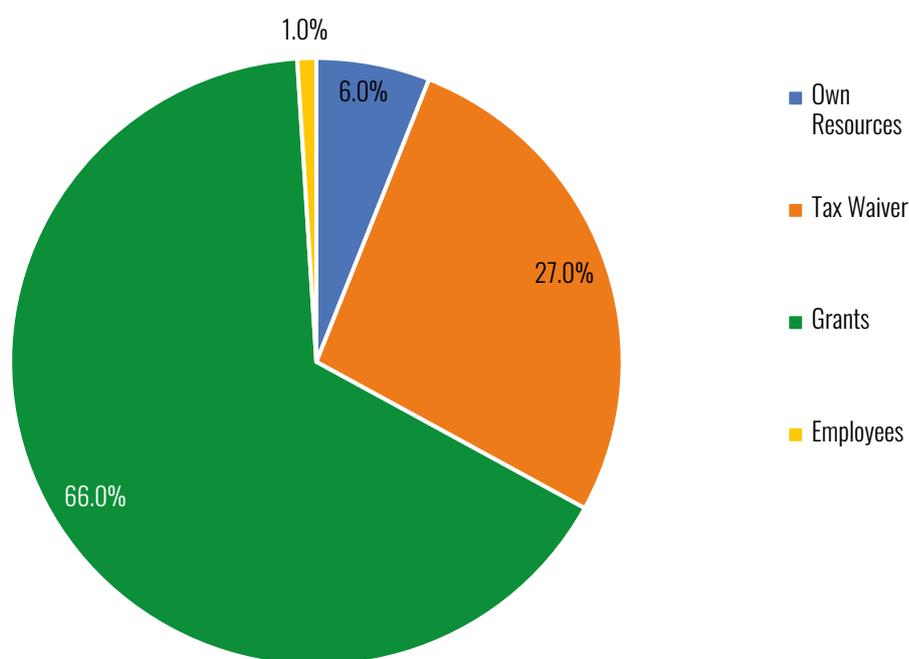


Chart 16: Origin of Funds Invested in Sponsorships

# ENERGY EFFICIENCY PROGRAM

Since the 1980s, Cemig has systematically invested in projects and actions to foster the correct use of electric energy, disseminating the culture of energy efficiency, and thus postponing some investments (for example, on new works). This also avoids impacts on the environment.

All areas of society are covered annually by Cemig's actions. Low-income families, hospitals, non-profit organizations, rural residents, educational institutions, and public agencies account for an accumulated amount of over R\$ 500 million in investments.

Cemig D's Energy Efficiency Program - PEE, run annually by the Company in compliance with sectoral legislation, enables the allocation of at least 0.54% of the Company's net operating revenue to projects carried out at consumer facilities, with the objective of increasing energy efficiency in the end-use of electricity.

The Program provides for efforts with society in different ways, seeking to make the power grid users aware of the safe and responsible use of electricity, through educational actions such as lectures and training

The screening process for Program projects is held via annual public calls for tenders. These include technical specifications to help select energy-efficiency projects in the end-use of electricity for consumer units belonging to Cemig

D's concession area. The use of public calls is a way to democratize resources that are destined to several kinds of institutions and regions in Minas Gerais.

In late 2019, PEE comprised ongoing 44 initiatives (a figure that includes public call projects and those developed directly by Cemig). In 2019, the program invested R\$ 86 million in projects throughout the whole Cemig D concession area. In that year, the Company's Board of Directors also approved a total budget of R\$ 457 million for the 2020-2024 cycle to be solely invested in energy efficiency actions.

The program's actions always aim at energy efficiency associated with social responsibility, innovation, and creation of opportunities for Cemig D's business, with an emphasis on efforts geared to hospitals, schools, low-income communities, and public lighting.

In addition to lighting, which is a recurring and necessary demand to reduce energy waste, customers have been presenting projects for the upgrading of air conditioners, water heating, electric motors, and the deployment of a photovoltaic system.

The actions in the Energy Efficiency Program (PEE) reach different target audiences, namely:

- Apacs (Associations for the Protection and Assistance of Convicts);
- Public schools;
- Low-income families, both in country towns and in the RMBH (Belo Horizonte Metropolitan Region);
- Standalone water and sewage service companies;
- Minas Tênis Clube;
- Palácio da Liberdade;
- Homes in the RMBH.

In addition to other actions that affect the whole of society in a widespread manner, such as increasing the efficiency of the Belo Horizonte Bus Station and projects selected by public calls for tenders.

In total, in 2019, over 47 thousand units of target audiences were benefited, generating a total energy savings of more than 126 thousand MWh/year. The actions included, for example: **(i)** the replacement of current street lighting for one using more energy-efficient alternatives; **(ii)** an energy efficiency proposal using photovoltaic technology and innovation in heating by the use of solar energy; **(iii)** innovation to make sanitation services more energy-efficient.

This set of energy-efficiency-focused actions resulted in a decrease in emissions of over 11 thousand tons of CO<sub>2</sub> in 2019. Currently, the following projects in the Energy Efficiency Program are in force/ongoing:

**Table 43:** Achievements of the Energy Efficiency Program in 2019

Action	Target Public	Amount Completed (Consumers)	Investment in 2019 (R\$)	Energy Savings (MWh/year)	Demand Decrease (kW)	CO <sub>2</sub> avoided (tons)
Management Plan	-	-	339,217.26	-	-	-
Enhancement of APACs (Lighting)	Associations for the Protection and Assistance of Convicts	37	495,584.13	314.13	108.78	28
Enhancement of Schools (Lighting and Photovoltaic)	Schools in the public network	370	10,459,348.46	96,388.87	736.89	8,579
Educational	Schools in the public network	46	4,020,922.26	-	-	-
Enhancement of low-income communities (lamp bulbs, refrigerators, SAS>Showers, Visits)	Countryside Low-Income Families	1,310	9,376,848.17	707.56	270.19	63
Enhancement of low-income communities (lamp bulbs, refrigerators, Showers, Visits)	Quilombola and Native Low-Income Families and families harmed by dams	3,022	1,658,508.64	254.81	130.55	23
Enhancement of low-income communities (lamp bulbs, refrigerators, Showers, Visits)	RMBH Low-Income Families	42,264	10,802,975.63	6,766.51	2,380.19	602

Enhancement of Hospitals (Autoclaves, Lighting, Surgery Lights, Driers and Photovoltaic)	Public and philanthropic hospitals	147	25,159,327.96	10,046.56	4,060.21	894
Enhancement of Minas Tênis Clube II	Minas Tênis Clube	1	39,149.55	-	-	-
Enhancement of Palçcio da Liberdade	Palçcio da Liberdade	1	45,389.97	58.90	17.62	5
Solar Heating Innovation	Homes in the RMBH	140	255,761.73	1,226.40	756	109
Sanitation Innovation	Standalone Water and Sewage Service	3	2,758,400.19	1,424.49	115.41	127
Financing of projects selected by Call for Proposals	The whole of society	18	16,468,159.95	6,139.75	1,922.96	546
Enhancement of the Belo Horizonte Bus Central Station	The whole of society	1	3,749,934.19	2,947.74	338.25	262
<b>TOTAL</b>		<b>47,360</b>	<b>85,652,471.90</b>	<b>126,275</b>	<b>10,837</b>	<b>11,239</b>

Given Cemig's expertise in the subject of energy efficiency, the Company has participated in committees and groups, such as the Municipal Committee on Climate Change and Eco-Efficiency (CMMCE) - Belo Horizonte, the State Management Committee for the "Production of sustainable, renewable biomass-based charcoal for the iron and steel industry in Brazil" Project coordinated by MMA/MDIC/MCTI with resources from the Global Environment Facility (GEF)<sup>121</sup>.

122 - For more information, go to: [http://www.Cemig.com.br/pt-br/A\\_Cemig\\_e\\_o\\_Futuro/inovacao/Paginas/default.aspx](http://www.Cemig.com.br/pt-br/A_Cemig_e_o_Futuro/inovacao/Paginas/default.aspx)

# ENVIRONMENTAL PERFORMANCE

[103-2:307; 103-2:303; 103-2:304; 103-3:304; 103-2:305; 103-3:305; 103-2:302; 103-3:302] Cemig acknowledges its responsibility towards the environment and is committed to adopting and disseminating good environmental management practices. It has an Environmental Policy that, since it was put in place, has contributed to the formalization of the integration of environmental issues in Cemig's decision-making process, and in all its projects, processes and activities related to the expansion, deployment, operation and maintenance of assets, and the execution of services and partnerships.

Cemig's Environmental Policy determines respect for the environment as a value that must be practiced by all employees and other stakeholders acting on its behalf, including its suppliers. It has 6 principles: (i) strategy, (ii) management, (iii) compliance with legal requirements, (iv) pollution prevention, (v) commitment to continuous improvement, and (vi) communication and environmental education. These principles guide Cemig's management processes and routines.

Via its environmental strategy, Cemig aims to reconcile: (i) business development, (ii) preservation of biodiversity, (iii) the rational use

of natural resources, and (iv) compliance with environmental legislation to its Corporate Mission, Vision and Strategic Planning.

In formulating this strategy, current and future risks and opportunities, challenges, medium and long-term scenarios, and expectations of the stakeholders Cemig relates to are considered. This entire process is guided by the Environmental, Biodiversity and Water Resources Policy, the Commitment to Climate Change, and internal procedures.

These documents were prepared to show the alignment of the Company's planning and strategic management to sustainable development. Through this effort, Cemig is contributing to the creation of shared value in the regions where it operates, in addition to supporting the fulfillment of the UN Sustainable Development Goals.

The Environmental Adequacy Program is a multiannual and transversal program across Cemig. It is the instrument that details the corporate strategy at the tactical level and where the strategic drivers are established. Using a prioritization matrix, the strategy is operationalized based on the definition of programs and initiatives with their respective responsibilities, actions, goals, objectives, indicators, and allocation of funds. And they include topics such as Biodiversity, Water, Waste, and Climate Change. The goals related to these and other topics are listed in the Strategy chapter of this Report.

This way, the prioritization matrix is defined to cover general environmental aspects such as biodiversity, water, waste, and climate change. So,

by the time the prioritization matrix is prepared, the programs and work initiatives are defined.

The engagement of Cemig's several stakeholders is considered essential - through networks of action and the building of partnerships - for the preparation and execution of all programs.

The Company continuously invests in R&D and new technologies that aim at mitigating the impacts and reduce the environmental risks of its operations. The results of those efforts are shown throughout the items in this chapter. The figure below presents the environmental strategy and its tactical and operational development.

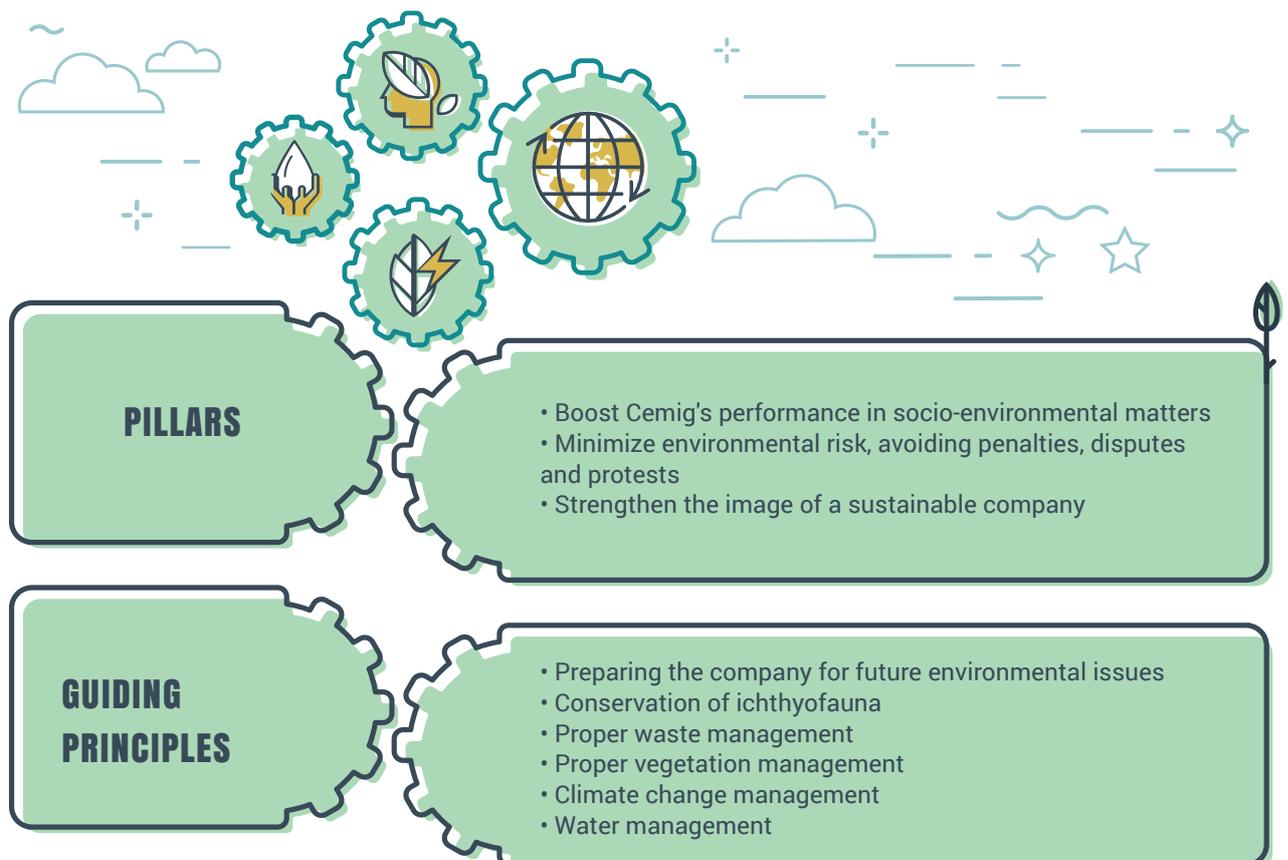




Figure 43: Cemig's Environmental Strategy

## 9.1 ENVIRONMENTAL MANAGEMENT



[103-2:301; 103-3:301; 103-3:304; 103-2:307; 103-3:307] The scope of Cemig's environmental management includes all its operational and support processes, from planning, construction, and operation, to the decommissioning of projects. The way the Management Systems is put together ensures that the premises are considered and applied by the whole of Cemig's workforce.

The Environmental Management System - SGA allows for the adoption of best practices to minimize environmental risks and optimize operating costs. According to this rationale, SGA aims at minimizing possible environmental impacts, reduce occurrences, prepare employees appropriately to respond to emergencies, and also achieve greater assertiveness in the execution of the environmental strategy and the commitments taken on before the competent bodies.

Among the environmental risks identified, there are risks related to legal compliance. Monitoring of compliance using these requirements is carried out by PROSIG, a computerized tool that maintains a legislation database and makes it available to the company areas.

This tool is controlled by a specialized contractor, and periodically analyzes the legal requirements to identify the obligations that need to be fulfilled. After this identification, the areas analyze the requirements, verifying their applicability, including evidence of their fulfillment, and propose the appropriate measures in an action plan or their objectives and goals.

At least once every 24 months, the areas must carry out the verification of compliance with all legal and other applicable requirements; in case of non-compliance with any requirement, a Non-Conformity Record must be opened, where the non-conformity must be treated and registered.

By the adoption of the NBR ISO 14001: 2015 standard or an Internal Management System called SGA Level 1 - developed based on the principles of the NBR ISO 14001: 2015 standard - the areas start to conduct their activities in a controlled manner, with a focus on compliance with legal requirements applicable to environmental management. To ensure control, both Systems are verified by internal audits carried out by priority teams and external audits. The latter are conducted by an external and independent certifying body accredited by Inmetro's General Coordination for Accreditation (Cgcre)<sup>122</sup>.

**122** - Inmetro's General Coordination for Accreditation (Cgcre) is the accreditation body for conformity assessment agencies recognized by the Brazilian Government. Cgcre is, therefore, part of Inmetro's organizational structure, the major organizational body that has full responsibility and authority over all aspects related to accreditation, including accreditation decisions.

With the transition of environmental certifications to the new version of the ISO 14001 standard, the coverage and orientation of environmental scopes were reviewed based on the requirements of the new version.

They include the possibility of (i) a better understanding of the needs and expectations of stakeholders, (ii) a broader understanding of the context in which the processes operate, (iii) a greater alignment of environmental projects with the organizational strategy, and the risk management of processes.

This way, it is possible to have an integrated view of the life cycle of services developed by Cemig, and understand the environmental impacts of projects from the beginning to the end of their value chain.

The normative requirements are applied and met by Cemig pursuant to the provisions in its Quality Manual. This manual is published by the corporation as an organizational instruction detailing the most relevant topics for the systems. It guides the fulfillment of the requirements demanded by the standards through Cemig's practices.

Complementarily, online trainings are held to present the content of the Quality Manual clearly and objectively, and to train all employees to meet the normative requirements of NBR ISO 9001: 2015, NBR ISO 14001: 2015 and OHSAS 18001: 2007,

thus increasing everyone's engagement with the organization's Management Systems and certified processes. <sup>123, 124</sup>.

**123** - Only those areas that have an environmental license can have their Environmental Management System certified in NBR ISO 14001. So, as many facilities were built before the environmental legislation was enacted, they are currently undergoing a corrective licensing process with the environmental agencies. These facilities had good Environmental Management practices, but were prevented from obtaining the certification. Thus, Cemig developed SGA Level 1 as a step towards certification in ISO 14001. In fact, over time, after their first external audit, the facilities that obtained the environmental operating license managed to be recommended for certification in ISO 14001, thus showing the rigor of SGA Level 1 practices.

**124** - Inmetro's General Coordination for Accreditation (Cgcre) is the accreditation body for conformity assessment agencies recognized by the Brazilian Government. Cgcre is, therefore, part of Inmetro's organizational structure, the major organizational body that has full responsibility and authority over all aspects related to accreditation, including accreditation decisions.

Cemig has a Conditioner Compliance Index - ICC, which monitors compliance with environmental conditions on an annual basis, without prejudice to deadlines and definitions imposed by the environmental agencies, thus seeking to ensure the environmental compliance of Cemig GT and Cemig D projects.

In the 4th quarter of 2019, Cemig GT's Conditioner Compliance Index - ICC achieved 99.4%, against the 100% target. Concerning Cemig D, the same index reached a 47% performance, against the 100% goal. Among the justifications for this

result, we can stress the delay in the tree planting schedule due to weather conditions, and a lack of authorizations and feedback on project changes by environmental agencies.

Another management tool involves the determination of the Environmental Licensing Index for the Generation and Transmission Installation Operation - ILOI, intended to show the percentage of generation and transmission facilities in operation with an environmental license in force. It is calculated every six months and its goal grows annually, and is targeted to reach 100% in the coming years.

In addition to these indices, external audits on Legal Compliance and SGA are carried out. These aim at (i) assessing the Company's performance concerning the principles laid down in the Environmental Policy; (ii) complying with current environmental legislation; and (iii) controlling the environmental impacts of company activities.

## ENVIRONMENTAL GUIDELINES AND CONTROLS - MEASURES TO REDUCE THE IMPACTS OF TRANSMISSION AND DISTRIBUTION NETWORKS

**[304-2]** Cemig has developed an internal procedure with Environmental Guidelines and Controls that determines the care and methods to be adopted when lines and grids are being built. The Company changes the layout of existing networks to avoid interference in areas of high tree density, or even renovates electrical circuits in these areas, adopting superior technological standards.

When designing networks or distribution lines for rural areas, layout engineering favors those layouts that interfere as little as possible in forest patches. They also put taller structures in place to minimize the removal of vegetation when deploying distribution lines.

Plans for lines, networks and substations that compromise the tourism, cultural or speleological heritage, must include measures to eliminate their impacts, such as alternative layouts, underground or isolated grids, taller structures, among others. If it is not possible to adopt these measures, other measures should be employed to minimize impacts as much as possible. Regarding impacts on the fauna, there are specific precautions for removing bird nests from distribution grids and substations and other measures to prevent birds and small animals from approaching the equipment.

## FUNDS INVESTED

In 2019, Cemig invested a total of R\$ 55.2 million in environmental guidelines. Environmental investments were broken down into capital investments, expenses, and R&D projects, as shown in the table below.

Resources invested in guidelines for the environment (R\$)	2017	2018	2019
Capital investment	R\$ 4,048,000.00	R\$ 13,351,000.00	R\$ 7,446,000.00
Expenses	R\$ 32,268,421.00	R\$ 30,228,938.00	R\$ 25,300,077.00
R&D	R\$ 1,138,257.00	R\$ 3,886,744.00	R\$ 22,468,134.51
<b>Total</b>	<b>R\$ 37,454,678.00</b>	<b>R\$ 47,466,682.00</b>	<b>R\$ 55,214,211.51</b>

**Table 44:** History of the total funds invested in guidelines for the environment by

The amount of R&D increased significantly compared to 2018, for the following reasons: many R&D projects were signed at the end of 2018; and there is a more significant expenditure in the 1st year of R&D projects, due to the acquisition of equipment and supplies needed to start the research.

## ENVIRONMENTAL COMPLIANCE

**[103-3:307]** In addition to being a legal obligation, the environmental licensing of Cemig's activities<sup>125</sup> aims at ensuring that expansion and operation take place in compliance with environmental criteria and in line with the Company's Environmental Policy, supporting the prevention of impacts and guiding its environmental management.

**125** - Cemig D grouped up environmental licensing of projects deployed before 2007 by region, dividing the system into 7 regional networks: Central, East, West, North, South, Mantiqueira and Triângulo. With the entry into effect of Normative Deliberation No. 217/17 from the government of Minas Gerais, which excluded projects subject to licensing from the substation code and changed the concept of transmission lines, Cemig D's undertakings are no longer subject to licensing; therefore, as of 2019, they all are now in compliance with environmental legislation.

81% of projects from Cemig GT and its wholly-owned subsidiaries are duly licensed, and 19% are in the process of obtaining the respective environmental licenses<sup>126</sup>. All processes are monitored for compliance with deadlines, which guides the submission of license renewal requests, whose deadlines are prescribed by law.

**126** - Most of Cemig GT's projects were implemented before the environmental licensing was mandatory and fall into the corrective licensing category, with the exception of wind and photovoltaic plants, which were implemented after 2007, the year the licensing became effective.

The risk to Cemig's business related to environmental licensing processes is relevant, since non-conformities (whether with deadlines, obtaining licenses or implementing conditions) can cause impacts on reputation and results. These risks are detailed and discussed in Cemig's Reference Form and Form 20-F.<sup>127</sup>

**128** - Available at: <http://ri.Cemig.com.br/governanca-corporativa/formulario-de-referencia>

Legal Compliance audits are held every 2 years, and in them only 1 management department of Cemig Geração is assessed. The goal of this assessment is to verify compliance with all environmental legislation within the scope of the SGA. Within 10 years, 100% of Cemig Geração's facilities will have been audited.

The results presented in RAS 2019 refer to the facilities located in the Triângulo Mineiro<sup>128</sup> that are certified in NBR ISO 14001: 2015.

**129** - In 2019, considering the 245 applicable requirements in force, 145 federal laws, 76 Minas Gerais State laws, 10 Goiás State laws, 10 UHEM Municipal laws and 4 UHNP Municipal laws were complied with.

At Cemig Transmissão, compliance audits are held every 2 years, and all facilities that are certified under NBR ISO 14001: 2015 are evaluated. In 2019, 1 non-compliance was identified and corrective measures were put in place.

**[307-1]** In 2019, Cemig did not get any significant notifications for environmental fines and violations<sup>129</sup>. However, there was the payment of an environmental bond for 2014. That is an Agreement Document to compensate for environmental damage caused by a fire in Lapa Grande State Park in October 2014.

**129** - Environmental fines and violations are considered significant when the penalty amount is greater than US\$ 10,000. Definition suggested by the Dow Jones Sustainability Index.

## 9.2

# RESOURCE MANAGEMENT



Cemig contributes to the conservation of environmental resources via the proper environmental management in its operations, given that it has a significant consumption of inputs and materials, with consequent generation of waste. The type and amount of materials used and their disposal after and/or at the end of their life can cause significant impacts.

The environmental management approach defined and implemented by Cemig moves in tandem with its environmental commitments, and with sustainable development.

## ENERGY CONSUMPTION

**[302-1]** In carrying out its operations, Cemig consumes energy in the form of fuel and electricity. The 2019 data for energy consumption in the organization are detailed in the table below<sup>131</sup>.

**131** - Although conservatively ranked as non-renewable fuels, "Gasoline - Brazil" and "Diesel - Brazil" contain added renewable fuels (i.e. ethanol and biodiesel, respectively). Electricity consumption is also conservatively characterized as non-renewable due to the impossibility of ascertaining the effective participation of renewable sources in the National Interconnected System.

Power consumption in the organization		
Forerunner	Consumption	
Non-renewable fuel	(MWh)	(GJ)
Diesel - Brazil	31,126.60	112,055.78
Gasoline - Brazil	6,215.94	22,377.37
Liquid Petroleum Gas (GLP)	3.42	12.30
Natural Gas	61.71	222.16
Natural Vehicle Gas (NVG)	378.04	1,360.94
Jet Fuel	1,576.20	5,674.32
Fuel oil	133,108.01	479,188.82
Renewable fuel	(MWh)	(GJ)
Hydrous ethanol	2,371.76	8,538.35
Total fuel consumption	174,841.68	629,430.04
Power Consumption	41,879.58	150,766.49
Total energy consumption	216,721.26	780,196.53

Table 14: Power consumption in the organization

[302-4] For comparison purposes, Cemig's consumption history is presented grouped up in the 3 major kinds of fuel: electric energy, fuel for the vehicle fleet, emergency generators, machinery and equipment, and fuel for generation at the thermoelectric plant.

Total energy consumption - History				
Consumption per source (GJ)	2017	2018	2019	18/19 Variation
Power	157	149	151	1%
Fuels for generators	350	331	505	53%
Fuels for the fleet	155	139	145	4%
Fuels in UTE	450	276	484	75%
Total Energy	762	565	780	38%

Table 15: Total energy consumption by Cemig

**[302-2]** Cemig also accounts for the energy consumption in its value chain, divided into the following GHG Protocol categories: stationary combustion, mobile combustion, acquisition of electric energy, commuting of employees (home-work), movement and distribution (upstream and downstream) and the use of goods and services sold. The 2019 data for energy consumption outside the organization are detailed in the table below.

Power consumption outside the organization		
Forerunner	Consumption	
Non-renewable fuel	(MWh)	(GJ)
Diesel - Brazil	76,312.15	274,723.75
Gasoline - Brazil	23,814.84	85,733.43
Liquid Petroleum Gas	271.70	978.12
Natural Gas	10,746,486.09	38,687,349.94
Natural Vehicle Gas	399,424.55	1,437,928.37
Jet Fuel	1,646.87	5,928.72
Renewable fuel	(MWh)	(GJ)
Hydrous ethanol	9,089.58	32,722.49
Total fuel consumption	11,257,045.78	40,525,364.82
Power consumption	55,169,053.00	198,608,590.80
Total energy consumption	66,426,098.78	239,133,955.62

**Table 16:** Power consumption outside the organization

Energy consumption inside and outside the organization was calculated based on the ranking proposed by the GHG Protocol methodology. The conversion factors adopted are made available by the Brazilian Energy Policy Council - CNPE, the Intergovernmental Panel on Climate Change - IPCC, the Brazilian GHG Protocol Program, and the Brazilian National Energy Balance.

## CONSUMPTION OF MATERIALS AND WASTE PRODUCED

**[103-2:306; 103-3:306; 301-1]** In 2019, a methodology for measuring the consumption of more intensely-used materials and greater operational relevance consumed by Cemig was standardized. These consumed amounts are detailed in the following table, where the methodology was also applied for the years 2017 and 2018, to provide the data with a comparison parameter:

Year	Transformers for Distribution (unit)	Concrete poles (unit)	Cables	Cables	Measurement equipment (unit)	Reclosers (unit)
			(m)	(kg)		
2017	28,752	43,598	7,352,907	2,656,388	462,873	1,697
2018	28,456	40,566	7,122,642	3,795,949	445,52	1,63
2019	23,853	46,807	7,920,312	3,166,670	561,411	3,261

**Table 45:** Consumption of Materials

Responsibility for monitoring and maintaining public lighting has been transferred to city halls. Thus, Cemig no longer manages this area and, therefore, no longer monitors the data related to it.

**[301-2]** Alternative options of recycling for the inputs most used by the Company in the generation, transmission, and distribution of energy still do not exist on the market. Cemig remains attentive to new solutions, looking for alternatives that will bring fully-recycled components or inputs for the products it consumes.

The Solid Waste Management Plans - PGRS for Cemig GT 36 facilities were prepared. However, none of them were approved. This non-approval is because the environmental agency in charge requests, in its licensing process, the delivery of the Plan in order to proceed with the approval.

However, Cemig has no pending issues and the Plans will be delivered as required in the licensing process, with no impact of that non-approval as of late 2019. The major action of the adequacy measures that have not yet been carried out is purchasing scales for weighing waste. They are currently being implemented. The PGR aims at legal compliance and supporting the implementation of the Company's Environmental Policy.

The generating units are responsible for the proper segregation of waste, identification, conditioning, and movement from the generation point to Igarapé Advanced Distribution Center (CDA-IG). In some cases, some companies are outsourced to carry out part of the process<sup>131</sup>. The CDA-IG is responsible for the temporary storage of corporate waste produced at Cemig D and Cemig GT. The management of these processes and final destination is the responsibility of the Material and Service Supply Superintendent Department.

**131** - Since 2014, for example, Empresa de Transportes Apoteose took over Cemig's logistics operation at CDA-IG and at Jatobá Advanced Distribution Center. These suppliers of waste transportation or final destination services must have environmental licenses, permits for handling the waste and Certificates of Regularity of Potentially Polluting Activities with the Federal Technical Registry/IBAMA, and those must be audited from time to time.

The waste management processes are certified by the Environmental Management System - SGA Level 1 and by the ISO: 9001: 2015 standard.

The destination process is monitored and, in 2017, Cemig implemented waste control via SAP-R3 to ensure greater traceability and availability of waste generation and destination data. The final disposal processes adopted by Cemig are shown in the table below.

PROCESS FOR FINAL DISPOSAL OF CEMIG'S WASTE	
Final disposal	Description
Sale	It consists of conducting face-to-face auctions/bids establishing coherent procedures for Cemig's environmental management, in order to send reusable waste to recycling companies.
Landfill	Non-hazardous waste that cannot be recovered/recycled is sent to the Landfill of the Municipality of Juatuba.
Co-processing	A technique for using industrial solid waste from its processing as a partial substitute for raw material or fuel in the clinker production oven during the manufacture of cement.
Incineration	The process of thermal destruction carried out at high temperatures - 900 to 1200 ¼C with controlled residence time - and used for the treatment of highly hazardous waste or waste requiring complete and safe destruction.
Recycling	The transformation process of solid waste involving changing its physical, physical-chemical or biological properties in order to transform them into inputs or new products.

Oil regeneration	An industrial process carried out by Cemig itself to reestablish the physicochemical properties of insulating mineral oil, thus returning it to the process and avoiding its premature disposal.
Reuse	The process for using solid waste without biological, physical or physical-chemical transformation.
Re-refining	An industrial process for removing contaminants, degradation products, and additives, thus imparting to the product obtained via this process the same characteristics as basic lubricating oil. The main stages in the oil recovery process are decantation, neutralization, distillation, clarification, and filtration.

**Table 46:** Process for final disposal of Cemig's waste

**[306-2]** Final disposal of Cemig's waste follows the National Solid Waste Policy - PNRS established by Law No. 12,305/10.

In the period from January to December 2019, 35.16 thousand tons of industrial waste were sent to final disposal: 98.96% of this waste was sold; 0.4% regenerated, reused, or recycled; 0.54% co-processed or incinerated; and 0.09% disposed of in a class II. landfill<sup>132</sup>.

**132** - Landfills that are the destination for waste rated as non-hazardous, according to ABNT NBR 10,004/04.

Against 2018, when 64.3 thousand tons of waste were generated, Cemig reduced its waste disposal considerably. It should be noted that this reduction was mainly due to the non-destination of waste contaminated by PCBs, as there was no significant generation for disposal. This is due to temporary storage, where waste is characterized, segregated, packaged, labeled, and later, disposed of. As in 2019 Cemig closed a five-year cycle of investments in infrastructure maintenance, this explains the increase in the disposal of waste.

The disposed waste consists mainly of cables and wires, scrap from transformers, metal scraps, scrap from meters, poles, crossheads, shavings, and wood waste. There are also used insulating mineral oil, which, when sold, undergoes a re-refining process, and battery scraps, which, when disposed of, are subject to recycling.

The revenue obtained from the sale of these 79.2 thousand tons of waste reached R\$ 14.85 million in 2019<sup>133</sup>, amounting to a decrease of approximately 66.7% against the previous year revenue. This reduction is largely due to the decrease in the production of waste from distribution transformers. In 2018, the sale of distribution

transformers generated R\$ 34.61 million in revenues for a production of 23,032 tons of that waste, whereas in 2019 this revenue was R\$ 4.78 million for a production of 7,853 tons of that waste.

**133** - Considering the materials sold that have been refined and recycled. This breakdown will be included in the charts along the text.

In 2019, the destination of other waste generated expenses of approximately R\$ 164.5 thousand. That other waste added up to 231.7 tons<sup>134</sup>, which amounted to a 26.5% decrease in the money spent on its disposal, when compared to 2018. Despite this decrease in expenses, there was an increase of 35.2% in mass, compared to the previous year. This decreasing difference in value, with an increase in quantity, is because, in 2019, no waste contaminated by PCBs was produced, which in 2018 accounted for 69.5% of the total cost of waste disposal<sup>135, 136</sup>.

**134** - That waste is made up of oil-impregnated residues; lamp bulbs; various oily residues; solvents, paints, cans, measuring seals, and other class I waste; non-recyclable waste (tailings); PPEs, energized line material and other class II waste; septic tank sludge; soot residue from the boiler; glass wool residue; and construction debris. Regenerated insulating mineral oil waste and recyclable waste destined for the cooperative did not generate revenues or expenses for Cemig; therefore, they were not accounted for in the weight value in this specific analysis.

**135** - PCB (Polychlorinated Binefil), known in Brazil as Ascarel, is a substance that was widely used as a fluid in transformers. As it is highly toxic and polluting, today there is a process for reducing its use.

**136** - Electric Sector GRI 301 (EU)..

Cemig follows the provisions of the Stockholm Convention of 2004, where deadlines are set for the removal of electrical equipment contaminated by PCBs (Polychlorinated Biphenyls).

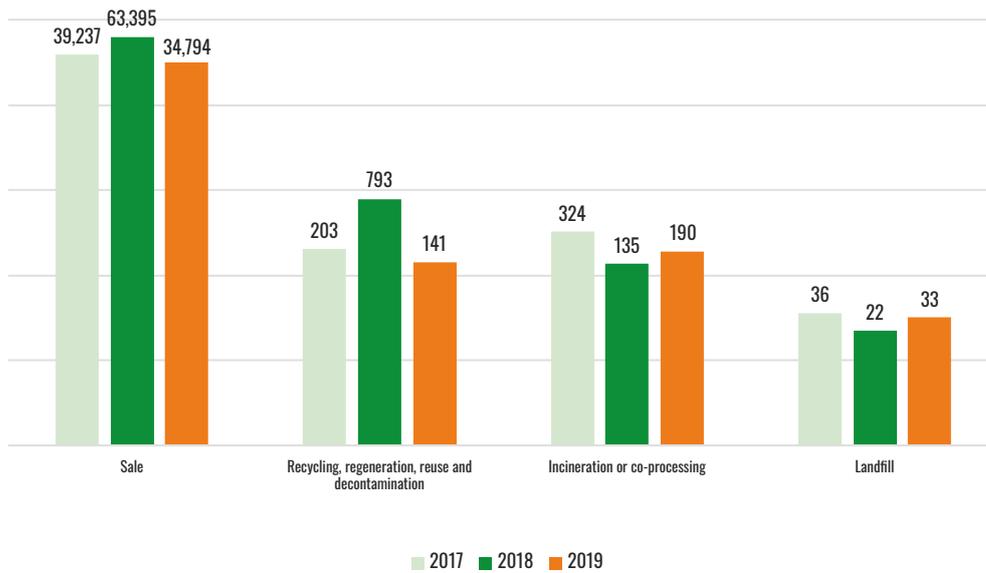
Said Convention requires equipment with residual PCB concentrations above 50 ppm to be removed from operation by 2025 and to be disposed of by 2028.

Cemig analyzed all its high voltage transformers and, today, has only transformer serial number 56.123 installed at SE Arcos contaminated by PCB at a concentration of 186 ppm. The other equipment contaminated by PCB has already been disposed of.

Of the total oily waste disposed of, 767.3 tons of insulating mineral oil were regenerated and re-refined by the Company. This measure provides environmental benefits, such as the non-generation of hazardous waste, in addition to avoiding a cost to Cemig for the acquisition of new oil, not counting the costs for final disposal of the waste. With this practice, Cemig generated R\$ 692,377.60 in revenues.

All waste disposal processes have supporting evidence in certificates for the final disposal of waste.

### Final Disposal of Waste (t)



**Chart 17:** Final disposal of Cemig's industrial waste in tons and by disposal method

Waste produced by Cemig is ranked into 3 categories: Igarapé UTE; non-hazardous waste; and hazardous waste..

### Waste by Category (t)

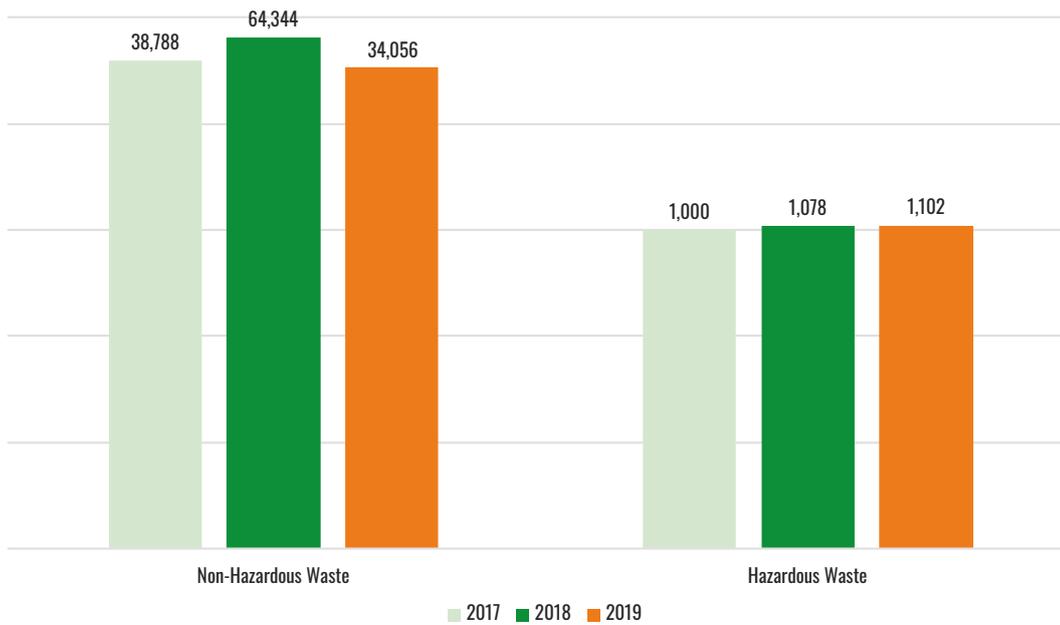


Chart 18: Waste by category

[306-4] Considering that 967.4 t of hazardous waste was treated and shipped<sup>137</sup>, the remaining amount was sold. Cemig does not export or import hazardous waste.

<sup>137</sup> - Waste given the following final disposal were considered as treated: co-processing, decontamination and recycling, incineration, and CTO regeneration.

## WATER CONSUMPTION AND EFFLUENTS PRODUCED

**[103-3:306; 303-1]** In 2019, total water consumption at Cemig was 254,094.78 m<sup>3</sup>. This amounted to a 4.5% decrease in relation to the total consumption in the year before, which totaled 266,548.87 m<sup>3</sup>.

Concerning efforts to reduce water consumption in the Company, Cemig has a goal that determines a 4% reduction in total consumption in 2020, compared to the consumption determined in 2011, the base year of the goal, when 2,393,934 m<sup>3</sup> were consumed. Toward that and following the results achieved in previous years, in 2019, there was an 89.5% reduction in water consumption compared to the base year, confirming the achievement of the target set for 2020 (this was the first consumption reduction goal defined by the Company).

Approximately 1 year after the end of this target term, it is believed that there have been significant advances in the entire process of management and control of water consumption in the Company. However, there are also lessons learned regarding the design of the goal, the level of ambition, and the possibilities of adapting the monitoring metrics throughout the achievement period. For the next goal, Cemig should gage the possibility of implementing a relative goal that takes into account changes in the size of the Company, purchase and sale of assets, and the fact that there are still estimated values in the accounting for its total consumption of water.

Regarding amounts determined for 2019, Cemig GT's water consumption was 96,299.53 m<sup>3</sup>, while Cemig D's consumption was 157,795.25 m<sup>3</sup>. In projects where it is not possible to perform direct measurement, an estimated calculation of the volume consumed is made. The breakdown of total water consumption by catchment source in 2019 is shown below.

## Total Water Consumption by Source - m<sup>3</sup>

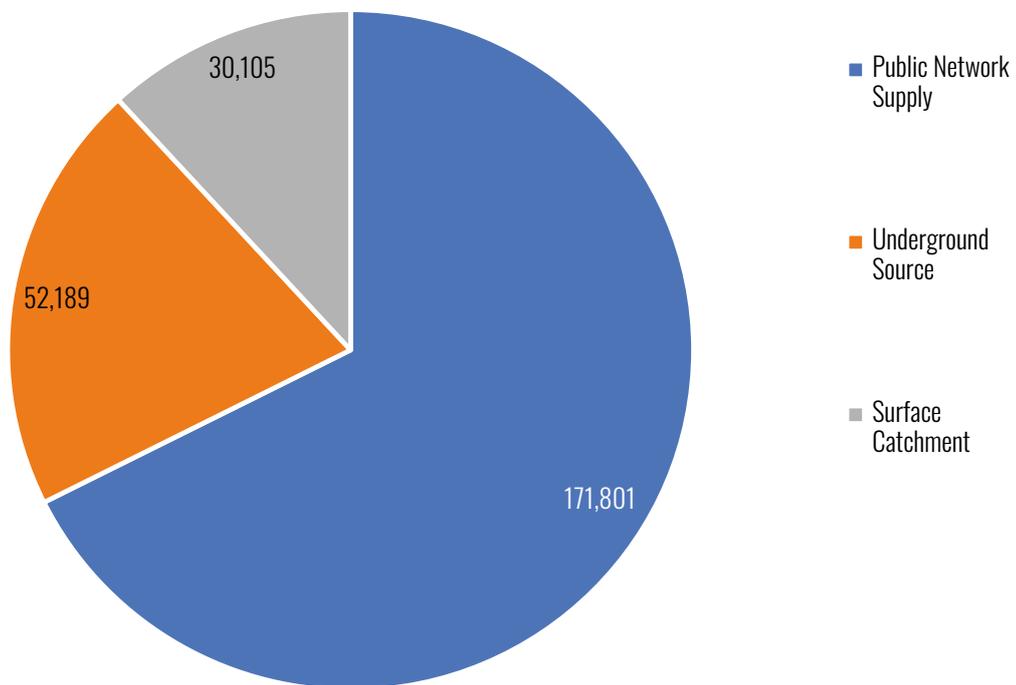
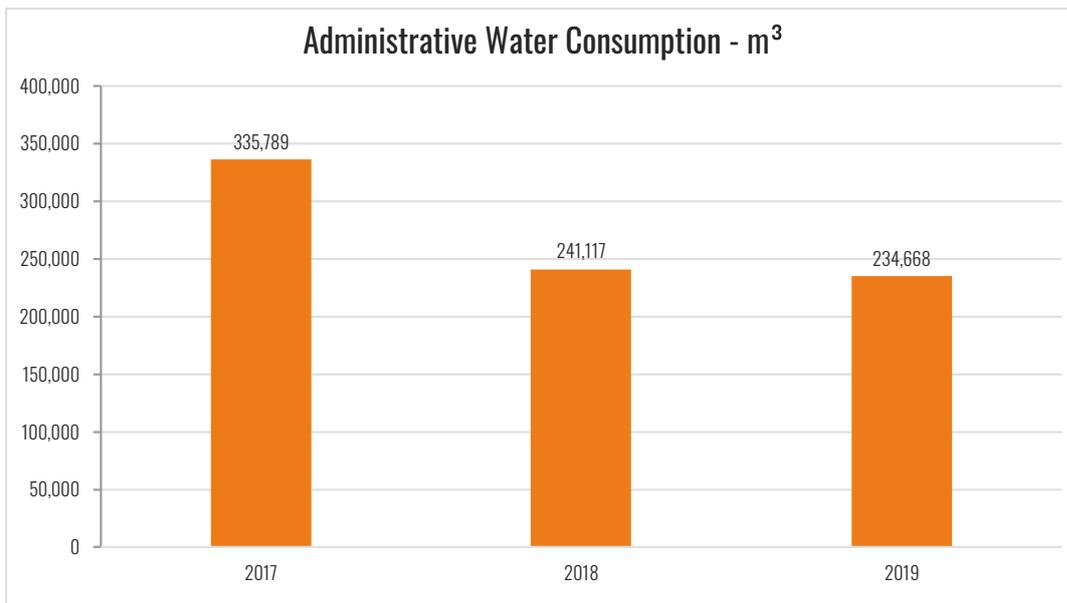


Chart 19: Total water consumption by source

It is noteworthy that, due to the characteristics of Cemig's projects, there are 2 ratings for the Company's water consumption, administrative consumption, and industrial consumption.

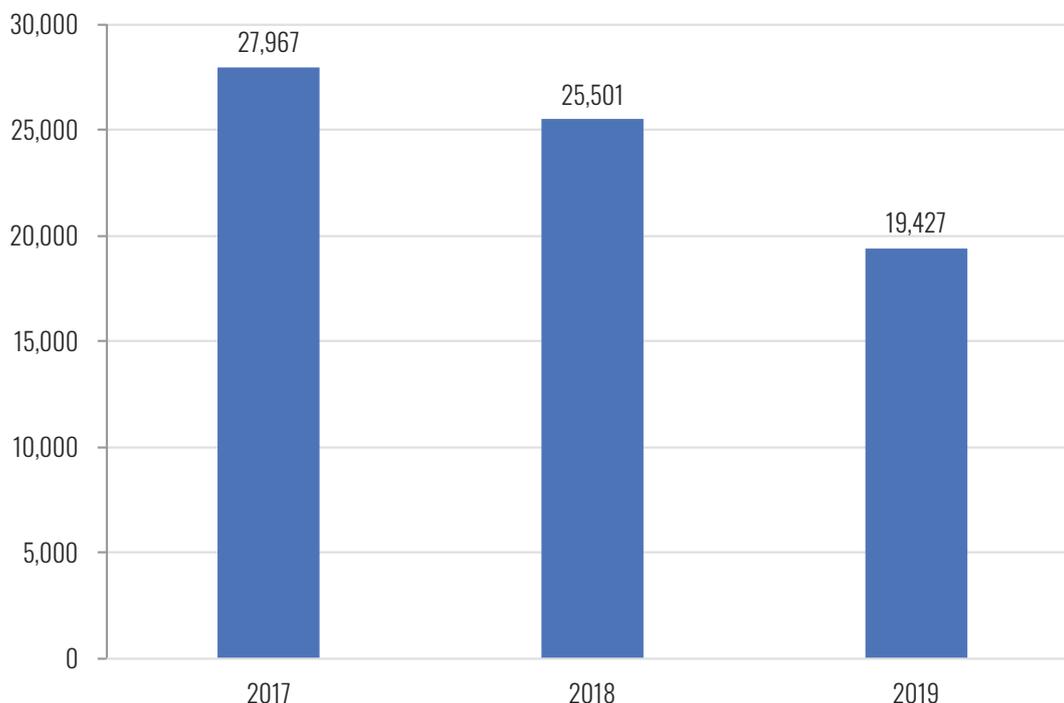
Administrative consumption takes place at the company's various facilities and can come from public utility supply, surface catchment, and artesian wells (underground collection). In 2019 this consumption totaled 234,667.78 m<sup>3</sup>. The history of administrative water consumption in the past 3 years is shown in the chart below:



**Chart 20:** History of administrative water consumption

Industrial consumption, on the other hand, occurs exclusively in the operations of UTE Igarapé, and comes only from surface catchment. In 2019, industrial consumption totaled 19,427 m<sup>3</sup> of water, a 23.8% decrease when compared to the 2018 consumption. Despite the UTE having generated twice as much energy in 2019, the decrease in water consumption is because, in 2018, there was a series of training courses for the UTE Igarapé staff, where inputs of water and oil were used, without actual generation of energy. But in 2019, after the team had been trained, input consumption was actually used for actual energy generation. The history of administrative water consumption in the past 3 years is shown in the chart below:

## Industrial Water Consumption - m<sup>3</sup>



**Chart 21:** History of industrial water consumption

**[303-2]** In addition to consumptive consumption, Cemig also accounts for non-consumptive water consumption<sup>138</sup>, mostly made up of the water used to cool turbines and generation equipment. After being used, that water returns completely, and without significant changes, to the streams from which it was taken. This consumption reached 57,855,826.78 m<sup>3</sup> in 2019, considering only Cemig GT plants. This figure does not take turbine water into account, which is also characterized

as non-consumptive use. These activities do not significantly affect any water source.

**138** - Consumptive: Usage that consumes water by returning to the primary sources of catchment either a smaller amount of the collected water or water with a lower quality than what was collected. Non-consumptive: Usage that does not consume water, only uses it, and what is used is returned entirely to the source from which the water was taken with practically the same quality.

**[303-3]** Cemig does not use recycled or reused water, nor does it adopt procedures for reusing or recycling water.

**[306-1]** The impacts of liquid effluent discharges vary according to the quantity, quality, and destination of the effluent. The major effluents produced by Cemig come from the sanitary facilities in its infrastructures, from the demineralization process of the water used in the boiler of the thermal plant, and from other operational uses of water in the Company's facilities.

The volume of effluent generated by Cemig is obtained using a conversion calculation, which considers that 80% of all water consumed is discarded as effluent. Thus, a volume of 203,276 m<sup>3</sup> of effluents was estimated for 2019. Regarding treatment, 100% of the effluent produced is treated. Most of this effluent is sent to conventional treatment systems provided by local concessionaires, and a small portion is treated in septic tanks within Cemig's own projects. No effluent produced by the Company poses a risk to adjacent water bodies.

Regarding the disposal of water used in power generation and cooling down of equipment in hydroelectric plants, in most of the facilities, the water used is taken at the water catchment point and discharged into the tailrace system through a branch, but without being measured. These uses are non-consumptive and the water is discharged as a whole directly into the stream. Eventual degradation in water quality can occur in negligible amounts when compared to the river streamflow.

Concerning Igarapé UTE, 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. The water quality of the receiving stream - the Paraopeba River - is

monitored downstream of the release point, to ensure compliance with the legislation<sup>139</sup>. In 2019, the volume of effluent released by UTE Igarapé was 5,398 m<sup>3</sup>.

**139** - The parameters accepted by the legislation are: pH 6 to 9, turbidity <100, COD <180, and oils and greases <20

Monitoring also consists in carrying out audits 3 times a year: an external audit carried out by the ABNT certifying body, and two internal audits carried out by experienced auditors adequately trained for that purpose.

**[306-3; 306-5]** It is important to stress that the major risk of negative impacts from the discharge of effluents from Cemig is the presence of oil in the water from UHEs. Any type of incident related to contamination or leakage is recorded and consolidated in an Environmental Occurrence Report - ROA.

In the case of Cemig GT, in 2019, there were 16 instances of waste leakage, none of which was considered a significant leak<sup>140</sup>. There were 5 oil leaks in water due to equipment failures; it was not possible to determine the amount of oil leaked in

those instances. Besides, 11 episodes of oil spill on floors were recorded, totaling 1,265 liters of oil.

**140** - A leak equal to or greater than 1,000 liters is considered significant.

In Cemig D, there were 2 recorded incidents in 2019, with a total volume of 1,400 liters. In both incidents, all contaminated solid waste was removed and disposed of correctly. Below are details of the most significant episode, where 1,000 liters of oil leaked.

Oil Leakage Record	
Deployment	Juiz de Fora 8 Substation
Leak location	SE MOBILE transformer (serial number 1017963240 - SEST00003-4)
Leak volume (liters)	1
Material leaked	Oil spill on floor

Table 47: Leak/spillage episodes during Cemig D operations in 2019

## 9.3

# WATER IN THE GENERATION PROCESS

Water is the strategic resource Cemig's business depends on, since 98.5% of the electricity generated comes from hydroelectric power plants. Cemig recognizes its role in conserving this resource and the potential impacts of its activities on water availability. It was acknowledged for the first time as a global leader in sustainable water management, earning a place in the choice "A list" group of CDP Water Security.

Since 2016, it has a Water Resources Policy<sup>141</sup>, whose principles are detailed below.

141 - Available at: [http://www.cemig.com.br/pt-br/A\\_Cemig\\_e\\_o\\_Futuro/sustentabilidade/Recursos\\_Hidricos/Documents/NO-02.25-%20Pol%C3%ADtica%20Recursos%20H%C3%ADdricos.pdf](http://www.cemig.com.br/pt-br/A_Cemig_e_o_Futuro/sustentabilidade/Recursos_Hidricos/Documents/NO-02.25-%20Pol%C3%ADtica%20Recursos%20H%C3%ADdricos.pdf).

### COMMITMENTS

- Adoption of practices for the rational, integrated, and sustainable use of water resources.
- Prevention and defense against critical hydrological events, both of natural origin and resulting from the inappropriate use of natural resources.

## GOALS

- Conservation of water and preservation of water sources by establishing partnerships with public agencies and with society, aiming at the best use of this natural resource.

## RESPONSIBILITIES

- Participation in Public Management and compliance with the Water Resources legislation;
- Safe Reservoir Management;
- Weather Monitoring;
- Qualitative and Quantitative Monitoring of Water;
- Relationship with Stakeholders;
- Research and Development.

# WATER RESOURCE MANAGEMENT

**[103-2:303; 103-3:303]** The use of water to generate 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)<sup>142</sup>.

**142** - ONS is a private company established as a non-profit civil law association responsible for coordinating and controlling the operation of power generation and transmission facilities from SIN, under the supervision and regulation of Aneel.

The Company is aware of the importance of water resources for the maintenance of its business and society. So, it has established a Water Resources Policy to define the principles that govern its management actions related to that environmental aspect.

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 inappropriate use of natural

resources, and considering the needs of current and future generations and water availability<sup>143</sup>.

**143** - Electric Sector GRI: 303(EU)

The principles stated in the Policy are:

- **Water Resource Management:** carry out the management of water resources associated with its ventures by the identification and assessment of risks and impacts, and the adoption of measures aimed at making the best use of this resource, taking into account the specifics of each watershed and meeting their multiple uses.
- **Water Resource Conservation:** promote actions focused on water conservation and the preservation of water sources by establishing partnerships with public agencies and with society, aiming at water quality and availability in the watersheds it has projects in.
- **Participation in Public Management and compliance with the Water Resources Legislation:** comply with current legislation and also technically contribute to the drafting of laws and regulations relating to water resources, acting in decision-making committees and regulatory forums.
- **Safe Reservoir Management:** provide the necessary means for the safe management of the operation of its reservoirs, ensuring the continued existence of the venture and the safety of the communities downstream.
- **Climatological and Quantitative Monitoring of Water:** conduct climatological and quantitative monitoring of water, as well as use mathematical weather and hydrological forecasting models with the objective of planning and operating the reservoirs, issuing weather alerts, conducting studies for the expansion of generation, the sale of power, and to meet their multiple uses.
- **Water Quality and Sedimentometric Monitoring:** Cemig is committed to monitoring water quality and sediment entry and deposition in its reservoirs, to estimate their life and to characterize the rivers it has projects on.
- **Relationship with Stakeholders:** develop engagement activities with communities and other stakeholders, related to the multiple uses of their reservoirs and the shared management of water resources, in order to identify their needs and expectations to take them into account in its decision-making process.
- **Research and Development:** promote and carry out research and technological development and innovation projects linked to the topic of water resources in partnership with universities and research centers, aiming at improving its operational efficiency and contribute to the transfer of knowledge to society.

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 has been the case since 2013<sup>144</sup>, the monitoring and forecasting of reservoir levels, as well as constant engagement with public authorities, civil society and users, has been paramount in ensuring energy generation together with maintaining the other uses of water. In these situations, the availability of water for the several uses can be compromised. This would lead to an increase in the competition between the energy sector and other users, such as human supply, animal thirst-quenching, agriculture, and maintenance of natural habitats, resulting in less availability for hydroelectric power generation.

**144** - Due to the water crisis taking place in Brazil since 2013 - and in 2019, up to this moment - and noticed in most watersheds located in the south-central region of the country, the discharge of streams reached values well below the historical average, especially in the period between May and October.

At the same time, excess water can also pose a risk, as several stakeholders may feel harmed if the precipitation index rises and Cemig has to open its floodgates so as not to physically compromise dams, thus flooding a productive area downstream.

To mitigate the risks resulting from a lack of technical information by stakeholders, about the operation of the reservoirs, about low water availability, or about excess water availability, which can have negative impacts on the Company's image and financial losses resulting from possible indemnities to third parties, Cemig has the following management practices, known as discharge regularization:

- Damping of discharge variations of a stream resulting from natural storage in a section of its course;
- The effect produced by the reservoirs in order to retain excess water from periods of large discharges, to be used during drought periods;
- Providing a constant (or not very variable) discharge, whatever the size of the reservoir or the purpose of the accumulated water after having receiving discharges that varied much along time; that is, its function is the regularization of the stream discharge.

Thanks to that, in using water, Cemig participates actively and strategically of the drafting of laws and norms for the Water Resource Policy and Management System. 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.

Cemig has successful experiences in reservoir management geared at water security: Três Marias and Irapé are examples, whose special operation during a period of water scarcity between the years 2013 and 2018 ensured the continuity of multiple uses of Water Resources in the respective watersheds where the projects are located.

Another successful experience started in 2017 and continuing in 2019 was the participation in the unprecedented partnership in Rio das Velhas Watershed Committee - CBH (Rio das Velhas, São Francisco Basin) involving the reservoir from SHP Rio de Pedras - Cemig GT and other water users in the region.

Another variable of the water crisis in the region is the fact that Copasa - Minas Gerais Sanitation Company - has been drawing more water from Rio das Velhas than usual, due to the situation of Paraopeba River, affected by the breach of the Vale dam in Brumadinho, making part of the catchment from that river impossible. It is expected to go back to normal in October 2020.

The situation of severe water crisis due to the prolonged drought also impacted the Upper Rio Velhas basin, and continues through 2019. The basin is responsible for the public supply for about 2.4 million people, around 50% of the Metropolitan Region of Belo Horizonte - RMBH. As COPASA's Bela Fama Water Treatment Station - ETA uses the run-of-river catchment method, the scarcity of water along the river ended up leading to operational difficulties.

Due to this situation, the Upper Rio das Velhas Discharge Management Group (established in 2016), led by CBH Velhas and formed by users participating in CBH - Cemig, COPASA, Anglo Gold Ashanti and Minas Gerais Water Management Institute - IGAM has been proposing alternatives solutions to increase water availability to ensure supply.

The major decision in 2019 was to continue the execution and management of integrated operation of the Upper Rio das Velhas reservoirs: SHP Rio de Pedras and the reservoirs of Rio do Peixe Generating Center, located upstream from the catchment area of ETA Bela Fama. It proposed and carried out the preservation of water stored in the reservoirs, so that it could be used at critical times of low discharge in the ETA Bela Fama catchment volume.

Cemig, as well as the mining companies Vale and Anglo Gold Ashanti, have water dams in the Upper Rio das Velhas region, which makes these companies highly relevant players in thinking solutions aiming at RMBH water security.

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.

In order to fully guarantee regularity to the various uses of water resources, the grants relating to the generation of electricity are linked to the technical studies of the project, taking into account the adjusted discharge and characteristics of both the reservoir and the dam.

Currently, the following risks related to the management of water resources are mapped: siltation and breach of reservoirs, deviations in the weather forecast, loss of physical assurance of SHPs as a consequence of the decrease in water availability, regulatory and price structure changes, and potential conflicts with stakeholders, which may result from both prolonged droughts and the occurrence of flood events due to excessive rainfall<sup>145</sup>.

**145** - More details on the water risks faced by the company are available in other Cemig publications, namely: Form 20-F, CDP Climate Change Report (2019) and CDP Water Security Report (2019).

## HYDROMETEOROLOGICAL MONITORING

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

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 distributed throughout strategic locations in the states of Minas Gerais, Goiás, Rio de Janeiro, Espírito Santo and Santa Catarina, and their data are received in real time at the Company's headquarters in Belo Horizonte

To carry out hydrometeorological monitoring and forecast, Cemig has a Weather Rater that provides greater safety for the operation of hydropower projects and society. The radar is also strategic for the control and operation of hydroelectric power plant reservoirs. Having early information on the direction of displacement and the intensity of rains, it is possible to estimate the amount of water that will reach a reservoir and adjust its

hydraulic operation to minimize the effects of floods for the population and the project. Besides, during the rainy season, Cemig issues alerts to the State Civil Defense about storms that could have serious consequences for the population, thus allowing for preventive actions.

Using results from the climate models mentioned

above and hydrological models of rain-discharge transformation, Cemig drafts tributary discharge scenarios for the major basins in the National Interconnected System. Based on these scenarios, inputs are entered in the official hydrothermal optimization models being used by the Brazilian Electricity Sector (Newave and Decomp<sup>146</sup>), which, in addition to the operating policy of the Brazilian generating complex, determines the price of energy in the short-term market.

**146** - NEWAVE - Long and Medium Term Interconnected Hydrothermal Systems Operation Planning Model; DECOMP - Short-term Interconnected Hydrothermal Systems Operation Planning Model.

Additionally, based on the Corporate Risk Management System, Cemig analyzes the scenarios and determines the degree of financial exposure to risks, considering the probability of their occurrence and impact, and establishes control measures for the following risks: silting of the reservoirs, deviations from the weather forecast, loss of physical security of SHPs and reduction of water availability, with impacts on sales.

## WATER QUALITY

The Brazilian electricity sector has faced several environmental issues during the planning, implementation, and operation of its projects. The implementation of dams has considerable impacts on rivers, and these changes can directly influence the balance of the ecosystem, which in turn can produce a series of physical and chemical changes, and also changes in the biotic components of the system.

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.

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 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.. The analyzes, and the frequency with which they are performed, are shown in the table below.

Analysis	Frequency
Analysis of groundwater	Semi-annual
Analysis of effluents - great traps	Semi-annual
Analysis of effluents - water and oil separator	Monthly
Water freshness analysis	Semi-annual
Fumigation and Pest Control	Semi-annual
Air quality of internal environments	Semi-annual
Soil analysis in contaminated areas	When there is suspicion of contamination
Noise	Every two years

**Table 48:** Analysis made and their respective frequency

## SISÁGUA

Collections for monitoring water quality yield a large volume of information, which is analyzed and stored, thus guaranteeing an extensive database (Siságua), which allows for the analysis of the temporal and spatial evolution of the reservoirs and their surroundings. Cemig makes this database available on the Internet, in order to share with society the information acquired about the aquatic ecosystems the Company has projects in. Thus, Cemig reinforces its standing that information systems have taken on a strategic role in organizations, thus providing for more efficient management.

It is important to note that the achievement of the objective of ensuring the transparency of the activities carried out by the Company is a gradual process. Given that purpose, this year of 2019, an internal survey project was carried out involving the sectors of the Environmental Management Department to define guidelines for improving Siságua. The method chosen to carry out the research and draft the guidelines was Double Diamond - a comprehensive and visual diagram of the Design process made up of 4 stages: discover, define, develop, and deliver. As the project goes on, it has been providing effective interaction between management bodies and users, with a view at achieving sustainable management of water resources. The table below shows the amounts invested in 2019 for the monitoring of water quality of the generation facilities, by project.

Company	Cost (R\$)
Cemig GT	570
Cemig G. Camargos	40
Cemig G. Itutinga	9
Cemig G. Leste	74
Cemig G. Oeste	66
Cemig G. Salto grande	37
Cemig G. Sul	43
Cemig G. Tr s marias	91
Cemig PCH	11
Horizontes	105
Rosal	70
S† Carvalho	37

**Table 49:** Amounts contributed in 2019 for the monitoring of water quality

## WATER QUALITY INDEX - IQA

Water quality indexes are applied in order to assess the degradation condition of water resources. These indexes aim at simplifying, quantifying, analyzing, synthesizing, and communicating data obtained during the monitoring, to translate them and facilitate communication with the lay public. Thus, Cemig uses and makes available the Water Quality Index - IQA (CETESB, 2019<sup>147</sup>) with the additional objective of feeding information for the environmental management of the 47 monitored plants. IQA data are available in the Siságua System.

**147** - Based on a study carried out in 1970 by the National Sanitation Foundation in the US, CETESB adapted and developed the IQA - Water Quality Index (Índice de Qualidade da Água), that includes 9 variables considered relevant for the assessment of water quality. 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. The variables and quality indicators used in the IQA are: pH, BOD, thermotolerant coliforms, total nitrogen, total phosphorus, temperature, turbidity, total residue, and dissolved oxygen.

The table below shows the 2019 average IQA results for some Cemig plants located in several watersheds.

Plant	Water Body	IQA		Quality Level	Range
Cajuru	Pará	71.62		Excellent	90 < IQA < 100
Emborcação	Paranaíba	83.10		Good	70 < IQA < 90
Nova Ponte	Araguari	74.11		Medium	50 < IQA < 70
São Bernardo	Ribeirão São Bernardo	74.25		Bad	25 < IQA < 50
Irapé	Jequitinhonha	81.94		Very Bad	0 < IQA < 25

Table 17: Average IQA for 2019

## 9.4 BIODIVERSITY



[103-1:304; 103-2:304] Cemig pays special attention to the conservation of biodiversity of the environments it has a footprint in, since water and biodiversity are closely related. There is a legal commitment to recover, protect, and preserve woods, rivers, and fauna of the areas surrounding the projects.

Cemig's Biodiversity Policy<sup>148</sup> is a formal definition of its commitment to preserving fauna and flora. Cemig's operating area interfaces with 2 land hotspots<sup>149</sup>, the Cerrado and the Atlantic Forest, and Cemig is the Company responsible for managing over 3,500 km<sup>2</sup> of freshwater reservoirs.

<sup>148</sup> - Cemig's Biodiversity Policy is publically available at: [http://www.cemig.com.br/pt-br/A\\_Cemig\\_e\\_o\\_Futuro/sustentabilidade/Documents/NO-02.17\\_Politica%20de%20Biodiversidade.pdf](http://www.cemig.com.br/pt-br/A_Cemig_e_o_Futuro/sustentabilidade/Documents/NO-02.17_Politica%20de%20Biodiversidade.pdf).

<sup>149</sup> - Highly threatened areas of special biological relevance for the entire planet.

Specialized studies are developed for each project. These studies characterize, assess, and establish environmental programs aimed at controlling, mitigating, and compensating for negative impacts and enhancing positive impacts, according to their kind, in compliance with the general legal framework on environmental impacts. This involves synergy between research, innovation, and the practice of solutions that, in line with the project coverage, add value to society and the biomes where it operates.

As the Company's major generation source is hydropower plants that require a change in spatial layout for their construction, there is a legal commitment to recover, protect and preserve the forests, rivers, and fauna surrounding the projects, especially the ichthyofauna.

**[304-4]** In Cemig group projects, species are monitored as part of environmental programs to comply with licensing conditions, as well as by research projects and specific programs.

Thanks to the execution of these programs and projects, it was possible to obtain a list of endangered species categorized in some of the degrees of threat established internationally by IUCN in its "Red List of the International Union for the Conservation of Nature and Natural

Resources", the National list of ICMBio and MMA (2018), in the "Red Book of Threatened Brazilian Fauna", and in the List of the State of Minas Gerais in COPAM Normative Resolution No. 147 from April 30, 2010.

In view of the foregoing, 32 species of fauna and 4 species of flora were found that appear in at least one of the lists of endangered species mentioned above. The names and threat levels for each species are given in the tables below:

Taxa	Common Name	List of Endangered Fauna		
		COPAM 2010	MMA 2018	IUCN 2018
Mesoclemmys vanderhaegei	Argentine snake-necked turtle			NT
Pecari tajacu	Collared peccary	VU		
Lonchophylla dekeyseri	Dekeyser's nectar bat	EN	EN	EN
Glyphonycteris sylvestris	Bat	VU		
Chrysocyon brachyurus	Maned wolf	VU	VU	NT
Lycalopex vetulus	Hoary fox		VU	
Leopardus tigrinus	Oncilla	VU	EN	VU
Leopardus pardalis	Ocelot	VU		
Puma concolor	Cougar	VU	VU	
Puma yagouaroundi	Jaguarundi		VU	

**150** - List of Avifauna, Herpetofauna and Mastofauna collected at Transmission Lines of Cemig Group Projects (LT) 345 Kv Furnas-Pimenta II (MG) and UHE Queimado. NT= Nearly Threatened, EN= Endangered, VU=Vulnerable, CR= Critical Risk, ID= Insufficient Data.

Tapirus terrestres	South American tapir	EN	VU	VU
Myrmecophaga tridactyla	Giant anteater	VU	VU	VU
Rhea americana	Greater rhea			NT
Micropygia schomburgkii	Ocellated crane	EN	NT	
Penelope ochrogaster	Chestnut-bellied guan	CR	VU	VU
Crax fasciolata	Bare-faced curassow	EN	CR	VU
Platalea ajaja	Roseate spoonbill	VU		
Aratinga auricapillus	Golden-capped Parakeet			NT
Ara ararauna	Blue-and-yellow macaw	VU		
Primolius maracana	Blue-winged macaw		NT	NT
Alipiopsitta xanthops	Yellow-faced parrot		NT	NT
Spinus magellanicus	Hooded siskin	VU		
Syndactyla dimidiata	Planalto foliage-gleaner	EP		
Culicivora caudacuta	Sharp-tailed grass tyrant	VU		VU
Cistothorus platensis	Grass wren	NT		
Neothraupis fasciata	Shrike-like tanager			NT
Charitospiza eucosma	Coal-crested finch			NT
Cyanoloxia brissonii	Ultramarine grosbeak		NT	

Table 50: List (1) of endangered Fauna species

Taxa	Common Name	List of Endangered Fauna		
		COPAM 2010	MMA 2018	IUCN 2018
Brycon orbignyanus	Piracanjuba	CR	EN	
Piaractus mesopotamicus	Caranha, pacu		NT	
Salminus franciscanus	Dourado		NT	
Crenicichla empheres	Jacundá		VU	

Table 51: List (2) of endangered Fauna species

151 - List of Ichthyofauna Species collected in Cemig Group's Hdrypower Projects (UHes Camargos, Emborcação, Queimado, Três Marias and PCHs Salto do Passo Velho and Salto do Voltão. NT= Nearly Threatened, EN= Endangered, VU=Vulnerable, CR= Critical Risk, ID= Insufficient Data.

Taxa	Common Name	List of Endangered Flora
		IUCN 2018
Xylopia brasiliensis	Pindaubuna, pinda'ba, corti a, binda'ba	NT
Bowdichia virgilioides	Sucupira, sucupira-do-cerrado, sucupira-branca	NT
Lepidaploa chamissonis	-	NT
Maytenus rupestris	-	VU

**Table 52:** List of endangered Flora species

**152** - List of Flora Species collected in Cemig Group's Hydropower Projects (UHE Peti and PCHs Cajuru and Rio de Pedras). NT = Nearly Threatened, VU= Vulnerable.

As the largest electricity distributor utility in Brazil in terms of extension of lines and grids, Cemig understands how critical the interference of electric networks in the environment is, and prioritizes actions to minimize the risks of power shutdowns and interruptions, and thus carries out sustainable management of vegetation and the management of terrestrial habitats. This way, the Company is contributing to the fulfillment of the UN's Sustainable Development Goals (SDG) 15: "Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss."

**[305-7]** Besides hydroelectric plants, until 2019, Cemig operated a thermoelectric plant, which produced different impacts. The emission of atmospheric pollutants such as NOx, SOx, particulate matter, and greenhouse gases resulting from the combustion of fuel in the boilers are the major impacts of this project on biodiversity. The table follows below<sup>153</sup>.

In 2019, UTE Igarapé reached an average efficiency of 31.9%. It is an Oil Boiler plant that uses diesel oil as an input for energy production.

Taxa	Common Name	List of Endangered Flora
		IUCN 2018
Xylopia brasiliensis	Pindaubuna, pinda'ba, corti a, binda'ba	NT
Bowdichia virgilioides	Sucupira, sucupira-do-cerrado, sucupira-branca	NT
Lepidaploa chamissonis	-	NT
Maytenus rupestris	-	VU

**Table 53:** UTE Igarapé pollutants

**153** - Electric Sector GRI: EU-11

## INTEGRITY OF AQUATIC ECOSYSTEMS

**[304-2]** The construction and operation of a hydroelectric plant causes impacts on aquatic fauna, related to the formation of the reservoir (damming of the river), such as preventing the free movement of migratory fish between their spawning sites, initial development and feeding, among other effects on other elements of aquatic fauna and flora. With the river dammed, fish may gather at the foot of the dams and go into the suction tube of the generating units. The plant operating maneuvers expose them to the risk of injury and death.

The construction of the reservoir changes the hydrological dynamics of the river, transforming an environment of busy waters (lotic state) into an environment of calm (lentic) waters. This change favors the establishment of some species, while making it difficult for others to exist. The fauna

that establishes itself is, primarily, dependent on the pre-existing species in the flooded area. The adaptations and peculiarities of each species will determine their level of success in adapting to the modified habitats.

The areas affected by these events are generally immediately downstream of the generating units or downstream of the spillway. In general, the impact is short-lived, but, as it causes widespread mortality, it may become irreversible.

## ICHTHYOFAUNA CARE

Peixe Vivo Program was established in 2007 with the mission of minimizing the impact on ichthyofauna, seeking solutions and management technologies that integrate Cemig's power generation with the conservation of native fish species and stimulating community engagement.

The positive impacts of the program are reflected in the significant decrease in fish deaths and, consequently, in environmental fines, in the improvement of management and conservation programs with solid scientific bases and the participation in the company's sustainability indexes.

Peixe Vivo actions are based on 3 pillars:

1. Conservation and Management Programs aimed at adopting the best practices for fish conservation;
2. Research and Development, which expand scientific knowledge about ichthyofauna and provide subsidies for more efficient conservation strategies; and
3. Relationship with the community, which disseminates the program's actions and results to society, seeking their engagement in the building of strategic planning.

In pursuit of the continuous improvement of Cemig's environmental activities, Peixe Vivo Program carries out several research projects. Some of these projects are developed together with Aneel's R&D Program, and the other portion, using the Company's own resources.

During 2019, 7 research projects were carried out using resources from the Company and the Aneel R&D Program, and 49 works related to the projects or actions of Peixe Vivo Program were published, presenting results of ongoing projects and projects that have already been concluded.

In 2019, the research projects coordinated by the Peixe Vivo team involved a total of 50 people from teaching and research institutions. Investment data, number of researches included, and other data are detailed in the table below.

Peixe Vivo Indicators		2018	2019
Programs for the Conservation of Fishes and the Management of Basins	Investment in ichthyofauna research and management projects (R\$)	2,544,896	7,780,932
	Affected biomass (kg) [1]	514.88	111.1
Research	Undergraduate research internship (students)	0	12
	Master's (students)	0	8
	Doctorate (students)	2	6
	Researchers (post-doctorate, technical support and researchers)	20	28
	Scientific production	12	49

[1] Élt measures the quantity of dead fish (in kg) due to the maintenance and operation of plants.

Table 54: Peixe Vivo Program Indicators

The training of human resources is an important pillar of Peixe Vivo Program, as these students will develop scientific projects in the area in the future, working with environmental agencies, NGOs, and companies. As they are carried out by well-trained professionals with a good level of education, the actions to preserve fish species will certainly be more effective over time.

Scientific production took into account all the papers resulting from the projects, which were presented at scientific congresses, published in national and international scientific journals; monographs, dissertations, and theses were also included.

The papers bring new and important information to the scientific community on topics such as the behavior, physiology, reproduction, and ecology of native fish species. The partnerships developed with several research institutions and domestic and foreign universities are extremely important, since they make it possible to move on with the projects that are currently underway.

With the goal of reducing the impact during the operation and maintenance of the plants, the “Fish Death Risk Assessment Program in Cemig Group's Hydroelectric Plants” is being carried out. This program allows for the assessment of the potential risks to ichthyofauna during the operation of hydroelectric plants through periodic monitoring and monitoring before actions, thus determining the density of fish and environmental conditions downstream of hydroelectric plants<sup>154</sup>.

154 - Electric Sector GRI: EU-13

Concerning the species most impacted during the operation of the Cemig Group's plants from 2017 to 2019, the major one is *Pimelodus maculatus* and, to a lesser extent, the following can be mentioned: *Loricariidae* (cascudo), *Serrasalmus brandtii* (piranha), *Trachelyopterus striatulus* (maria-mole); *Leporinus* spp. (piauí); *Prochilodus* spp. (curimba), together with some piabas and mandizinhos/catfish.<sup>155</sup>

155 - Electric Sector GRI: 304-2

The areas affected by these events are generally immediately downstream of the generating units or downstream of the spillway. In general, the impact is short-lived, but, as it causes the death of individuals, it becomes irreversible.

This information, in addition to making up a database, supports corrective and operational actions related to the environmental safety of the procedures performed. Aspects of the biology of the fish species most affected by the maintenance procedures of generating units are also assessed to better understand the relationship between biological factors and the presence of these species downstream from the plants.

So as to measure and monitor the impact on fish fauna, Peixe Vivo Program created the Affected Biomass indicator. This indicator adds up the whole dead fish biomass (in kilograms) due to the direct impacts caused by hydroelectric plants during the operation and maintenance of generating units. The annual thresholds for this indicator are established as a result of the historical analysis, seeking a continuous reduction.

For the year 2019, the threshold for the Affected Biomass indicator was 779kg, and the occurrences in the year totaled 111.1kg, well below the established limit. In 2018, the limit of the Affected Biomass indicator was 859kg, and the events in the year totaled 515kg.

The development and use of the ichthyofauna risk assessment methodology up to 2019 ensured an average annual reduction of 75.7% in the affected biomass, considering the current scenario of

Cemig's plant structure. It also allowed for a 97.7% reduction in the number of environmental fines imposed due to the occurrence of fish deaths<sup>156</sup>.

Based on the information obtained by the Fisheries Production Survey Program, which aims at diagnosing and monitoring fisheries production and the socioeconomic aspects of fishing activities carried out in some Cemig reservoirs, it is possible to estimate the value taken from the economy due to the death of fish in the rivers where Cemig operates.

It was concluded that the negative externality for society is the decrease in the volume caught, with a consequent reduction in the income of the fishermen and in local income. It is also noteworthy that there is a greater socioeconomic impact on the amount of funds that do not go into the local economy in communities whose aquaculture activity is more relevant and are subject to greater social vulnerability.

The amount withdrawn from the economy was calculated for the past 3 years of activity of Peixe Vivo Program. The consequences of the decrease in the amount of Affected Biomass in the amount taken from the local economy were clear, as shown below:

156 - Electric Sector GRI: EU-13

	2017	2018	2019
Affected biomass (kg)	997	515	111
Amount removed from the economy (R\$)	7,646	3,95	1,189
R\$/Kg of fish	7.65*	7.67*	10.70**
* average considering all the plants where fisheries production was surveyed, including plants that are not in Cemig's structure			
** average value only of plants that are part of Cemig. If we use only the current plant where it is carried out, we have a change in the values: 2016=9.5, 2017=10, 2018=10,1			

**Table 18:** Indicator of Affected Biomass and amount removed from the economy in the past 3 years

Along the course of the Peixe Vivo Project, Cemig had some environmental stations where the reproduction of native fish was carried out. Feed (the name given to the fish in the early stages of life) produced was released in the basins Cemig has projects in, and fish-farming activities were then carried out. The fish stocking activity involved the participation of society; however, due to a reduction in the number of the stations, this activity underwent a restructuring and was greatly reduced in 2019.

Since 2018, the effectiveness of the practice of fish stocking has been discussed. With an eye to that, Cemig reevaluated the feed release program with the environmental licensing agencies, with the support of Research Institutions. The major goal of this reassessment is the conservation of aquatic species, ensuring that the released feed can contribute to the ecosystem. Therefore, it is necessary to evaluate and readjust all environmental procedures and methodologies related to the carrying out of fish stocking, to make this technique effective and favorable to the environment, thus avoiding additional damages and losses.

If fish are released without clear objectives that are continuously monitored in the future, there is a risk of imposing serious ecological risks on native ichthyofauna. Among those risks, we can point out the reduction of the genetic diversity of the recipient population, the dispersion of pathogens in the wild, and increased competition with wildlife individuals for limited resources such as food and shelter. In these cases, the release of feed can drastically reduce local populations, even make them extinct. The discussion on the effectiveness of fish stocking has also been carried out by environmental agencies, which have also not authorized the activity.

## CARE WITH AQUATIC FLORA

Cemig is moving forward in identifying opportunities and improvements by carrying out environmental studies, always in partnerships with educational and research institutions and specialized companies, which contribute to the deployment of innovations.

In 2018, the study of the ecological integrity of surface waters stood out as one of the major biodiversity initiatives carried out by Cemig. This study was included in Cemig's 2018 Biodiversity Report. It consists of implementing the decision to establish a new methodology for monitoring water quality with a view at achieving an integrated view of the lotic and dammed environments within the watershed. Also, the work includes the results of some impacts studied at Cemig, such as the presence of invasive species. The work is based on 3 pillars: **(i)** the eco-hydromorphological conditions of the habitat; **(ii)** the physical and chemical conditions of the waters; and **(iii)** the characterization of the structure of aquatic communities.

The basins of Pará River, Santa Bárbara River and Rio das Velhas, and the contributory watersheds of SHPs Cajuru River, Peti River, and Rio das Pedras, respectively, were the subject of the 2018 study. In short, the characteristics that best define the 3 areas are: **(i)** PCH Peti's contributory watershed showed to be the most preserved one; however, it suffers discreet pressures from mining activities and urban areas in the municipalities of Santa Bárbara and Barão de Cocais; **(ii)** PCH Rio de Pedras's contributory watershed is in an intermediate condition, as it is less preserved than Peti's, but in a state of conservation superior to Cajuru's; **(iii)** PCH Cajuru's contributory watershed is comparatively the most anthropized one, being predominantly (80%) used for pasturing.

Also as a result of the above-mentioned study, the number of species found in these regions, and the list of those found on the "Red List of the International Union for the Conservation of Nature and Natural Resources" are presented in Table 43 of this report. Further study details in the 2018 Biodiversity Report.<sup>157</sup>

**157** - Two-yearly publication available at: [http://www.cemig.com.br/pt-br/A\\_Cemig\\_e\\_o\\_Futuro/sustentabilidade/nossos\\_programas/ambientais/Biodiversidade/Documents/Relatorios\\_Biodiversidade/Relatorio\\_Biodiversidade\\_2018.pdf](http://www.cemig.com.br/pt-br/A_Cemig_e_o_Futuro/sustentabilidade/nossos_programas/ambientais/Biodiversidade/Documents/Relatorios_Biodiversidade/Relatorio_Biodiversidade_2018.pdf).

## INTEGRITY OF LAND ECOSYSTEMS

Via its several subsidiaries, Cemig programs to preserve the fauna and flora of terrestrial habitats

impacted by its generation, transmission and distribution activities. The Company develops specific efforts to address the impacts inherent to the nature of these activities.

# URBAN TREE PLANTING CIRCUIT

Cemig conducts an annual cycle of lectures and practical demonstrations on Urban Tree Planting in some regions of the State, called the Cemig Urban Tree Planting Circuit. The event is attended by professionals from Cemig, municipal government officers, university students, and members from non-governmental organizations and public bodies linked to environmental management and who are interested in learning and discussing the topic.

The purpose of the event is to discuss the importance of planning and maintaining tree planting for the quality of the urban environment and to introduce good practices for managing urban tree planting. The Circuit includes the participation of specialists on the subject and addresses topics such as seedling production, maintenance and implementation of urban tree planting, the world scenario of urban tree planting, assessment and risk in trees, and others. Besides, participants have the opportunity to attend short courses on these topics.

Among the benefits brought about by this program, we can mention the preservation of urban biodiversity, greater absorption of rainwater, and the reduction of noise pollution; it also makes the urban environment more beautiful. Also, more trees in cities increase the rate of absorption of carbon dioxide and the release of oxygen. On average, 10,000 trees remove 45,000 kg of pollutants from the air each year. Also, more trees help reduce ambient temperature, thus making the climate of the cities milder.

## HEAT CURVE URBAN CENTER AND RURAL AREA

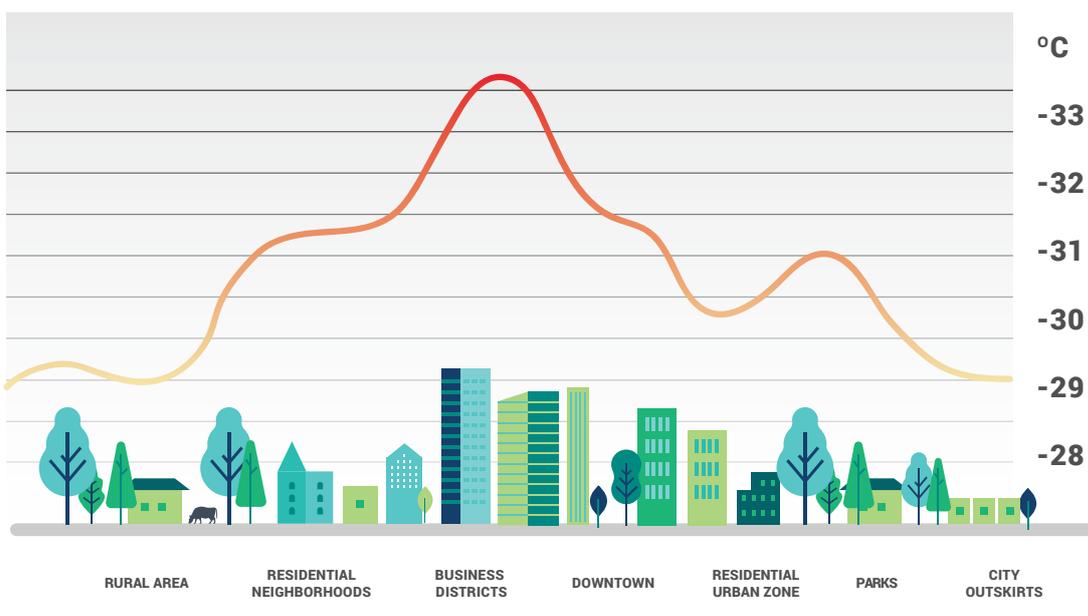


Figure 20: Heat Curve – Urban Center and Rural Area

In 2019, Cemig deployed the urban tree planting project in two cities in Minas Gerais:

- Abaeté: between April 10 and 11, 2019, another edition of the Cemig Urban Tree Planting Circuit was held in the city of Abaeté. The event was held in a partnership with the City Hall and brought in an audience of approximately 70 people. topics related to urban tree planting and short courses on the management and maintenance of urban trees were introduced and discussed;

- Piumhi - On May 28 and 29, 2019, Piumhi hosted another edition of the Cemig Urban Tree Planting Circuit, held in a partnership with the Piumhi Environment Secretariat. With an audience of over 80 people, the 2 days of the event included lectures and short courses given by professionals from the field.

## VEGETATION MANAGEMENT<sup>158</sup>

The Vegetation Management Process activities are developed throughout all stages of Cemig D's projects and installations - design, deployment, maintenance, and decommissioning of projects. The objective is to reduce or eliminate negative impacts on plant formations, or even enhance the positive impacts of the Electric Power System on forest formations and in the biodiversity in Cemig's concession area.

Mobile Tree Analysis Laboratory (LAMAR): The main objective of this Laboratory is the development and gauging of a methodology for assessing tree health, based on the instruments utilized in it. LAMAR can be used by city halls and research institutions in order to better analyze the health of trees and monitor them over time, reducing the risks of occurrences in Cemig's power system caused by tree falls, as well as contributing to the improvement of urban tree research, teaching and management professionals.

The Vegetation Management Process is carried out as Preventive Maintenance with the intention of reducing the probability of failure (or interruption) of the service provided, as well as reducing the likelihood of people and properties being affected. Periodic inspections of the power system are carried out as part of this process, and the necessary maintenance services are listed, including interventions in vegetation, always bearing in mind that trees:

- Provide a variety of benefits to society;
- Are living organisms that naturally lose branches and fall;
- The risk they pose to society is small when compared to the benefits they provide;
- We must think about tree planting management.

158 - Electric Sector GRI: 304 (EU)

Risk management involves the process of inspecting and assessing trees for their potential to cause damage to people and properties. It, therefore, involves the application of policies, procedures, and practices used to identify, assess, mitigate, monitor, and communicate the risk posed by a tree.

The scheduled interventions are preferably carried out before the probable date of the appearance of a failure, to avoid the occurrences. They are carried out at a predetermined frequency, based on knowledge about the behavior and response of trees to interventions, both in urban and rural environments. In 2019 446,470 tree pruning operations were carried out.

Another aspect of the process that has a preventive and mitigating nature is the use of distribution network engineering to reduce interruptions caused by trees, especially in urban environments. The growing use of protected and

isolated grids is geared toward this reduction, and the Company has adopted the minimum standard of service in these environments with protected medium voltage networks and isolated low voltage networks.

The search for technological improvement for this purpose is continuous, and should include medium voltage grids with a double protection layer in the modalities of grids for urban environments. These grids tolerance to contact with grounded objects (such as trees) is greater, thus mitigating the effects that interaction.

Concerning the remediation of impacts caused by trees, Cemig is getting ready for more severe weather events, when the degree of risk posed by vegetation is high. Through meteorological monitoring and forecasting systems, it is possible to allocate power system repair teams in such a way that they respond more quickly to system occurrences, to reduce the time that consumers remain without power supply.

Every demand for information received via our communication channels is analyzed and sent for the most appropriate treatment.

In 2019, the Integrated Vegetation Management (MIV) methodology was incorporated as the standard procedure for the maintenance of Transmission Line bandpasses, which was one of the goals laid down in 2018. MIV is the set of practices that:

- Uses procedures to control undesirable vegetation in the activities of opening and maintaining distribution network bandpasses using non-agricultural (NA) herbicides<sup>159</sup>;
- The establishment, in the long run, of a community of plants whose characteristics and growth do not interfere with the operational performance of electrical facilities, and which require minimal interventions, in addition to providing protection for the soil, shelter, and food for the fauna, among others environmental and operational benefits.

159 - GRI Setor Elétrico: 304 (EU)

## CONSERVATION UNITS

**[304-1; 304-3]** In order to promote biodiversity conservation, Cemig maintains some areas of forest remnants with a high degree of conservation and relevance to the biomes they are located in. They are:

- RPPN<sup>160</sup> Fartura, located in the municipality of Capelinha/MG, close to the UHE Irapé project. RPPN Fartura has 1,455 hectares of semideciduous seasonal forest in an advanced stage of regeneration and is an important remnant of the region Atlantic Forest.

The fauna and flora inventory recorded 72 plant, 53 bird, 25 mammal, 20 amphibian, 17 reptile and 6 fish species. Among the endangered species, the jaguar, maned wolf, and ocelot stand out. In 2019, the Reserve Management Plan was adapted;

160 - RPPN: Private Natural Heritage Reserve, pursuant Federal Law 9985/2000, which establishes the National System of Conservation Units - SNUC.

- RPPN Galheiro, which is 2,695 hectares wide and is located in the county of Perdizes/ MG, close to the UHE Nova Ponte project. RPPN Galheiro has dense and well-preserved native vegetation made up of a mosaic of physiognomies, including Semideciduous Seasonal Forest, Gallery Forest and Cerrado, in addition to small spots of anthropized areas, with remnants of exotic pasture. The latter, currently in the process of natural regeneration, accounts for only 1.0% of the total area of the

reserve. The fauna and flora inventory recorded 624 plant, 264 bird, 53 reptile, 36 mammal, and 20 of amphibian species, in addition to 78 families of insects. Endangered species have been identified, such as the Coimbra's titi or the white-eared titi, the giant anteater, the robust woodpecker, the maned wolf, and some rare species, such as the golden-capped parakeet. All actions carried out at RPPN Galheiro followed the unit's Management Plan;

- The Peti Environmental Station is located on the banks of the UHE Peti reservoir. It has a total area of 504 ha and is part of the counties of Santa Bárbara and São Gonçalo do Rio Abaixo, in the border area between the Atlantic Forest and the Cerrado. In a partnership with the Federal University of Minas Gerais (UFMG) and the Minas Gerais Technological Center (Cetec), Cemig carried out the inventory of native species of animals and plants, identifying

556 insect, 502 plant, 256 bird, 39 mammal, 26 reptile, 24 amphibian, and 10 fish species. Among the endangered species, the red-ruffed fruitcrow - which was adopted as the symbol of the reserve - stands out, together with the maned wolf and the cougar. 4 identified species are new to science, among them the dragonfly that received the scientific name of *Heteragrion petiense* and the cinnamon tree, named *Licaria triplicalyx*;

- Forest compensation at PCH Rio de Pedras, covering an area of 4.0456 hectares, defined according to IEF Ordinance No. 30 from February 30, 2015. The phytophysiology of the compensation areas is defined as Semideciduous Seasonal Forest and their

vegetation is well preserved, with fragments in the middle stage of secondary succession, displaying 2 well-defined strata: canopy and understory. The average canopy height is approximately 11 meters and is made up of tree species of moderate breadth.

In 2019, no partnerships with other groups or organizations for the protection or restoration of Cemig areas have been established. In addition to forest remnant areas, Cemig also has Restored Areas, where the Degraded Areas Recovery Plan (PRAD) was implemented. They are:

- PRAD UHE Irapé: the areas are located within a 10-km radius from the plant, and considering all areas worked, 175 ha were maintained. For these activities, there was no approval by independent external specialists, nor is there a partnership with third parties for the protection or restoration of the areas; however, currently, a company was hired to carry out ET activities. As 100% of what was planned for the

site was carried out, 55,000 seedlings were also planted. Since March 2019, only maintenance activities have been carried out in the areas (gutter cleaning, firebreak maintenance, fence maintenance, ant and termite control, top dressing, replanting and resowing, and irrigation). It complies with Technical Specification - ET-MG/CT-2017/008.

- UHE Emborcação PRAD - The Cemig - Aneel Technological Research and Development Project (R&D 602), titled "Strategies to speed up ecological succession in degraded areas around the UHE Emborcação: Ecological services performed by animals, in favor of environmental restoration" developed in a partnership with the Federal University of Ouro Preto - UFOP, was started in August 2018 and will last for 4 years. The study will be carried out in the degraded areas surrounding UHE Emborcação and aims at proposing and testing new techniques for the recovery of these areas, using new technologies and aiming at the deployment of ecological succession spots using fauna as a source of pioneering species. Although the whole PRAD area of UHE Emborcação -

with 220 ha - has been revegetated using a miscellaneous set of grass and pulse species, in addition to the planting of native tree species, its undergrowth is mostly made up of exotic grass species due to the chemical and structural characteristics of the local soil, which is extremely impoverished due to the intensive use at the time the dam was built. Altogether, 92 containment basins have already been established for greater retention of rainwater and, consequently, to feed the groundwater. Works to recover the concrete gutters installed in the area is also carried out on an ongoing basis in order to prevent new foci of erosion from appearing due to damage to these structures. Only about 10% of the area has been reforested using dense tree vegetation.

## RIPARIAN FOREST REFORESTATION PROGRAM

**[304-3]** With the formation of the large reservoirs of hydroelectric plants, a wide perimeter is created around their margins, normally without forest formations. When they exist, these formations are made up of species adapted to a drier environment and, therefore, little adapted to the high humidity of the soil due to the elevation of the groundwater level and fluctuations in the reservoir level.

This new layout of the environment creates the need for the deployment, recovery, and conservation of riparian forests surrounding the reservoirs to maintain ecological processes.

For almost 30 years, Cemig has been carrying out various research projects in partnership with universities, which have supported programs for the deployment of riparian forests around its reservoirs. Through its R&D Programs, the Company has tried to study and propose innovations in the face of technological challenges in the electricity sector. Partnerships with rural producers around their reservoirs have been fundamental to the success of these actions.

In 2019, 29 hectares were reforested on the margins of Cemig's reservoirs, 21 hectares at UHE Emborcação, and 8 hectares in the Rosal Energia riparian forest. In addition to the planting, Cemig performed maintenance activities on 111.8 hectares of riparian forests, 17.1 of which are at UHE Emborcação reservoirs and 94.7, at UHE Rosal.

# 10

## CLIMATE CHANGE

The global importance of discussions on the effects of climate change boosts the special attention that Cemig gives to the identification of risks and business opportunities, in addition to intensifying the search for solutions for adaptation and mitigation, avoiding risks and impacts on the Company's business.

Although the Company has low levels of greenhouse gas (GHG) emissions, its senior leadership is engaged in discussions related to them, with a focus on a more effective performance, as shown by the establishment of voluntary goals for the reduction of (i) emissions, (ii) power consumption, and (iii) energy losses.

Cemig identifies the risks and opportunities for its businesses related to climate change and seeks solutions for adapting and mitigating the possible effects that may impact them.

Corporate risk management is an integral part of Cemig's Corporate Governance practices, as shown in the Risk Management section of RAS 2019. It is noteworthy that, in 2019, the risks were also ranked according to their kind, one of which is the Socio-Environmental risk (associated

with poor or inadequate environmental and social management that has an impact on the environment and society). They also include potential climate change effects on business, which may make new ventures or the expansion of productive capacity unfeasible.

# 10.1

## RISKS AND OPPORTUNITIES ARISING FROM CLIMATE CHANGE



**[201-2]** In order to carry out an analysis of the financial implications regarding the risks and opportunities related to climate change, Cemig adopts a time frame rating for the identified strategic risks/opportunities - among which are included the related risks to climate change. The table below shows the timeline ranking adopted by Cemig for the breakdown of its short, medium, or long term risks.

Short-term risks: 0 to 2 years	<p>The risks that would already be occurring and/or those most likely to happen in up to 2 years are considered here.</p> <p>Chronic risks: an increase in average temperature.</p>
Medium-term risks: 2 to 10 years	<p>The risks that may occur in up to 10 years are considered here.</p> <p>Examples:</p> <p>Chronic risks: changes in rainfall patterns and extreme variability in weather patterns;</p> <p>Acute risks: increased severity of extreme weather events, such as cyclones and floods;</p> <p>Policies and legislation: others (e.g., carbon tax).</p>
Long-term risks: 10 to 30 years	<p>The risks that studies indicate that may occur starting 10 years from now, based on climate change scenarios, are considered here.</p>

**Table 55:** Time raking of risks identified by Cemig

Cemig considers a financial impact arising from risks related to substantial climate changes when there is a loss in the Company's net operating revenue greater than 1%. This indicator goes for the whole Company.

The following are the risk rankings related to climate change identified by Cemig.

## REGULATORY RISKS

In 2009, the National Policy on Climate Change laid down a reduction between 36.1% and 38.9% of Brazilian GHG emissions by 2020 as a voluntary goal. The Brazilian government ratified its participation in the Paris Agreement in 2016 by taking on - via the Nationally Determined Contribution - NDC - the commitment to reduce greenhouse gas emissions by 37%, against 2005 levels, by 2025, with a subsequent indicative contribution to reduce greenhouse gas emissions by 43%, against 2005 levels, by 2030.

Cemig considers the increase in operating costs to be the major potential impact in this category, and is attempting to deploy mitigation measures in a search for opportunities to expand energy generation using low-carbon renewable sources. Another way to mitigate this risk is to participate in sectoral associations like the Brazilian Business Council for Sustainable Development - CEBDS, which holds discussions on the risks associated with new regulations in Brazil.

## CARBON TAX

Cemig has a low carbon energy matrix, and in 2019 its only thermal plant powered by fossil fuel ended its operations. Therefore, the taxation risk was minimized in 2019, and, by 2020, Cemig will have a 100% renewable energy matrix. However, taxation can cover other Scope 1 emissions; for these cases, measures to reduce these emissions are being taken.

These expenses would amount to R\$ 435,844 per year, in case of these emissions being taxed. This value is calculated based on an estimated US\$ 6.54 tCO<sub>2</sub>e, which is the internal price adopted by Cemig based on the basket of carbon price values that considers the following parameters: (i) geographic location based on prices in countries in the same region of Brazil, namely, Latin America; (ii) sectoral parameter, based on prices charged by companies in the same sector as Cemig in Brazil and other countries; and the dollar exchange rate

of R\$ 4.50 and scope 1 emissions without the UTE Igarapé in 2019 in the amount of 14,809.54 tCO<sub>2</sub>.

## CAP-AND-TRADE SCHEMES

The establishment of a cap-and-trade GHG emissions trading market in Brazil may lead to the need for more planning by Cemig to meet market-regulations specific, especially concerning monitoring and verification emissions. To mitigate this risk, Cemig tries to identify projects that produce carbon credits and long-term contracts with verifying and certifying companies, thus reducing the likelihood of this risk for the Company becoming actual.

Besides, when assessing the acquisition of projects that use fossil fuels, Cemig makes internal analyzes on the carbon risk and its financial impact for the Company; that is, the financial risk of the project in a possible future pricing scenario for emissions of GHG in Brazil.

## PHYSICAL RISKS

The occurrence of intense rainfall in a short period, accompanied by windstorms and lightning, can cause physical damage to the facilities that convey and distribute energy, leading to interruptions in the power supply (DEC and FEC indicators) and an increase in Cemig's costs caused by reimbursements to consumers.

These phenomena are increasingly associated with the effects of an unfavorable microclimate, typical of large urban centers. Management methods seek to reduce the magnitude of this risk through in the medium term through preventive adaptation measures, such as the management of urban tree coverage through pruning, the operation of weather stations and a weather radar - which predicts the occurrence and intensity of storms more accurately - and an emergency plan with the allocation of maintenance teams for the speedy restoration of the power supply.

In addition to that, Cemig also carries out works on its distribution system (expansion, reinforcement, renovation, and upgrading of assets such as substations and distribution lines) through its PDD. The five-year investment cycle, as per the sector regulations, covers the period from 2018 to 2022, with an amount of over R\$ 6 billion having been approved for this period. In 2019, R\$ 971.3 million was invested.

## CHANGE IN THE RAINFALL PATTERN

Climate changes can cause alterations in seasonal rainfall patterns, causing more pronounced extreme rain and drought events, as well as changes in their geographic distribution. There may also be a change in the average amount of rainfall, thus altering the volume of water that gets to the plant reservoirs. As Cemig's electricity production comes basically from hydraulic sources, these changes may cause a decrease in its generation capacity.

The management of the hydrological risk is carried out considering the randomness of climatic phenomena, without taking the effects of climate changes into account. To that end, Cemig has a specific organizational structure, fully dedicated to the matter, which supports the company's risk management committees'

**161** - For more information, go to: [https://www.ccee.org.br/portal/faces/pages\\_publico/o-que-fazemos/como\\_ccee\\_atua/mre\\_contab?\\_afzLoop=236912776957443&\\_adf.ctrl-state=xdo0w65bu\\_14#!%40%40%3F\\_afzLoop%3D236912776957443%26\\_adf.ctrl-state%3Dxdo0w65bu\\_18](https://www.ccee.org.br/portal/faces/pages_publico/o-que-fazemos/como_ccee_atua/mre_contab?_afzLoop=236912776957443&_adf.ctrl-state=xdo0w65bu_14#!%40%40%3F_afzLoop%3D236912776957443%26_adf.ctrl-state%3Dxdo0w65bu_18).

decisions. The objective is to efficiently deal with corporate risks involving operational, commercial, financial, and regulatory aspects in the sectorial scenario of tariffs adjustment and hydrological restrictions.

Cemig also participates in the Energy Reallocation- MRE<sup>161</sup>, whose purpose is to share the hydrological risks of power plants in situations of high inflows and generation and that transfer power to plants in situations of low inflows and generation.

## CHANGES IN CONSUMER BEHAVIOR

High temperatures can cause an increase in power consumption and overload the power distribution system in the most critical regions of the state of Minas Gerais, which may lead to less availability of energy supply for consumers in these regions. That risk is managed by (i) diagnosing the electrical system for the need for expansion works, (ii) monitoring of operating conditions, and (iii) prioritization of works.

## OPPORTUNITIES

Among the opportunities to be taken advantage of, the entry into the shared energy market through distributed generation energy, cogeneration and energy storage, energy efficiency, management of street lighting and utilities, electric mobility, and services in the power bill stand out through the establishment of the wholly-owned subsidiary Cemig SIM. The company was formed with the expectation that 250 MW of installations will be carried out in the next 2 years.

Besides, Cemig invests in its R&D and innovation programs, which aim to position the Company among businesses in the sector capable of responding to new global trends and demands

on energy systems. It is through these programs that Cemig should explore the opportunities and challenges of the new business models in the segment.

Following a strategy based on Digitization, Decarbonization and Decentralization, topics such as electric mobility, renewable energies, user experience, data intelligence, distributed generation, energy storage, cybersecurity strategy, new business models, and talents for the digital age are the focus of projects prioritized by Cemig.

The entry into the distributed generation business, energy solutions and investments in R&D, and innovation are examples of opportunities for transition to a low-carbon economy and an energy-efficient economic system.



### 10.2

## CLIMATE STRATEGY



**[103-2:305]** Despite the characteristics of Cemig's electric matrix, which are predominantly renewable and have low emission of Greenhouse Gases - GHG, the senior leadership is engaged in defining strategies to reduce GHG emissions. This is made clear by their establishment of voluntary targets for **(i)** emission reduction, **(ii)** electricity consumption, and **(iii)** energy losses.

The objective is to identify all sources of GHG emissions, to verify opportunities for reduction and for improving processes, in addition to reinforcing and disseminating the concepts related to the topic - in an informative way - to make it accessible to its stakeholders, thus disseminating this knowledge.

Cemig's strategy for mitigating, adapting and disseminating the topic to society and its investors is explained in its Commitment to Climate Change (10 Climate initiatives), undertaken on December 1, 2011 by the Executive Board. The document lists the efforts and lines of action adopted by the Company, namely:

- Generation of energy using renewable sources;
- Establishment of the first Brazilian ESCO (energy service company) business certified in ISO 9001 and linked to an energy utility;
- Deployment of conservation and energy efficiency projects;
- Work in the business of natural gas;
- Investment in new energy sources;
- Integration of carbon risk into the technical and economic feasibility of new projects and acquisitions and mergers of assets;
- Assessment of the risks and opportunities in climate change;
- Improvement of process efficiency;
- Decrease of emissions in transportation;
- A technology and innovation program.

The main guidelines of Cemig's Climate Strategy are exemplified in the figure below.

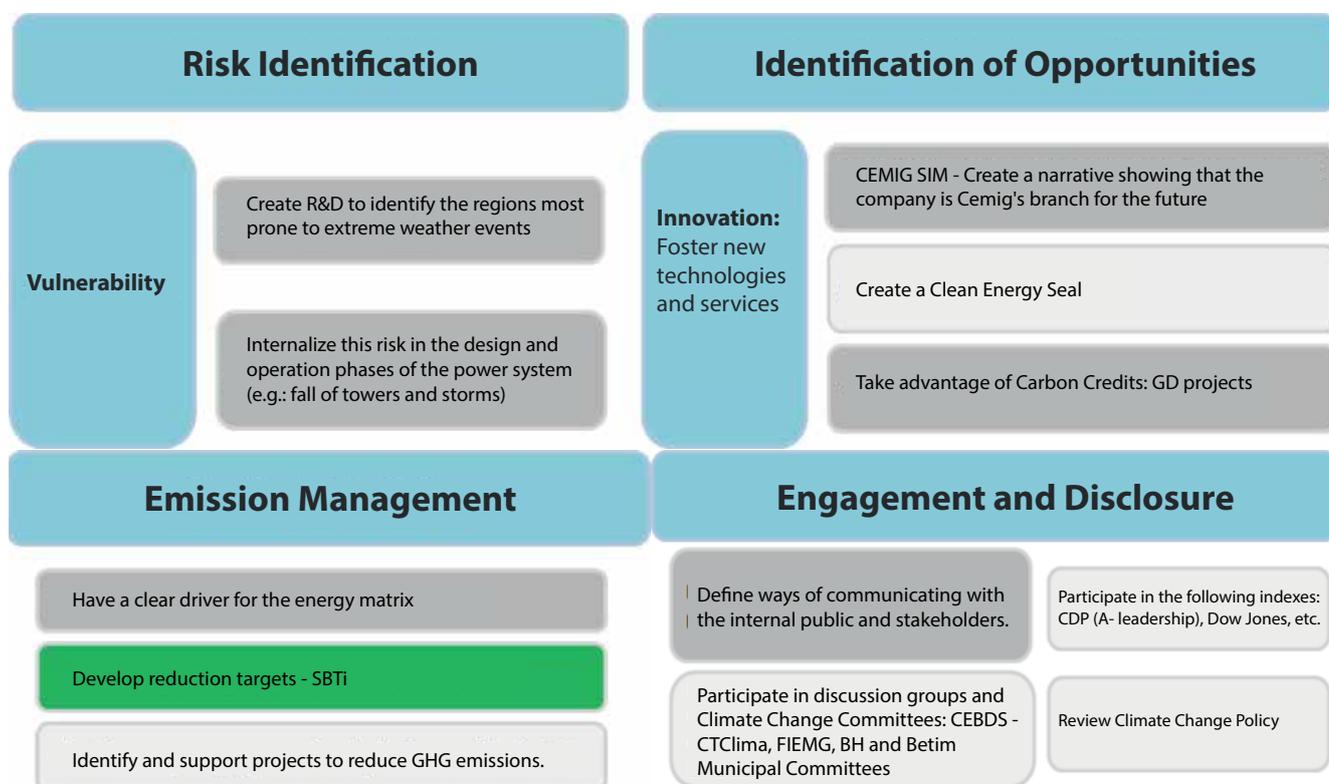


Figure 21: Cemig's Climate Strategy Guidelines

The objective of following the lines of action laid down in the Company's Commitment to Climate Change is to prepare Cemig for a low carbon economy, taking steps to align its businesses based on the assessment of climate risks and opportunities. The most relevant climate initiatives adopted in 2019 are in the scope of the Energy Efficiency Program and the creation of the Cemig SIM subsidiary.

The projects in the Energy Efficiency Program result in reductions in the consumption of electrical energy by end consumers thanks to the replacement of obsolete electrical equipment with a high level of consumption and environmental education initiatives. This way, the Program stands as a relevant instrument for reducing GHG emissions in Cemig's value chain. In 2019, these projects avoided the emission of more than 11 thousand tCO<sub>2</sub>e.

## CDM PROJECTS

Cemig has Clean Development Mechanism - CDM projects<sup>162</sup> that adopt an internal carbon price to analyze the feasibility of new projects. Cemig has projects in different stages to obtain the Reduced Emission Certificate - CER for hydroelectric plants (UHEs and PCHs) and solar

plants, as shown in the table below.

162 - Electric Sector GRI EU-05.

Project	Status	Annual CO <sub>2</sub> eq (t) reduction estimate	Credit Period	Credits Emitted	Traceability
SPC Guanhes (4 PCHs, 44 MW)	Recorded	62,949	Jan/13 to Jan/20 (Renewable)	-	<a href="http://cdm.unfccc.int/Projects/DB/RINA1280831660.48/view">http://cdm.unfccc.int/Projects/DB/RINA1280831660.48/view</a>
SHP Cachoeirão (27 MW)	Recorded	23,444	Feb/12 to Feb/19 (Renewable)	167	<a href="http://cdm.unfccc.int/Projects/DB/RINA1305214649.79/view">http://cdm.unfccc.int/Projects/DB/RINA1305214649.79/view</a>
Solar Settesolar (3 MW)	Recorded	942	Feb/13 to Feb/20 (Renewable)	-	<a href="http://cdm.unfccc.int/Projects/DB/RWTUV1356098187.07/view">http://cdm.unfccc.int/Projects/DB/RWTUV1356098187.07/view</a>
SHP Pipoca (20 MW)	Recorded	17,051	Dec/12 to Dec/19 (Renewable)	-	<a href="http://cdm.unfccc.int/Projects/DB/RINA1339141027.8/view">http://cdm.unfccc.int/Projects/DB/RINA1339141027.8/view</a>
SHP Paracambi (25 MW)	Recorded	33,993	Jul/14 to Jul/21 (Renewable)	-	<a href="http://cdm.unfccc.int/Projects/DB/RINA1392324439.94/view">http://cdm.unfccc.int/Projects/DB/RINA1392324439.94/view</a>
HPP Santo Antônio (3568 MW)	Recorded	4,015,196	Jan/13 to Dec/22 (Fixed)	1,057,929	<a href="http://cdm.unfccc.int/Projects/DB/PJR%20CDM1356613142.79/view">http://cdm.unfccc.int/Projects/DB/PJR%20CDM1356613142.79/view</a>

Table 56: MDL Projects

Cemig is not submitted to any legal requirement to reduce CO2 emissions; however, it has the following voluntary targets:

- Absolute target for scope 1 emissions (2017 being the base year and 2022, the target year), defined in 2018. The following criterion was established: maintain SF6 emission percentage<sup>163</sup> at a maximum of 0.6%; having the emission factor of the UHE Igarapé at a maximum of 0.88 tCO2/MWh (2017 factor); and reducing 10% of emissions from mobile sources against the 2017 amount.
- Scope 2 goal: Stay below the 11.7% rate in total energy losses (regulatory target established for the electricity sector), with 2018 being the base year and 2022, the target year. 4% reduction in electricity consumption, with 2011 being the base year and 2020, the target year

163 - Sulfur Hexafluoride.

## 10.3

# EXTERNAL INITIATIVES



In order to boost its efforts on climate issues and strengthen its image as an environmentally responsible company, and following its strategic pillars, Cemig participates in external initiatives that address the topic of climate change. The most relevant initiatives are presented below.

## CDP

Since 2007, Cemig answers to CDP, an international non-profit organization that provides a global environmental disclosure system. In its report, Cemig makes a rigorous survey of risks and opportunities for its businesses resulting from climate change and monitoring and control measures. CDP is considered a management tool for the Company, considering a scenario of growth in the level of information and consistent initiatives in carbon management.

In 2019, Cemig was listed among the leading companies in climate change management by the Climate Change Program, and, for the first time, it was included in the “A-List” of the Water Security Program for the quality of the information disclosed to investors and the global market. Recognition was granted by CDP Latin America.

This is the eighth consecutive year that CDP has awarded the Company. The selection took into account the level of detail in the responses regarding criteria such as risk management, commitment to mitigations, and initiatives to reduce greenhouse gas emissions. The best results point to a high level of transparency in

the disclosure of information related to the topic, providing investors with consistent content on climate change management and water security<sup>164</sup>.

164 - Cemig answers to CDP 2019 can be seen on the CDP website: [https://www.Cemig.com.br/pt-br/A\\_Cemig\\_e\\_o\\_Futuro/sustentabilidade/Documents/CDP/mudancas\\_climaticas\\_2019.pdf](https://www.Cemig.com.br/pt-br/A_Cemig_e_o_Futuro/sustentabilidade/Documents/CDP/mudancas_climaticas_2019.pdf).

## CDP BENCHMARK PROGRAM

In 2019, Cemig participated in the CDP Benchmark Club Program, which offers the opportunity for companies to deepen the discussion on risk and opportunity management, knowledge about the challenges of climate change, and water management. Workshops are held with the participating companies, where the best practices in climate management and water security are presented, making it possible to establish partnerships among the participating members.

Participation in this Program contributed to improving Cemig's performance in the Dow Jones Sustainability Index (in 2019, the Company the maximum score in climate strategy). With CDP's support efforts, it was possible to revise the goals for reducing greenhouse gas emissions and improve the description of risks and opportunities. Those points contributed to Cemig obtaining the maximum score.

This way, Cemig is preparing to act according to a possible carbon pricing system in Brazil.

## BRAZILIAN BUSINESS COUNCIL FOR SUSTAINABLE DEVELOPMENT (CEBDS)

In line with Cemig's standing on climate issues, the Company is affiliated to CEBDS, a non-profit civil association to foster initiatives based on the principles of sustainable development. It has a seat at the Thematic Chamber for Energy and Climate Change (CTClima) and is a member of that institution's Leaders Council.

At CTClima, Cemig participates in meetings, discussions, and debates aimed at the development and implementation of corporate solutions for mitigating and adapting to climate change. The Chamber also promotes a dialogue

between the public and private sectors to contribute to the development and improvement of public policies on the subject of climate change, energy efficiency, and renewable energies

## PARTICIPATION IN THEMATIC COMMITTEES

Cemig also engages directly with policymakers, through participation in legal discussion forums. At the municipal level, the Company acts on the Municipal Committees on Climate Change and Eco-efficiency (CMMCE) of the Belo Horizonte City Hall and the Betim City Hall. In these committees, public and private sectors meet to discuss and propose local policies for mitigation and adaptation to climate change.

### 10.4 EMISSIONS



**[103-3:305]** Cemig annually publishes its greenhouse gas emission inventory, which identifies its sources of emissions, quantifies the Company's total emissions, and monitors the progress of emissions over time.

The GHG emissions inventory is the management tool that allows for the assessment of an organization's impact on the global climate system. The results of the annual inventory are fundamental for **(i)** the effective management of the company's emissions, as it is the basis for the assessment of risks and opportunities

related to the climate; **(ii)** establishment of emission reduction targets; **(iii)** prioritization and monitoring of emissions mitigation actions; and **(iv)** participation in programs for disseminating climate management and comparing the Company's performance with other businesses in the sector.

To prepare the Inventory, the GHG sources and sinks associated with the Company's operations are identified by raking them into direct or indirect emissions, using the scope concept. Below, are the definitions for each of the 3 scopes adopted by the GHG Protocol.

- **Scope 1:** Direct GHG emissions from sources that are owned or controlled by the organization.
- **Scope 2:** Indirect GHG emissions from the purchase of electricity that is consumed by the organization.
- **Scope 3:** Optional reporting category that considers all other indirect emissions not covered by Scope 2. They are a consequence of the organization's activities, but they occur in sources that do not belong to or are not controlled by it.

The GHG Inventory is subjected to independent verification. Its reference data for calculating Scopes 1, 2, and 3 were collected based on a centralized approach with those responsible for their management, using the following means of verification:

- Existing records in Cemig's ERP1 system;
- Records in corporate operating and control systems;
- Invoices;
- Contracts;
- Registration spreadsheets.

**[305-1; 305-2; 305-3; 305-7]** In order to put together Cemig's GHG inventory for the year 2019, the NBR ISO 14064 standard and the specifications in the GHG Protocol were adopted as a reference. The emission factors and Global Warming Potential (GWP) values used were extracted from the IPCC (Intergovernmental Panel on Climate Change) assessment reports. For purposes of reporting on the GHG inventory, Cemig adopts the Operational Control approach, that is, it quantifies the emissions of companies that are 100% controlled by Cemig.

It should be noted that the areas responsible for the information are certified in internationally referenced management standards, such as NBR ISO 9001: 2008 and/or NBR ISO 14001: 2004 and SGA Level 12, which Cemig has developed for units whose license has not yet been issued

by the environmental agency. All of these certifications are audited internally and by a third-party certification body. Cemig's 2019 Emission Inventory was developed using CLIMAS®, a calculation software package developed by WayCarbon.

The 2019 Cemig Inventory considered CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and SF<sub>6</sub> emissions according to the mapped emission sources and data availability. Besides, the inventory also computed CO<sub>2</sub> emissions from renewable sources.

At Cemig, CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and SF<sub>6</sub> gases are generated by the following activities:

- CO<sub>2</sub>: generated by mobile and stationary sources burning fossil fuels (such as diesel, natural gas, kerosene, and liquefied petroleum gas). Also, there are CO<sub>2</sub> emissions related to waste treatment and the use of agricultural fertilizers;
- CH<sub>4</sub>: generated by mobile and stationary sources burning fuels, by fugitive emissions in natural gas distribution lines, and by the decomposition of organic matter in solid waste treatment processes;

- N2O: generated by mobile and stationary sources burning fossil fuels (such as diesel, natural gas, kerosene, and liquefied petroleum gas). Also, there are N2O emissions related to waste treatment and the use of agricultural fertilizers; and

- SF6: generated in the maintenance of energy transmission and distribution equipment, which use this gas as an insulator or to extinguish electrical arcs. In these maintenance actions, gas lost by fugitive emission is replaced.

Scope	Category	Issuance	Representativeness (%)
		(tCO2e)	
Scope 1	Stationary combustion	37,582.05	72.4%
	Mobile combustion	9,068.00	17.4%
	Fugitive emissions	5,239.42	10.1%
	Change in land use	49.16	0.1%
	Scope 1 Total	51,938.62	-
Scope 2	Power Consumption	3,153.68	0.5%
	T&D Losses	595,364.60	99.5%
	Scope 2 Total	598,518.28	-
Scope 3	Goods and services purchased	63.29	0.0%
	Employee commuting (home-work)	215.47	0.0%
	Waste generated in operations	619.47	0.0%
	Movement and distribution (downstream)	22,699.24	0.3%
	Movement and distribution (upstream)	790.63	0.0%
	Use of goods and services sold	6,426,649.39	99.6%
	Business trips	428.07	0.0%
	Scope 3 Total	6,451,465.56	-

**Table 19:** Total Cemig Emissions

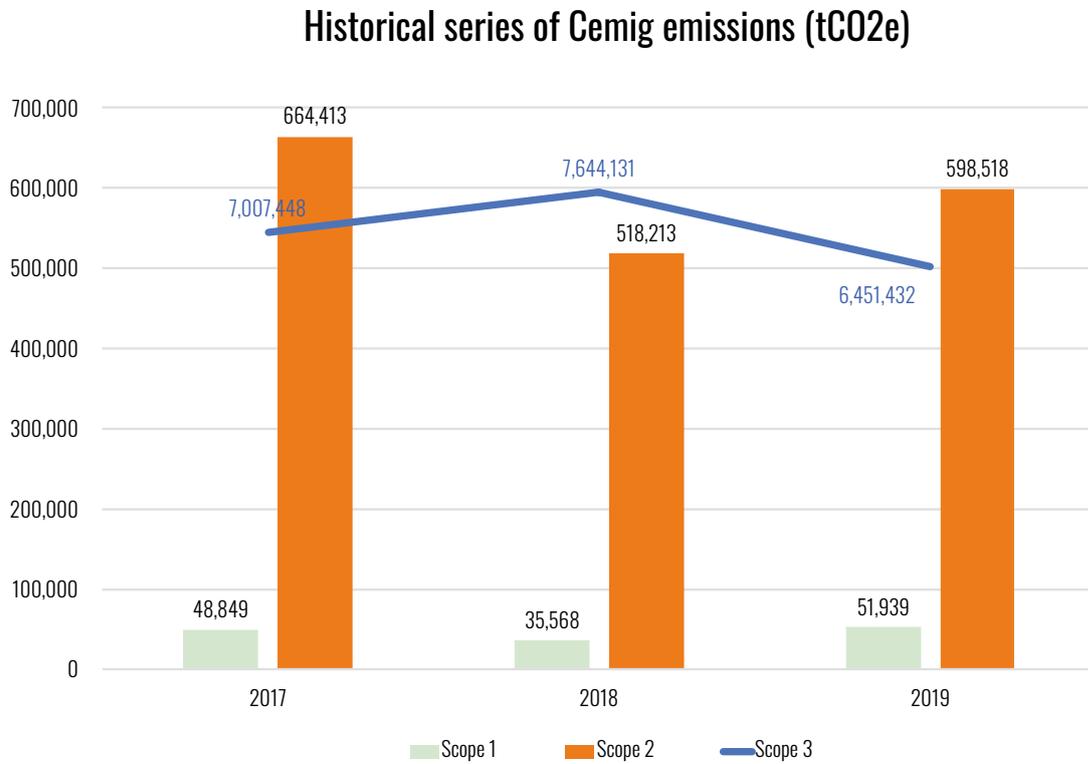
Cemig's Scopes 1, 2 and 3 emissions for 2019 were, respectively, 51,939 tCO<sub>2</sub>e, 598,518 tCO<sub>2</sub>e and 6,451,466 tCO<sub>2</sub>e. Also, 7,024 tCO<sub>2</sub> were emitted from renewable sources (1,677 tCO<sub>2</sub> renewable for Scope 1, and 5,347 tCO<sub>2</sub> renewable for Scope 3). Cemig's Scopes 1, 2 and 3 emissions for 2019 are detailed below:

### Greenhouse gas emissions in 2019 by scope (tCO<sub>2</sub>e)



Chart 22: Greenhouse gas emissions in 2019 by scope (tCO<sub>2</sub>e)

Putting the 2019 results in perspective, Scopes 1, 2, and 3 emissions for the past 3 years are given below:



**Chart 23:** Historical series of Cemig emissions (tCO2e)

**[305-1]** In 2019, Cemig's operations were responsible for the direct emission (Scope 1) of 51,938.62 tCO<sub>2</sub>, amounting to a 46.02% increase in relation to 2018, when Scope 1 emissions added up to 35,568.41 tCO<sub>2</sub>, thus accruing to a 91.59% decrease in relation to the base year (2014= 617,717 tCO<sub>2</sub>e).

Stationary combustion emissions made the largest contribution, compared to other Scope 1 categories, with the emission of 37,582.05 tCO<sub>2</sub>e. Within this category, fuel oil consumption at UTE Igarapé accounts for 37,210.91 tCO<sub>2</sub>e. In relation to 2018, this category showed a 75% increase in emissions. This happened in order to consume all the fuel oil in stock at the Plant, as it closed its operations in 2019.

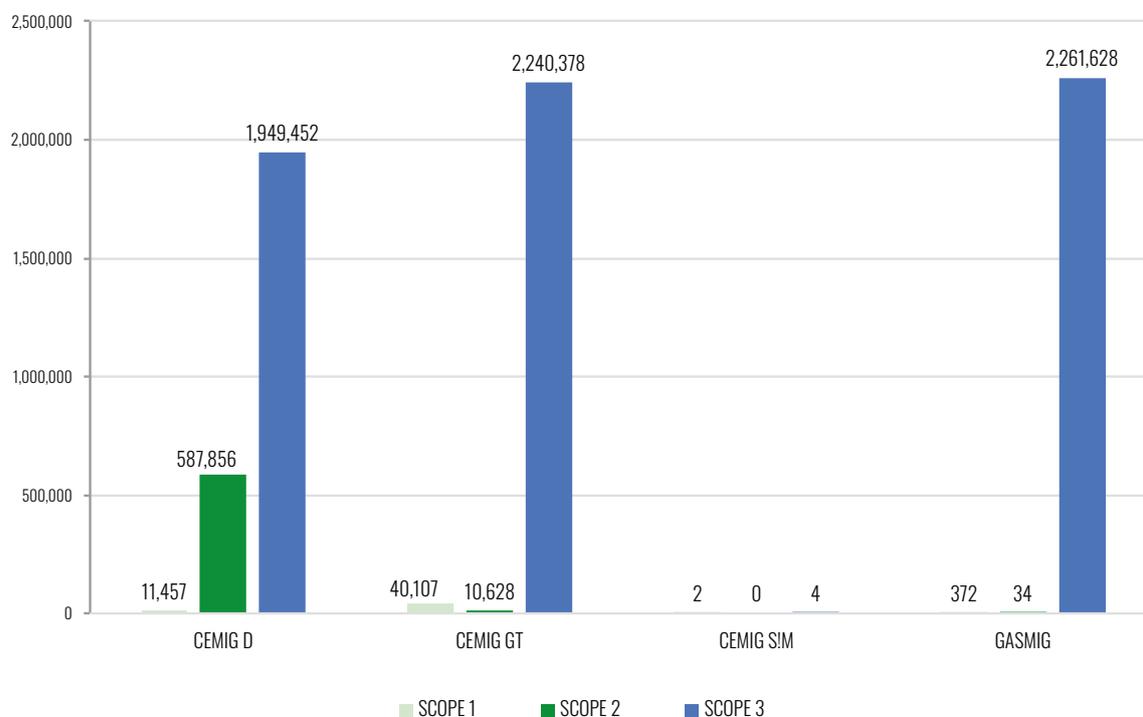
**[302-4; 305-2]** Indirect emissions relating to the acquisition of energy (Scope 2) in the year 2019 totaled 598,518.28 tCO<sub>2</sub>e, amounting to a 15.5% increase against the previous year (em 2018, 518.212,79 tCO<sub>2</sub>e), and an accrued reduction of 30,2% in relation to the base year (in 2014, 858,014 tCO<sub>2</sub>e).

In terms of Transmission and Distribution Losses (which amount to 99.5% of the Scope 2 emissions), there was an increase of about 15.5% in emissions against 2018 (515,145.95 tCO<sub>2</sub>e). This increase is largely due to the refining of data with greater monthly precision. There was also a 1.3% increase in the grid average emission factor against the previous year (0.0740 tCO<sub>2</sub>e/MWh in 2018 vs 0.0750 tCO<sub>2</sub>e/MWh em 2019).

**[305-4]** Cemig uses 2 indicators of emission intensity as a benchmark for its assessment of greenhouse gas emissions. The first relates total emissions in Scopes 1 and 2 to net operating revenues (tCO<sub>2</sub>e/R\$) and the second, to the net energy generation (tCO<sub>2</sub>e/MWh) in the year.

**[305-3]** ACemig's Scope 3 emissions in the year 2019 totaled 6,451,466 tCO<sub>2</sub>e, amounting to a 15.60% reduction in relation to the previous year (in 2018, 7,644,131 tCO<sub>2</sub>e) and a 43.07% reduction in relation to 2014 (11,332,770 tCO<sub>2</sub>e). Scope 3 emissions are mainly associated with the sale of energy and natural gas, which is pigeonholed as Use of goods and services sold. Emissions in this category make up nearly the total of Scope 3 emissions, amounting to 99.62% of the total.

### Emissions from Scopes 1, 2 and 3 by company (tCO<sub>2</sub>e)



**Chart 24:** GHG emissions by scope by company (tCO<sub>2</sub>e)

More information on GHG emissions at Cemig can be found in the 2019 GHG Emissions Inventory.<sup>165</sup>

165 - Available at: <[http://www.Cemig.com.br/pt-br/A\\_Cemig\\_e\\_o\\_Futuro/sustentabilidade/nossos\\_programas/mudancas\\_climaticas/Paginas/Inventarios-de-emissoes.aspx](http://www.Cemig.com.br/pt-br/A_Cemig_e_o_Futuro/sustentabilidade/nossos_programas/mudancas_climaticas/Paginas/Inventarios-de-emissoes.aspx)>

## OTHER EMISSIONS

[305-7] Cemig's operations are also responsible for the emission of air pollutants like sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), and particulate matter (PM). Total emissions for each of these pollutants are shown in the table below.

EMISSÕES TOTAIS (T)			
ANO	SO <sub>2</sub>	NO <sub>x</sub>	MP
2017	157	43	3.43
2018	113	29	2.18
2019	109	46	3.65

Table 20: Emissions of air pollutants

ANO	SO <sub>2</sub>	NO <sub>x</sub>	MP
2019	3.32	6.42	0.27

Table 21: Emission from Vehicle

ANO	SO <sub>2</sub>	NO <sub>x</sub>	MP
2019	105.52	39.72	3.38

Table 22: EEmission from UTE Igarapé

Emissions of sulfur dioxide (SO<sub>2</sub>) and nitrogen oxide (NO<sub>x</sub>) come from the burning of fuels at Igarapé thermal plant and by Company vehicles. Compared to 2018, there was a slight reduction in SO<sub>2</sub> emissions of 0.6%; however, NO<sub>x</sub> and PM emissions increased by 50.4% and 58.3%, respectively.

In 2019, UTE Igarapé operations emitted 3.38 tons of particulate matter, maintaining the 2018 emission standard<sup>166</sup>, when the Electrostatic Precipitator operation was successfully implemented. Vehicle emissions totaled 0.07 tons, 73.1% less than in 2018.

166 - In 2019, UTE Igarapé generated almost twice as much energy compared to 2018.

[305-6] Emissions of ozone-depleting substances (ODS) are not relevant for the Company.

# OTHER DATA

## 11

# GRI INDEX

Disclosure Code	Approach	GRI Standard Number	GRI Standard Title	Publication Year	Disclosure Description	Location in the Text - Section	Reasons for Omission
102-1	Essential	GRI 102	General Disclosures	2016	Organization name:	1 About This Report	
102-2	Essential	GRI 102	General Disclosures	2016	Activities, brands, products and services	2 Business Model	
102-3	Essential	GRI 102	General Disclosures	2016	Headquarters location	2 Business Model	
102-4	Essential	GRI 102	General Disclosures	2016	Operations location	2 Business Model	

102-5	Essential	GRI 102	General Disclosures	2016	Ownership and legal form	2 Business Model	
102-6	Essential	GRI 102	General Disclosures	2016	Markets serviced	4.1 Our Customers and Consumers	
102-7	Essential	GRI 102	General Disclosures	2016	Organization size	2.1 Operations; 5.1 Profile of Employees; 7.1 Major Financial Indicators	
102-8	Essential	GRI 102	General Disclosures	2016	Information on employees and other workers	5.1 Profile of Employees	
102-9	Essential	GRI 102	General Disclosures	2016	Supplier Chain	6.7 Main Monitoring Items and Indicators	
102-10	Essential	GRI 102	General Disclosures	2016	Significant changes in the organization and its supplier chain	2.1 Operations	

102-11	Essential	GRI 102	General Disclosures	2016	Precautionary principle or approach	2.2 Strategy	
102-12	Essential	GRI 102	General Disclosures	2016	External initiatives	1.4 Major Highlights	
102-13	Essential	GRI 102	General Disclosures	2016	Participation in associations	2.6 Sectoral Associations	
102-14	Essential	GRI 102	General Disclosures	2016	Statement by the seniormost decision-maker in the organization	1.1 Message from the Board	
102-15		GRI 102	General Disclosures	2016	Major impacts, risks and opportunities	3.3 Risk Management	
102-16	Essential	GRI 102	General Disclosures	2016	Values, principles, standards and behavior norms	3.2 Ethics and Transparency	
102-17		GRI 102	General Disclosures	2016	Advising mechanisms and ethical concerns	3.2 Ethics and Transparency	
102-18	Essential	GRI 102	General Disclosures	2016	Governance structure	3 Corporate Governance	

102-19		GRI 102	General Disclosures	2016	Assignment of authority	3.1 Governance Model and Main Practices	
102-20		GRI 102	General Disclosures	2016	Execution responsibility for economic, environmental and social matters	3.1 Governance Model and Main Practices	
102-21		GRI 102	General Disclosures	2016	Consulting to stakeholders on economic, environmental and social topics	1.2 Materiality	
102-22		GRI 102	General Disclosures	2016	Composition of the topmost governance body and its committees	3.1 Governance Model and Main Practices	
102-23		GRI 102	General Disclosures	2016	Chair of the topmost governance body	3.1 Governance Model and Main Practices	
102-24		GRI 102	General Disclosures	2016	Appointment and selection of the topmost governance body	3.1 Governance Model and Main Practices	
102-25		GRI 102	General Disclosures	2016	Conflicts of Interests	3.1 Governance Model and Main Practices	

102-26		GRI 102	General Disclosures	2016	Role of the topmost governance body in defining purpose, values, and strategy	2.2 Strategy 3.1 Governance Model and Main Practices	
102-27		GRI 102	General Disclosures	2016	Measures to improve the knowledge of the topmost governance body	3.1 Governance Model and Main Practices	
102-28		GRI 102	General Disclosures	2016	Assessment of the performance of the topmost governance body	3.1 Governance Model and Main Practices	
102-29		GRI 102	General Disclosures	2016	Identification and management of economic, environmental and social impacts	3.3 Risk Management	
102-30		GRI 102	General Disclosures	2016	Effectiveness of the risk management processes	3.3 Risk Management	
102-31		GRI 102	General Disclosures	2016	Analysis of economic, environmental and social topics	3.3 Risk Management	
102-32		GRI 102	General Disclosures	2016	Role of the topmost governance body in the sustainability report	-	Currently at Cemig, the Board of Directors has no role in the preparation and publication of RAS

102-33		GRI 102	General Disclosures	2016	Communication of critical issues	3.1 Governance Model and Main Practices	
102-34		GRI 102	General Disclosures	2016	Nature and the total number of critical concerns	3.1 Governance Model and Main Practices	
102-35		GRI 102	General Disclosures	2016	Remuneration policies	3.1 Governance Model and Main Practices	
102-36		GRI 102	General Disclosures	2016	Process to determine remuneration	5.2 Remuneration and benefits	
102-37		GRI 102	General Disclosures	2016	Engagement of stakeholders in remuneration	5.2 Remuneration and benefits	
102-38		GRI 102	General Disclosures	2016	Ratio of annual remuneration	5.2 Remuneration and benefits	
102-39		GRI 102	General Disclosures	2016	The ratio of the percentage increase in total annual remuneration	5.2 Remuneration and benefits	
102-40	Essential	GRI 102	General Disclosures	2016	List of stakeholders	1.2 Materiality	
102-41	Essential	GRI 102	General Disclosures	2016	Collective bargaining agreements	5.5 Labor and Union Practices	
102-42	Essential	GRI 102	General Disclosures	2016	Basis for the identification and selection of stakeholders for engagement	1.2 Materiality	

102-43	Essential	GRI 102	General Disclosures	2016	Approach to engage stakeholders	1.2 Materiality; 4.1 Our customers and consumers	
102-44	Essential	GRI 102	General Disclosures	2016	Main topics and concerns raised	1.2 Materiality	
102-45	Essential	GRI 102	General Disclosures	2016	Entities included in consolidated financial statements	7 Economic Performance	
102-46	Essential	GRI 102	General Disclosures	2016	Definition of the contents of the report and the limits fo the topics	1.2 Materiality	
102-47	Essential	GRI 102	General Disclosures	2016	List of material topics	1.2 Materiality	
102-48	Essential	GRI 102	General Disclosures	2016	Recasting of information	About This Report	
102-49	Essential	GRI 102	General Disclosures	2016	Changes in scope and limits	1.2 Materiality	
102-50	Essential	GRI 102	General Disclosures	2016	Period covered by this report	About This Report	
102-51	Essential	GRI 102	General Disclosures	2016	Date of latest report	About This Report	
102-52	Essential	GRI 102	General Disclosures	2016	Report issuance cycle	About This Report	

102-53	Essential	GRI 102	General Disclosures	2016	Contact point for questions about the report	About This Report	
102-54	Essential	GRI 102	General Disclosures	2016	Statement on the report preparation according to the GRI Standards	About This Report	
102-55	Essential	GRI 102	General Disclosures	2016	GRI content index	11 GRI Index	
102-56	Essential	GRI 102	General Disclosures	2016	External verification	About This Report	
103-1:201	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Economic Performance	1.2 Materiality	
103-2:201	Essential	GRI 103	Form of Management	2016	Form of management and its components: Economic Performance	7 Economic Performance	
103-3:201	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Economic Performance	7 Economic Performance	

201-1		GRI 201	Economic Performance	2016	Direct economic value generated and distributed.	7.1 Major Financial Indicators; 8.3 Corporate citizenship and social investments	
201-2		GRI 201	Economic Performance	2016	Financial implications and other risks and opportunities arising from climate changes	10.1 Risks and opportunities arising from climate change	
201-3		GRI 201	Economic Performance	2016	Obligations in the defined benefit plan and other superannuation plans	5.2 Remuneration and benefits	
201-4		GRI 201	Economic Performance	2016	Financial assistance received from the government	7 Economic Performance	
202-1		GRI 202	Market Footprint	2016	Proportion of the lowest salary paid by gender, compared to the local minimum wage	5.2 Remuneration and benefits	
202-2		GRI 202	Market Footprint	2016	Proportion of senior management members hired from the local community	3.1 Governance model and main practices	

103-1:203	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Indirect Economic Impacts	1.2 Materiality	
103-2:203	Essential	GRI 103	Form of Management	2016	Form of management and its components: Indirect Economic Impacts	2.3 Innovation and technological development	
103-3:203	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Indirect Economic Impacts	2.3 Innovation and technological development	
203-1		GRI 203	Indirect Economic Impacts	2016	Investments in infrastructure and services provided	7.3 Investments in generation, transmission and distribution; 8.3 Corporate citizenship and social investments	
204-1		GRI 204	Procurement Practices	2016	Proportion of expenditures with local suppliers	6.1 Main monitoring items and indicators	
103-1:205	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Anti-corruption	1.2 Materiality	

103-2:205	Essential	GRI 103	Form of Management	2016	Form of management and its components: Anti-corruption	3.2 Ethics and Transparency	
103-3:205	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Anti-corruption	3.2 Ethics and Transparency	
205-1		GRI 205	Anti-corruption	2016	Operations assessed for risks related to corruption	3.2 Ethics and Transparency	
205-2		GRI 205	Anti-corruption	2016	Confirmed corruption cases and actions taken	3.2 Ethics and Transparency	
205-3		GRI 205	Anti-corruption	2016	Confirmed corruption cases and actions taken	3.2 Ethics and Transparency	
206-1		GRI 206	Unfair Competition	2016	Lawsuits for unfair competition, the practice of trust, and monopoly	3.2 Ethics and Transparency	
301-1		GRI 301	Materials	2016	Materials used by weight or volume	9.2 Resource Management	
301-2		GRI 301	Materials	2016	Materials from recycling	9.2 Resource Management	

301-3		GRI 301	Materials	2016	Recovered products and their packaging materials	Not applicable	Cemig has no products or packaging
103-1:302	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Energy	1.2 Materiality	
103-2:302	Essential	GRI 103	Form of Management	2016	Form of management and its components: Energy	9 Environmental performance	
103-3:302	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Energy	9 Environmental performance	
302-1		GRI 302	Energy	2016	Power consumption within the organization	9.2 Resource Management	
302-2		GRI 302	Energy	2016	Power consumption outside the organization	9.2 Resource Management	
302-3		GRI 302	Energy	2016	Energy intensity		Cemig is reassessing the assumptions of this indicator
302-4		GRI 302	Energy	2016	Decrease in energy consumption	9.2 Resource Management 10.4 Emissions	
303-1		GRI 303	Water	2016	Water consumption by source	9.2 Resource Management	

303-2		GRI 303	Water	2016	Water sources significantly affected by the removal of water	9.2 Resource Management	
303-3		GRI 303	Water	2016	Recycled and reused water	9.2 Resource Management	
103-1:304	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Biodiversity	1.2 Materiality	
103-2:304	Essential	GRI 103	Form of Management	2016	Form of management and its components: Biodiversity	9 Environmental performance; 9.4 Biodiversity	
103-3:304	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Biodiversity	9 Environmental performance; 9.1 Environmental management	
304-1		GRI 304	Biodiversity	2016	Operational units that are owned, leased, managed within or nearby protected areas and areas with a high biodiversity value located outside protected areas	9.4 Biodiversity	
304-2		GRI 304	Biodiversity	2016	Significant impacts of activities, products, and services on biodiversity	9.1 Environmental management; 9.4 Biodiversity	

304-3		GRI 304	Biodiversity	2016	Protected or restored habitats	9.4 Biodiversity	
304-4		GRI 304	Biodiversity	2016	Species included in the IUCN redlist and in domestic conservation lists with habitats in areas affected by operations from the organization	9.4 Biodiversity	
103-1:305	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Emissions	1.2 Materiality	
103-2:305	Essential	GRI 103	Form of Management	2016	Form of management and its components: Emissions	9 Environmental performance; 10.2 Climate strategy	
103-3:305	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Emissions	9 Environmental performance; 10.4 Emissions	
305-1		GRI 305	Emissions	2016	Direct emissions of greenhouse gases (Scope 1)	10.4 Emissions	
305-2		GRI 305	Emissions	2016	Indirect emissions of greenhouse gases from the acquisition of energy (Scope 2)	10.4 Emissions	
305-3		GRI 305	Emissions	2016	Other indirect GHG emissions (Scope 3)	10.4 Emissions	

305-4		GRI 305	Emissions	2016	GHG emission intensity	10.4 Emissions	
305-5		GRI 305	Emissions	2016	GHG emission reduction	10.4 Emissions	
305-6		GRI 305	Emissions	2016	Emission of ozone-depleting substances (SDO)	10.4 Emissions	
305-7		GRI 305	Emissions	2016	NOx and SOx emissions and other significant atmospheric emissions	9.4 Biodiversity; 10.4 Emissions	
306-1		GRI 306	Effluents and Waste	2016	Disposal of water by quality and destination	9.2 Resource management	
306-2		GRI 306	Effluents and Waste	2016	Waste by disposal type and method	9.2 Resource management	
306-3		GRI 306	Effluents and Waste	2016	Significant leaks	9.2 Resource management	
306-4		GRI 306	Effluents and Waste	2016	Transportation of hazardous waste	9.2 Resource management	

306-5		GRI 306	Effluents and Waste	2016	Streams affected by water disposal and drainage	9.2 Resource management	
103-1:307	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Environmental Compliance	1.2 Materiality	
103-2:307	Essential	GRI 103	Form of Management	2016	Form of management and its components: Environmental Compliance	9 Environmental performance; 9.1 Environmental management	
103-3:307	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Environmental Compliance	9.1 Environmental management	
307-1		GRI 307	Environmental Compliance	2016	Non-conformity with environmental laws and regulations	9.1 Environmental management	
103-1:308	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Environmental Supplier Assessment	1.2 Materiality	
103-2:308	Essential	GRI 103	Form of Management	2016	Form of management and its components: Environmental Supplier Assessment	6.3 Identification and management of environmental and social impacts	

103-3:308	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Environmental Supplier Assessment	6.3 Identification and management of environmental and social impacts	
308-1		GRI 308	Environmental Supplier Assessment	2016	New suppliers selected based on environmental criteria	6 Suppliers	
308-2		GRI 308	Environmental Supplier Assessment	2016	Negative environmental impacts in the supplier chain and actions taken	6.3 Identification and management of environmental and social impacts	
103-1:401	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Employment	1.2 Materiality	
103-2:401	Essential	GRI 103	Form of Management	2016	Form of management and its components: Employment	5 Employees	
103-3:401	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Employment	5 Employees	
401-1		GRI 401	Employment	2016	New hiring of employees and employee turnover	5.1 Profile of employees;	
						5.2 Remuneration and benefits	

401-2		GRI 401	Employment	2016	Benefits for full-time employees that are not offered to temporary or part-time employees	5.2 Remuneration and benefits	
401-3		GRI 401	Employment	2016	Paid maternity/ paternity leave	5.2 Remuneration and benefits	
402-1		GRI 402	Labor Relations	2016	Minimum term for operational change notifications	5.5 Labor and union practices	
403-1		GRI 403	Labor Health and Safety	2016	Representation of workers in formal health and safety committees	5.6 Work safety, occupational health and well-being	
403-2		GRI 403	Labor Health and Safety	2016	Kinds and rates of injuries, occupational diseases, lost days, absenteeism and number of work-related deaths	5.6 Work safety, occupational health and well-being	
403-3		GRI 403	Labor Health and Safety	2016	Workers with a high rate of high risk of diseases related to their occupation	5.6 Work safety, occupational health and well-being	
403-4		GRI 403	Labor Health and Safety	2016	Health and safety topics covered by formal agreements with unions	5.6 Work safety, occupational health and well-being	

103-1:404	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Training and Education	1.2 Materiality	
103-2:404	Essential	GRI 103	Form of Management	2016	Form of management and its components: Training and Education	5.4 Performance of performance	
103-3:404	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Training and Education	5.4 Performance of performance	
404-1		GRI 404	Training and Education	2016	Average training hours per year per employee	5.4 Performance management	
404-2		GRI 404	Training and Education	2016	Programs for developing employees' skills and for supporting their career transition	5.2 Remuneration and benefits; 5.4 Performance management	
404-3		GRI 404	Training and Education	2016	Percentage of employees that regularly get performance and career development assessments	5.4 Performance management	

103-1:405	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Diversity and Equal Opportunities	1.2 Materiality	
103-2:405	Essential	GRI 103	Form of Management	2016	Form of management and its components: Diversity and Equal Opportunities	5.3 Diversity and human rights	
103-3:405	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Diversity and Equal Opportunities	5.3 Diversity and human rights	
405-1		GRI 405	Diversity and Equal Opportunities	2016	Diversity in governance bodies and among employees	5.1 Profile of employees	
405-2		GRI 405	Diversity and Equal Opportunities	2016	Mathematical ratio between base salary and remuneration of women in relation to men	5.3 Diversity and human rights	
406-1		GRI 406	Non-discrimination	2016	Cases of discrimination and corrective measures adopted	5.3 Diversity and human rights	

407-1		GRI 407	Freedom of Association and Collective Bargaining	2016	Operations and suppliers where the right to freedom of association and collective bargaining may be at risk	5.5 Labor and union practices; 6.4 Environmental and social performance of suppliers	
408-1		GRI 408	Child labor	2016	Operations and suppliers with a significant risk of child labor cases	6.4 Environmental and social performance of suppliers	
409-1		GRI 409	Forced or Slavery-Like Labor	2016	Operations and suppliers with a significant risk of forced or compulsory labor cases	6.4 Environmental and social performance of suppliers	
410-1		GRI 410	Safety Practices	2016	Safety staff trained in human right policies or procedures	5.3 Diversity and human rights	
103-1:412	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Human Rights Assessment	1.2 Materiality	
103-2:412	Essential	GRI 103	Form of Management	2016	Form of management and its components: Human Rights Assessment	5.3 Diversity and human rights	
103-3:412	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Human Rights Assessment	5.3 Diversity and human rights	

412-1		GRI 412	Human Rights Assessment	2016	Operations submitted to analysis or assessment of their impact on human rights	5.3 Diversity and human rights	
412-2		GRI 412	Human Rights Assessment	2016	Employee training in human right policies or procedures	5.3 Diversity and human rights	
412-3		GRI 412	Human Rights Assessment	2016	Significant investment agreements and contracts including clauses on human rights or that were submitted to human right assessment	5.3 Diversity and human rights	
103-1:413	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Local Communities	1.2 Materiality	
103-2:413	Essential	GRI 103	Form of Management	2016	Form of management and its components: Local Communities	8.1 Relationship with the community; 8.2 Territory management	
103-3:413	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Local Communities	8.1 Relationship with the community	
413-1		GRI 413	Local Communities	2016	Operations involving engagement, impact assessments, and development programs of the local community	8.2 Territory management	

413-2		GRI 413	Local Communities	2016	Operations with significant actual or potential negative impacts on local communities	8.2 Territory management	
103-1:414	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Social Assessment of Suppliers	1.2 Materiality	
103-2:414	Essential	GRI 103	Form of Management	2016	Form of management and its components: Social Assessment of Suppliers	6.3 Identification and management of environmental and social impacts	
103-3:414	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Social Assessment of Suppliers	6.3 Identification and management of environmental and social impacts	
414-1		GRI 414	Social Assessment of Suppliers	2016	New suppliers selected based on social criteria	6 Suppliers	
414-2		GRI 414	Social Assessment of Suppliers	2016	Negative social impacts in the supplier chain and measures taken	6.4 Environmental and social performance of suppliers	
415-1		GRI 415	Public Policies	2016	Policy contributions	2.6 Sectoral Associations	
103-1:416	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Customer Health and Safety	1.2 Materiality (page 14)	

103-2:416	Essential	GRI 103	Form of Management	2016	Form of management and its components: Customer Health and Safety	4.4 Safe use of energy	
103-3:416	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Customer Health and Safety	4.4 Safe use of energy	
416-1		GRI 416	Customer Health and Safety	2016	Assessment of health and safety impacts on product and service categories	4.4 Safe use of energy; 5.3 Diversity and human rights	
416-2		GRI 416	Customer Health and Safety	2016	Cases of non-conformity relating to health and safety impacts on product and service categories	4.4 Safe use of energy	
417-1		GRI 417	Marketing and Labeling	2016	Requirements for product and service information and labeling	4.4 Safe use of energy	
417-2		GRI 417	Marketing and Labeling	2016	Cases of non-conformity regarding product and service information and labeling	4.4 Safe use of energy	
417-3		GRI 417	Marketing and Labeling	2016	Cases of non-conformity regarding marketing communications	4.4 Safe use of energy	

103-1:418	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limits	1.2 Materiality	
103-2:418	Essential	GRI 103	Form of Management	2016	Form of management and its components	4.7 Information security	
103-3:418	Essential	GRI 103	Form of Management	2016	Assessment of the form of management	4.7 Information security	
418-1		GRI 418	Customer Privacy	2016	Proven complaints relating to privacy violations and customer data loss	4.7 Information security	
103-1:419	Essential	GRI 103	Form of Management	2016	Explanation of the material topic and its limit: Socio-economic compliance	1.2 Materiality	
103-2:419	Essential	GRI 103	Form of Management	2016	Form of management and its components: Socio-economic compliance	3.2 Ethics and Transparency	
103-3:419	Essential	GRI 103	Form of Management	2016	Assessment of the form of management: Socio-economic compliance	3.2 Ethics and Transparency	
419-1		GRI 419	Socio-economic compliance	2016	Non-compliance with laws and regulations from the social and economic areas		

# 12

## ASSURANCE STATEMENT – BUREAU VERITAS



### INTRODUCTION

Bureau Veritas Certification Brazil ('Bureau Veritas') was engaged by Companhia Energética de Minas Gerais S.A. (CEMIG) to conduct an independent assurance of its Annual Report for the year 2019 (hereinafter referred to as the Report).

This assessment was conducted by a multidisciplinary staff with expertise in non-financial data.

### SCOPE OF WORK

The scope of this verification encompassed the Standards and Principles<sup>1</sup> of the Global Reporting InitiativeTMGRI for Sustainability Reports, including the Electric Utility Sector Supplement, for the period from 1 January to 31 December 2019.

### CEMIG'S AND BUREAU VERITAS RESPONSIBILITIES

The collection, calculation and presentation of the data published in the report are CEMIG's management sole responsibility. Bureau Veritas is responsible for providing an independent opinion to the Stakeholders, pursuant to the scope of work defined in this declaration.

1 - Materiality, Stakeholder Inclusiveness, Sustainability Context, Completeness, Balance, Comparability, Accuracy, Periodicity, Clarity, and Reliability



## METHODOLOGY

The Assurance covered the following activities:

1. Interviews with the personnel responsible for material issues and involved in the Report content;
2. Review of documentary evidence provided by CEMIG in relation to the reporting period (2019);
3. Evaluation of the systems used for data compilation;
4. Analysis of CEMIG's stakeholder engagement activities; and
5. Evaluation of the method used to define material issues included in the Report, taking into account the sustainability context and the scope of the information published.

The level of verification adopted was Limited, according to the requirements of the ISAE 3000 Standard<sup>2</sup>, which were incorporated to the internal assessment protocols of Bureau Veritas.

## LIMITATIONS AND EXCLUSIONS

Excluded from the scope of this work was any assessment of information related to:

- Activities outside the defined assessment period;

2 - International Standard on Assurance Engagements 3000 – Assurance Engagements other than Audits or Reviews of Historical Financial Information.

BUREAU VERITAS CERTIFICATION



- Statements of position (expressions of opinion, beliefs, goals, or future intentions) on the part of CEMIG;
- Economic and financial information contained in this Report which has been taken from financial statements verified by independent financial auditors;
- The principles of Accuracy and Reliability were limited to data samples related to material aspects published within the Report;

The following limitations apply for this assurance engagement:

- Economic and financial data presented within the report were assessed against the GRI reporting principle of Balance;
- Although we verified the energy and emissions indicators, we did not deliver assurance of the Inventory of Green Gas (GHG) emissions.

## TECHNICAL OPINION

- CEMIG presents its Report based on 15 material themes, updated through a materiality test carried out in 2019. In our understanding, the themes resulting from this exercise, reflect the impacts of CEMIG's activities in a balanced way;
- CEMIG reported its performance in relation to sustainability goals, allowing an objective analysis by the reader. However, we noted that several of these goals were not strategically supported by the company's top management;
- We observed that some quantitative sustainability goals were formed by absolute indicators, such as water consumption. The absolute metric does not allow the efficiency analysis of the Company's processes, which would be possible with the establishment of relative indicators, associated with energy production, for example;
- We evidenced that CEMIG submitted its inventory of greenhouse gas (GHG) emissions to independent assurance. The published data on energy and emissions indicators (GRI 302 and 305 respectively) were extracted from this inventory;

BUREAU VERITAS CERTIFICATION



- During the Verification process, some inconsistencies found in the reporting data, in relation to one or more Principles of the GRI Standard, were satisfactorily corrected;
- It is our understanding that sufficient indicators were reported, including those from the Electric Utility Sector Supplement, to achieve the Core option of the GRI Standard for Sustainability Reports.

## RECOMMENDATIONS

- Establish sustainability goals at a strategic level in the Company;
- Prioritize the establishment of sustainability goals associated with relative indicators (which demonstrate process efficiency), instead of absolute indicators, whenever relevant.

## CONCLUSION

As a result of our assurance nothing has come to our attention that would indicate that:

- The information presented in the Report is not balanced, consistent and reliable;
- CEMIG has not established appropriate systems for the collection, aggregation and analysis of quantitative and qualitative data used in the Report;
- The Report does not adhere to the Principles for defining report content and quality of the GRI Standards and does not meet its Core level.

## DECLARATION OF INDEPENDENCE AND IMPARTIALITY

Bureau Veritas Certification is an independent professional services firm specializing in Quality, Health, Safety, Social and Environmental Management, with more than 185 years' experience in independent assessment.

BUREAU VERITAS CERTIFICATION



Bureau Veritas has a quality management system that is certified by a third party, according to which policies and documented procedures are maintained for the compliance with ethic, professional and legal requirements.

The assessment team has no links with CEMIG and the assessment is performed independently.

Bureau Veritas implemented and follows a Code of Ethics throughout its business, in order to assure that its staff preserve high ethical, integrity, objectivity, confidentiality and competence/ professional attitude standards in the performance of their activities. At the end of the assessment, a detailed report was drawn up, ensuring traceability of the process. This Report is kept as a Bureau Veritas management system record.

## CONTACT

Bureau Veritas Certification is available for further clarification on [www.bureauveritascertification.com.br/faleconosco.asp](http://www.bureauveritascertification.com.br/faleconosco.asp) or by telephone (55 11) 2655-9000.

São Paulo, Brazil, April 2020



Alexander Vervuurt

Lead Auditor; Assurance Sustainability Reports (ASR)  
Bureau Veritas Certification – Brazil