

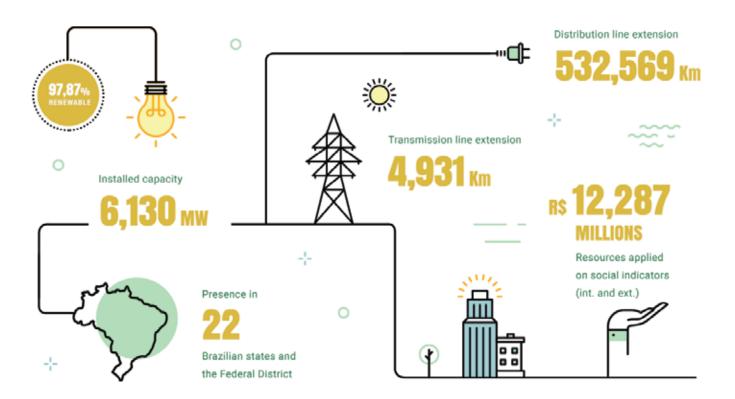
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# 1. MAIN INDICATORS



The financial data (Economic Dimension in BRL) are consolidated according to the IFRS standard. The other data refer to the holding company Cemig - Companhia Energética de Minas Gerais S.A., and to its wholly-owned subsidiaries:

Cemig Distribuição S.A. (Cemig D), and Cemig Geração e Transmissão S.A. (Cemig GT), according to the Global Reporting Initiative methodology - GRI<sup>1</sup>.

		Year		
General Data	2016	2017	2018	
Number of consumers - in thousands <sup>2</sup>	8,260	8,339	8,408	
Number of Employees (401-1)	7,119	5,864	6,083	
Number of municipalities served	774	774	774	
Concession area - km <sup>23</sup>	567,478	567,478	567,740	
FEC - number of interruptions (EU28)	5.64	5.44	5.06	
DEC - hours (EU29)	11.73	10.83	10.05	
Number of power plants under operation <sup>4</sup>	121	117	87	
Installed capacity - MW (EU1) <sup>5</sup>	8,201	5,727	6,070	
Extension of transmission lines - km (EU4) <sup>6</sup>	8,341	6,673	4,930	

Total extension of distribution networks - km (EU4)	498,627	512,572	536,569
Urban extension of distribution networks - km (EU4)	102,301	107,099	108,576
Rural extension of distribution networks - km (EU4)	396,326	405,473	410,486

		Year	
Environmental Dimension	2016	2017	2018
Resources invested in the environment - BRL million <sup>7</sup>	52.1	37.5	47.8
Fleet Fuel consumption (GJ) <sup>8</sup>	160,084	152,166	139,114
Installed capacity free of GHG emissions (%)	98.2	98.2	97.8
Total water consumption - m³ (303-1) 9	371,782	363,756	266,618
Direct CO2 emissions - metric tons (305-1)	15,462	48,849	35,613
Investments in environment R&D (Million BRL)	2,9	1,1	4,3

	Year		
Social Dimension	2016	2017	2018
Average hours of training per employee (404-2)	20.56	35.52	37.88
Total resources invested in internal and external social indicators - BRL million 10	10,756	10,565	12,287
Accident frequency rate - own employees (403-3) 11	1,70	2,00	0,99
Accident frequency rate - contracted employees (403-3) 11	1,84	1,20	1,57

102-7 102-7 102-7 102-7

- <sup>1</sup> For more information on the GRI methodology, please refer to the website: www.globalreporting.org.
- <sup>2</sup> The chart with the number of consumers per category is described in item 8.1 Market Evolution.
- <sup>3</sup> Includes changes in previous years, reflecting the concession area only of Cemig Distribuição.
- <sup>4</sup> Cemig numbers.
- <sup>5</sup> Consolidated Cemig numbers, including proportionally the holdings in subsidiaries/affiliates, contemplating changes in previous years to be compatible with the new criterion.
- <sup>7</sup> Sum of Applied Environmental Resources destined to Operation and Maintenance.
- 8 The values for fuel consumption between 2013 and 2015 were recalculated considering the fleet of vehicles, the fleet of boats and aircrafts of Cemig.
- <sup>9</sup> Sum of water consumption for administrative and industrial purposes.
- <sup>10</sup> Social Balance according to Standardized Financial Statements.
- 11 Number of accidents with injury, with work leave, per 200,000 hours worked.



# 2. ABOUT THIS REPORT

## 2.1 INTRODUCTION

102-1

Cemig, Companhia Energética de Minas Gerais, presents its Annual Sustainability Report - RAS 2018, which disclose sustainability strategies and actions adopted by the Company, as well as its performance in environmental, economic and social aspects in 2018.

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RAS is a document published by Cemig annually and RAS 2018 refers to the period from January to December 2018. The information contained herein encompasses the entire corporation, designated to support stakeholder understanding and provide relevant information about Cemig's activities and performance in environmental, economic, social, and governance aspects. RAS preparation process supports the management of these aspects, allowing Cemig's different areas to gather information and data that demonstrate the evolution of performance and metrics under its responsibility, as well to analyze facts that have influenced the company's performance in the period.

#### 102-56

As a guarantee of the quality and content of the information presented herein, Cemig's executive board requested an independent external verification of the entire report. The verification process of the report was carried out by SGS do Brasil based on the following methodologies: Verification of the Application of the Principles for Sustainability Report-

ing Global Reporting Initiative - GRI Standards and *Electric Utility Sector Supplement*<sup>1</sup>, in addition to the validation of indicators of UN Global Compact. This external verification included the selection of content presented, the review of material priority themes for Cemig, as well as the assessment of the accuracy and veracity of the information included in the report. The result of this work is in the Assurance Statement (assurance or guarantee) issued by SGS do Brasil, attached at the end of this report.

All the accounting data disclosed in this report have also been previously audited. The audit of this data was done by Ernst & Young (EY) under the Company's Financial Statements, which are generally presented in thousands of Brazilian Reais - BRL - (except where otherwise indicated) in the International Financial Reporting Standards (IFRS) standard and are available on Cemig's website. The financial information audit report can be viewed in here.

Also, all information regarding greenhouse gas (GHG) emissions reported was audited by Bureau Veritas under Cemig 2018 GHG Emissions Inventory. The inventory information audit report can be viewed in here.

Unlike RAS 2017, the last report published by the company, RAS 2018 was prepared in accordance with the GRI Standards (Core option), and meets the following assumptions:

#### 102-51 102-54

- Full adoption of the GRI Standards, standard for the disclosure of corporate sustainability reports.
- Dissemination of a report ensuring continuity and comparability of data and information presented in previous reports: progress in fulfilling the Ten Principles of the UN Global Compact and included information of the Sector Supplement GRI for the Electric Sector (G3).

In order to produce the Sustainability Report, the Company was inspired by the value-creation approach proposed by the integrated reporting guidelines of the International Integrated Reporting Council - IIRC, including the value generation diagram, which presents the capitals considered and the impacts generated by its performance. Information is also presented on the internal integration of the Company's programs and projects, and indicates which initiatives contribute to the UN Sustainable Development Goals.

<sup>&</sup>lt;sup>1</sup> This report uses as reference the indicators of the Energy Sector Supplement GRI G3 (EU-G3), last version made available by GRI in Portuguese. The GRI Standards still do not have updated Sector Supplements. However, Cemig chose to maintain the reporting of this information because it is relevant to the industry and its stakeholders. This information is accompanied by a footnote referring to the EU-G3 indicators.

#### 102-12

Cemig is a signatory, supporter and participant of different national and international initiatives, with the objective of reinforcing its commitment and contribution to sustainable development, guiding the practices of its managers, tax advisers, employees, trainees, contractors and subcontractors, partners, suppliers and service providers. The following voluntary commitments stand out:

- Since 2007, Cemig is a participating company of CDP;
- Since 2009, Cemig is a signatory to the letter of adhesion to the UN Global Compact;
- Since 2017, Cemig has been a signatory to Business Pact for Integrity and Against Corruption, of Ethos Institute.

In 2018, there was no adherence to new formal voluntary commitments.

#### 102-48

The information and data from previous reports that have been revised or changed are indicated in this report. The indication of change includes the reason for reformulation of the information (change by changes in the base period or base year or measurement method, resulting from changes in the company by mergers and/or acquisitions).

#### 102-53

Doubts about this report can be sent via email to the Corporate Sustainability Management (sustentabilidade@cemig.com.br) or to the Investor Relations Management (ri@cemig.com.br).

## 2.2 BOUNDARIES OF THE REPORT AND MATERIALITY

#### 102-45

The accounting data presented in this report refers to a group of companies in which Cemig holding company has operational control, except when mentioned in the text. The companies in this condition can be identified in the chart of Cemig Group, presented in the chapter 'Cemig' section 'Major Holdings.' This data was consolidated according to criteria established in Brazilian law (see explanatory note 3 of the Standardized Financial Statements - DFP, on Cemig's website<sup>2</sup>).

In terms of non-accounting information, the report may cover other subsidiaries of Cemig Group, with an explicit indication in the text where this limit is applicable.

The denominations "Cemig" or "Company" refer to Cemig holding company and its consolidated subsidiaries (Cemig Distribuição and Cemig Geração e Transmissão). The name

"Parent Company" is used to refer only to Cemig holding company as an individual company, excluding subsidiaries.

102-46 102-49

The process of defining the content of RAS 2018 consisted in a review and update of the process, carried out for RAS 2017, by business sustainability specialists internal and external to Cemig. The topics<sup>3</sup> considered in the update of the materiality exercise have the same scope and limits of RAS 2017. This exercise has been reviewed every two years.

For the materiality exercise of RAS 2018, stakeholder consultations were not carried out. The starting point was the identification and prioritization of the material themes<sup>4</sup> of the processes of trend analysis, consultations conducted for RAS 2016, and a method of prioritization of material themes was applied.

To prioritize the material themes, considering the mapped themes, two sets of parameters were applied. The first set contained two criteria from the perspective of stakeholder relevance and three from the perspective of relevance to Cemig.

The second set of parameters consisted in the application of two criteria, one concerning the Company's environmental, economic and social impacts, and the other concerning the perspective of influence in the evaluation and decision of stakeholders, as required by the principle of materiality of GRI Standards.

Governance topics were not included in the prioritization stage since they are mandatory for reporting and invariably a priority for the Company.

The entire process is in compliance with Principles for Defining the Content of the Report and all materiality tests prescribed by the GRI Standards have been met.

<sup>&</sup>lt;sup>2</sup> Available at this http://ri.cemig.com.br/ptb/s-20-ptb-2018.html.

<sup>&</sup>lt;sup>3</sup> In this report, "topic" is considered the categories of grouping of subjects of the environmental, economic and social dimensions ratified by the GRI Standards.

<sup>&</sup>lt;sup>4</sup> In this report, "material issues" are considered to be relevant and significant issues that should potentially be included in the RAS because they reflect an impact (positive or negative) of the organization on the economy, the environment and/or society or because they influence decisions of stakeholders.

On stakeholder engagement, Cemig has an internal<sup>5</sup> stakeholder identification, selection, and prioritization procedure, called Stakeholder Mapping. This procedure is updated as necessary and was used as a reference for the selection of stakeholders included in the last materiality exercise in 2016. Stakeholders prioritized in 2016, and who have remained as selected for consideration in RAS 2018, are listed below.



<sup>&</sup>lt;sup>5</sup> Procedure Cemig SE/AS - 0012/2010.

#### 102-43

Throughout the year, stakeholder relationship management is carried out by management teams and exclusively dedicated personnel to meet any received demands. Interactions with stakeholders follow the provisions of Cemig's Communication Policy<sup>6</sup>. This policy guides the communication with different categories of stakeholders with the objective of maintaining and strengthening brand credibility and sustaining the aggregation of value in internal and external relationships.

For the mapping of material themes for different stakeholders, carried out in 2016, interviews were used with those responsible for relations with them, analysis of demands received in the communication channels with the Company, media analysis, market campaign reports, research and programs focused on engagement with stakeholders.

Also, as part of the materiality exercise in 2016, Cemig selected and prioritized its main corporate documents - such as strategic planning, internal policies, service instructions and rating agency reports - and analyzed the respective contents to map the strategic themes for the business.

Regarding the sustainability context, for RAS 2018, documents were analyzed on sustainability in the energy sector, peer sustainability reports and competitors, the national and international commitments that Cemig is a signatory and documents that incorporate the perspective of national regulations and international agreements relevant to the Company.

102-47 102-44

Thus, in 2018/2019, the RAS 2018 process had the list of material themes and topics<sup>7</sup> updated and refined.

<sup>&</sup>lt;sup>6</sup> The Policy is available at this https://www.cemig.com.br/pt-br/A\_Cemig\_e\_o\_Futuro/sustentabilidade/nossos\_programas/sociais/Documents/PoliticaComunicacao.pdf.

<sup>7</sup> In this report, "material topics" are considered as GRI Standards grouping categories that respond to the material themes of the organization.

Priority Material Topic [1]	Stakeholders			GRI information [3]	Material Topic Limit		
	interested in the topic [2]	Description	GRI Topic		Internal Impact	External Impact	ODS
	Government authorities						
	Corporate customers						
	Residential consumers	Cemig is responsible for					
Access to energy	Employees	providing electricity access to part of the Brazilian population. This is Cemig's core business	Economic	201-1 to			7 mentant
	Suppliers	and the expansion of its business is directly related to the greater access to energy in Brazil.	Performance	201-4			<b>**</b> *
	Press						
	Investors						
	Society and local community						
	Government authorities	The relationship with biodiversity and its preservation is inherent to Cemig's business. The Company operates in two important Brazilian biomes, the Cerrado and the Atlantic Forest, and is responsible for managing more than 3,500 km² of fresh water in its reservoirs.	o Biodiversity is	ity 304-1 to 304-4			
	Corporate customers						6 COLAN MATTE
Biodiversity	Residential consumers						Å
	Suppliers						15 or like
	Press						
	Society and local community						
	Government authorities		Local communities;				
	Corporate customers						10 MOUGES NO MOUNTES
	Residential consumers	Engagement with the community is fundamental to the activity of generating and supplying energy. The proximity to					
Communities and social investment	Employees	generation plants, access to electricity and the energy efficiency directly impact the lives of people	Economic performance;	201-1 to 201-4; 202-1 and 202-2;			11 SECTIONAL CITES AND COMMUNITIES
	Suppliers	impact the lives of people and communities. Cemig, responsible for the generation, transmission and distribution of energy, has the "community" as one of its main stakeholders.		413-1 and 413-2			12 RESPONSE
	Press						CO
	Investors		Market presence				
	Society and local community						

Economic performance and financial equilibrium	Government authorities  Corporate customers  Residential consumers  Employees	Economic performance and financial balance are fundamental for Cemig to generate and share value with society. The access to electricity of the population of Minas Gerais and part of the population of Brazil depends on the economic and financial sustainability of Cemig.	Economic performance;	201-1 to 201-4; 203-1 and 203-2			7 ENNAME TOWNS TO SHEET AND THE SHEET AND TH
	Suppliers  Press  Investors		Indirect economic impacts				16 MAZIER
	Society and local community  Government authorities		Water				
	Corporate customers  Residential consumers  Consumers	The impact of environmental management and eco- efficiency on sustainability and on the economic performance of the business, make these material theme for most contemporary companies. With nearly 100% of the electricity generated by hydroelectric power plants and with the recent water crisis in the southeast region of Brazil, the challenge of eco-efficiency and environmental management is accentuated for Cemig.	Environmental compliance				6 GLAN HATE AND DANISHED TO REPORTED CONTINUENTS
Eco-efficiency and environmental management	Employees		102-39; 301- 1 to 301-3; 302-1 to 302-5; 303-1 to 303-2;	<b>②</b>	•	13 COMMIT	
	Suppliers		Material Energy				15 tr. tr. tr.
	Investors		Governance				<u>=</u>
	Society and local community						
	Corporate customers		Human rights assessment				
	Residential consumers	To achieve its vision for the future, Cemig needs people who are capable, productive and who	Employment	401-1 to			
People management	Employees	productive and who support the challenges and aspirations defined in its corporate strategy. This theme is therefore of great	Safety practices	401-1 to 401-3; 403-1 to 403-4; 404-1 to 404-3; 410- 1; 412-1 to 412-3			8 EDINARIC SIENTS
	Suppliers	relevance to Cemig, which seeks a people management model that adds value to the business.	Occupational health and safety				
	Society and local community	business.	Training and education				

	Government authorities		Environmental evaluation of suppliers				
	Corporate customers	Risk management plays a	Social assessment of suppliers				16 MAZI SIN
Risk management	Residential consumers	key role in the long-term business. It is associated with Cemig's corporate strategy and is material to the Company's	Economic Performance	201-1 to 201-4; 308-1 to 308-2; 408-1; 409- 1; 414-1;	<b>Ø</b>	•	
	Employees	governance.	Forced labor or labor	414-2			
	Suppliers		analogous to slave				
	Press		Child labor				
	Investors						
	Society and local community						
	Government authorities						
	Shareholders and Investors	The relationship with stakeholders is essential for the sustainability of the business and is directly related to the exercise of the Company's role for society. Cemig impacts and is positively and negatively impacted by its stakeholders and the management of this relationship is material to the Company.	Stakeholder engagement				16 PEAGLERO
Management and relationship with	Corporate customers						AN AUTOMOR
stakeholders	Captive consumers						17 PARTICIPARIS
	Society (NGOs, universities, local communities, etc.)						
	Employees						
	Suppliers						
	Press						
	Government authorities						
	Corporate customers		Economic				
	Residential consumers	With almost 100% of electricity generation made up of hydroelectrics,	Performance		-4; 305-1		
Climate change	Employees	the forecast of drought events intensification due to climate change poses significant risks to Cemig's		201-1 to 201-4; 305-1 to 305-7			13 COMMIT
	Suppliers	business. This motive, among others, positions climate change as a strategic and relevant					
	Press	issue for the Company.					
	Investors		Emissions				
	Society and local community						

	Government authorities Corporate customers		Local communities Economic Performance				7 KWHAK
	Residential consumers	The energy supply is Cemig's core business and the quality of the offered service is an essential prerequisite for business	Strategy	102-1 to 102-13; 102-			
Quality of power supply	Employees	continuity. Energy quality is measured by interrupted		14 and 102- 15; 201-1 to 201-4; 203-1			- <b>Ö</b> :
	Suppliers	power supply indicators and Cemig is subject to minimum standards required by the regulator and expected by its	Indirect economic	and 203-2; 413-1 and 413-2			71
	Press	customers.	impacts				
	Investors		Organization				
	Society and local community		Profile				
	Residential consumers		Safety		•	•	
	Corporate customers	Transmission and distribution networks pose a high risk to the safety of its operators and the surrounding population. Cemig values life and addresses this issue with a high degree of priority and relevance.	practices	403-1 to 403-4; 410- 1; 416-1 to 416-2			8 0000.000.000
Occupational and Population health	Employees		Customer health and				12 HORSE
and safety	Suppliers		safety				
	Press		Occupational health and safety				
	Society and local community						
	Government authorities						
	Corporate customers						
	Residential consumers	The energy sector is facing a scenario of change, characterized by new	Energy				
	Suppliers	possibilities for service provision, technologies, energy alternatives and					7 BURNE
Technology, innovation and energy alternatives	Press	innovations. Elements of this transition are smart grid, distributed generation, trends towards economy electrification,		203-1 and 203-2; 302-1 to 302-5		<b>②</b>	9 MAGETIT MODICION AND INFRASTRICTION
	Society and local community	energy storage, among others. The companies in the sector are faced with relevant challenges and					
	Government authorities	opportunities, which makes this a material theme for Cemig.	Indirect economic impacts				
	Investors						
	Society and local community						

	Government authorities Corporate customers	The Brazilian context has been marked by proven cases of corruption in the public and private sectors. Initiatives to combat corruption and promote transparency have been presented and implemented. Cemig, as a public company, engages and endorses these initiatives with a high priority.	Anti corruption			
	Residential consumers		Environmental compliance	102-16 to 102-39; 205- 1 to 205-3; 307-1		16 MAZ MA
Transparency, compliance and anti-corruption	Suppliers					
	Press		Ethics and integrity			
	Investors					
	Society and local community		Governance			

[1] In this report, "priority material topics" are considered as relevant issues essential to be included in the RAS because they reflect a significant impact of the organization on the economy, the environment and/or on the society, or because they substantially influence the decisions of the stakeholders.

[2] Stakeholders who cited the theme in the materiality exercise held in 2016.

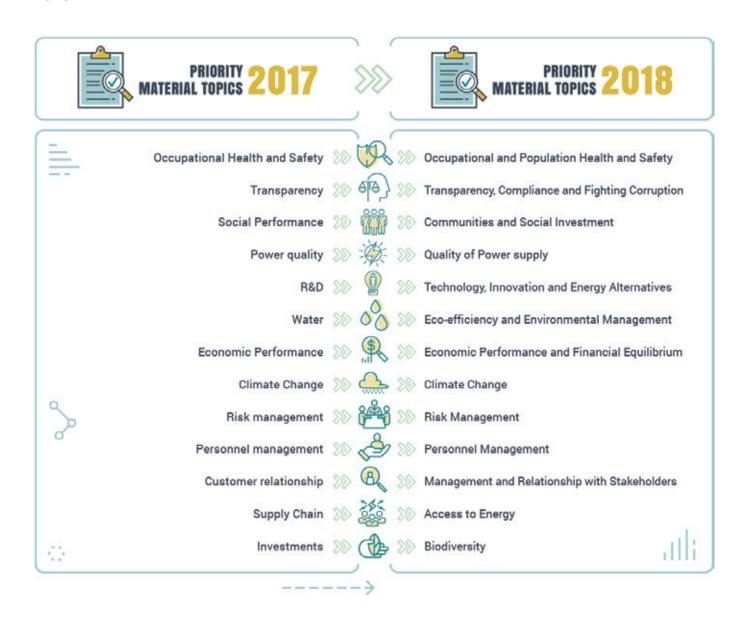
[3] In the original document of the GRI Standards, they are no longer considered "indicators", but "disclosures" - since there is not yet an official translation,

we have chosen to use the term "information."

For each of the 13 material themes selected as priorities, the respective management form is presented throughout the report, explaining the relevance of the topic to Cemig, how the subject is managed, the risks involved, the related goals and objectives, and how the Company responded to the issues and concerns raised by stakeholders.

102-49

The table below shows the changes in the set of material themes for Cemig in 2017 and 2018.



### 2.3 REPORT CAPTIONS AND GLOSSARY

The GRI Content Index, which can be found at the end of this report, provides a summary of all available information, from the perspective of GRI Information.

Throughout the report, content that refers to (i) GRI topics, including those specific to the Electric Utilities industry, (ii) material topics; (iii) principles of the UN Global Compact; and (iv) 17 Sustainable Development Goals - SDGs will have markings to facilitate navigation through the report.



# 3. MESSAGE FROM MANAGEMENT

102-14

When analyzing the scenario, 2018 was very positive for Cemig, with achievements that allowed the Company to reach a new level of financial and operational sustainability, after a period of challenges in recent years due to an adverse macroeconomic and hydrology scenario and greater financial leverage, especially due to the loss of some generation concessions.

The results obtained in 2018 bring us the certainty of the correct strategic direction embraced in the conduct of Cemig's business by the Management, and efficient operation by its qualified group of employees.

The 2018 fiscal year marked a major advance in the Company's Corporate Governance practices, starting with the approval of the reform of the Statute, bringing numerous changes that prepare Cemig for the new times, in addition to complying

with Law No. 13.303/2016, which brought a series of requirements for the permanent improvement of the management of stateowned enterprises, in the various spheres of the Federation.

While the improvements are expected to be continuous, and therefore the challenges for future management remain, the advances already implemented consolidate Cemig's new level of governance, such as the approval and implementation of various Policies stated in the Statute, transactions with related parties, people management, information disclosure and equity management.

In the same way, the Audit Committee, also responsible for eligibility issues, and the Strategy and Finance Committee, both within the Board of Directors, were remodeled in the contents of finance, human resources and integrity, setting the basis for Cemig to continue on its path of growth, efficiency and sustainability.

Our net income was BRL 1,700 million, a significant increase of 70% in relation to the previous year, which was BRL 1,001 million. Similarly, our cash generation, measured by EBITDA, increased by 8.28% from BRL 3,492 million in 2017 to BRL 3,781 million in 2018.

Regarding debt management, we continued to focus on lengthening its average maturity and also on reducing financial funding costs. The debt/EBITDA ratio, which was 4.12 in 2017, decreased to 3.86 in 2018, a significant reduction, which demonstrates Cemig's new financial reality.

In line with the aforementioned advances, the main international risk rating agencies have promoted successive positive revaluations of Cemig, Cemig GT and Cemig D credit risk during 2018, reflecting the significant evolution of the ratings and recognizing the success in implementing measures that resulted in an increase in our credit quality.

Noteworthy among the achievements of 2018 is the tariff review of Cemig Distribuição, where our investments in the tariff cycle from 2013 to 2018, close to BRL 5 billion, started to be remunerated in the tariff. This increase in revenue, together with the reduction in operating costs, allowed Cemig D to return to profit in 2018, after two consecutive years of losses.

In 2018, Cemig D reported a profit of BRL 535 million, compared to losses in 2017 and 2016, of BRL 117 million and BRL 324 million, respectively. Similarly, EBITDA in 2018 was BRL 1,534 million, compared to EBITDA of BRL 831 million in 2017, a significant increase of 84.60%. It should be noted that the tariff review had its effects from June 2018, that is, in 2019 only the result of the revision will be fully included in the result.

At Cemig GT, it is worth highlighting the transmission investment program for the next 5 years, in an amount exceeding BRL 1.1 billion and with the guarantee of funds due to the amounts that are being received as transmission indemnification, for having accepted the terms of Law No. 12.783/13 (MP 579).

Also important for the improvement of the liquidity of Cemig GT is the receipt of indemnification of the basic projects of São Simão and Miranda power plants, in August 2018, in the amount of BRL 1.1 billion.

All of these positive actions and events in 2018 were reflected in our consolidated financial results.

In 2018, we successfully concluded the disposal of telecommunication assets, which generated BRL 654 million of cash for the Company, within the context of our share divestment plan, as we disclosed to the market in 2017. Despite the complexity involved in the divestiture processes, we are confident that in 2019 we will present new positive results, which will contribute to the reduction of our leverage in a faster and more expressive way.

It is very important to highlight that this improvement in financial results was also accompanied by our concern about the quality of the services we provide to our customers. Our quality indicators, measured by the duration and average time of service interruptions (DEC and FEC), continue in a path of improvement and compliance with regulatory standards.

Likewise, we do not neglect our employees. In 2018, we celebrated a year without fatal accidents within Cemig's workforce, including our own employees and those contracted by third parties. Sustainability and social responsibility are part of our culture. We were once again included in the BM&F/Bovespa Corporate Sustainability Index and the Dow Jones Sustainability Index, in which we have been listed since 1999. We are signatories of the United Nations Global Compact and we have a prominent position in several other ratings of national and international sustainability that represents the recognition of our sustainable actions.

We are optimistic when we look into the future, in the quest to strengthen Cemig's sustainability even further, ensuring adequate returns to shareholders, investor confidence and satisfaction of the legitimate interests of other players involved in our business.

We are grateful for the commitment and talent of our employees, shareholders and other stakeholders in the convergent effort to maintain Cemig's recognition as a benchmark company in Brazil.

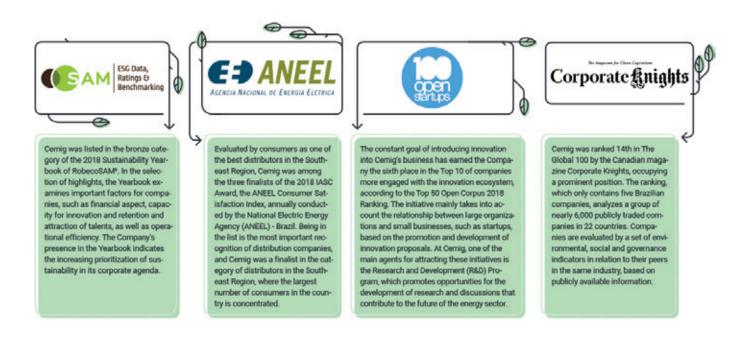


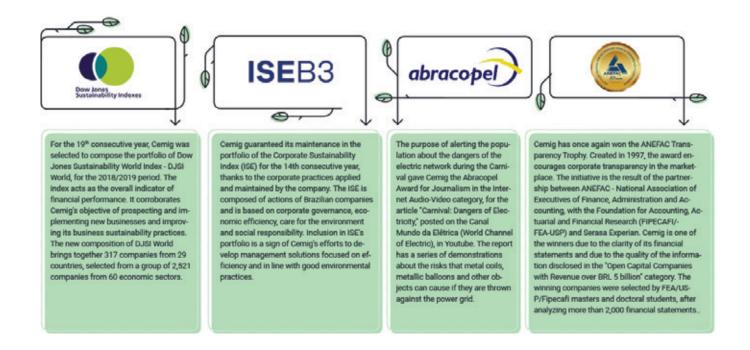
Rizzia Costa (Business Processes), Ronaldo Alves (Maintenance of Electric Transmission System) e Douglas Gonçalves (Electrician )

# 4. CEMIG

# 4.1 AWARDS, RANKINGS, INDEXES AND RECOGNITIONS

In 2018, Cemig made efforts to maintain and improve its performance on environmental, economic and social aspects. The recognition of the Company's work is marked by awards, achievements and prominent positions in the main institutions and market analysis in this regard.





### 4.2 PARTICIPATION IN ASSOCIATIONS

The energy sector is one of the most important economic sectors for the good performance of human activities in organized societies. The importance of the generation, transmission and distribution of electricity and the need for complementarity and synergy among the agents of the sector stimulates the organization of sectorial associations.

In order to promote cooperation and collaboration, Cemig participates in the main Brazilian associations in the sector.

#### 415-1

None of these entities aim to influence public policies as a main and primary objective, but one of the indirect consequences of their actions is to contribute to the evolution of the regulation of the electricity sector.

#### 102-13

The following table highlights the activities and actions developed by Cemig with some of the entities of which Cemig is associated.

<sup>&</sup>lt;sup>8</sup> Company specialized in asset management and offering products and services in the field of sustainable investments.

- Abradee Brazilian Association of Electric Power Distributors: In recent years, distributors have been facing several situations that affect their sustainability, such as the cash deficit borne by the utility companies due to insufficient tariffs to cover the energy purchase, which is only compensated during the tariff processes. In order to minimize the impact of such events and defend the interests and needs of the electricity distribution agents, Cemig has been accompanying and supporting Abradee in its frequent operations with ANEEL and the Ministry of Mines and Energy (MEE).
- Abrage Brazilian Association of Electricity Generating Companies: The most relevant issue addressed in the scope of Abrage concerns the adjustment factor of the energy reallocation mechanism, which has seriously impacted the operations of the energy market. The association seeks, together with the competent entities and agencies, short-term alternatives to address the impacts and structural measures aimed at reformulation of the mechanism. Cemig's endorses the actions of the association, which are aligned with the Company's business and objectives.
- Apine Brazilian Association of Independent Producers of Electric Energy:
   Discussion and consolidation of Apine's proposal, especially regarding issues related to the wording of Art. 2 of Law No. 13.203/2015 Treatment of the Non-Hydrological Risks Allocation to the Energy Reallocation Mechanism MRE; Meetings with MME, Energy Research Office EPE and ANEEL and monitoring of regulations.

Abrate – Brazilian Association of Electric Power Transmission Companies: The most relevant issue addressed in Abrate concerns the Periodic Tariff Review

- (RTP) of the transmitter of Cemig GT. In the scope of RTP, Abrate, among other contributions to society, has developed several discussions on methodology for calculating efficiency to cover operational costs. Some common points were agreed between the companies, with coordination of the association. Other points had individual contributions due to the characteristics of each company. Thus, throughout the public hearings, ANEEL changed criteria and results from the contributions received. Cemig GT remained at the top of the ranking of operational efficiency, which should imply in obtaining the corresponding portion of revenue in the best possible condition, complying with the current regulation.
- Abraget Brazilian Association of Thermoelectric Generators: Abraget has been working to obtain the easing of the Fuel-Lack Penalty, which unleashed the penalty to the PLD (Resolution No. 827/2018). This penalty linked to the PLD was an obstacle to sign contracts of supply of natural gas and studies for the proposal of auctions of thermoelectric plants, aimed at electro energy security. The contribution was the determination of the optimum expansion matrix, observing the relationship between the expansion of renewable sources and the power required for the electrical and energy security of the National Interconnected System (SIN).
- Abragel Brazilian Association of Clean Energy Generation;
- Abraceel Brazilian Association of Energy Marketers;
- ABCE Brazilian Association of Electric Energy Companies.

For each of the associations to which it is affiliated, Cemig, as well as the other associated companies, contributes with maintenance fees. These fees are established in the assemblies of the entities, according to their respective statutes. As indicated in the Table below, in 2018, Cemig disbursed a total of BRL 1,208,582.63 in annuities of financial contributions to the associations.

Association	Annuity (BRL)
Abradee	385,715.71
Abrage	198,331.52
Apine	169,903.20
Abrate	165,418.40
Abraget	114,961.80
Abragel	79,200.00
Abraceel	66,912.00
Abce	28,140.00
Total	1,208,582.63

## 4.3 PROFILE

102-1 102-5

Companhia Energética de Minas Gerais S.A. - Cemig is a publicly traded company, controlled by the State of Minas Gerais, holder of 50.96% of the common shares of the Company.

The Federal Government, through BNDES Participações S.A. - BNDESPar, holds 11.14% of the common shares. The Company's shares are traded through the stock exchanges of São Paulo, New York and Madrid. With more than 150,000 investors in 38 countries, the Company's market value, on December 31st, 2018, was approximately BRL 20.8 billion.

102-2 102-3

Cemig Group is headquartered in Belo Horizonte, Minas Gerais and operates in the areas of generation, transmission, commercialization and distribution of electricity, energy solutions and distribution of natural gas.

The holding company Companhia Energética de Minas Gerais – Cemig comprises its wholly-owned subsidiaries Cemig Geração e Transmissão S.A. (Cemig GT) and Cemig Distribuição S.A. (Cemig D).

In addition, the Company participates of the controlling block of Light S.A., owning a direct (26.06%) and indirect (23.93%) stake. Cemig also holds a 21.68% stake in the capital stock of Transmissora Aliança de Energia Elétrica S.A. - Taesa, being the controller of the company.

Cemig also shares other corporate interests, totaling 200 Companies, 17 Consortia and two FIPs - Investment Funds.

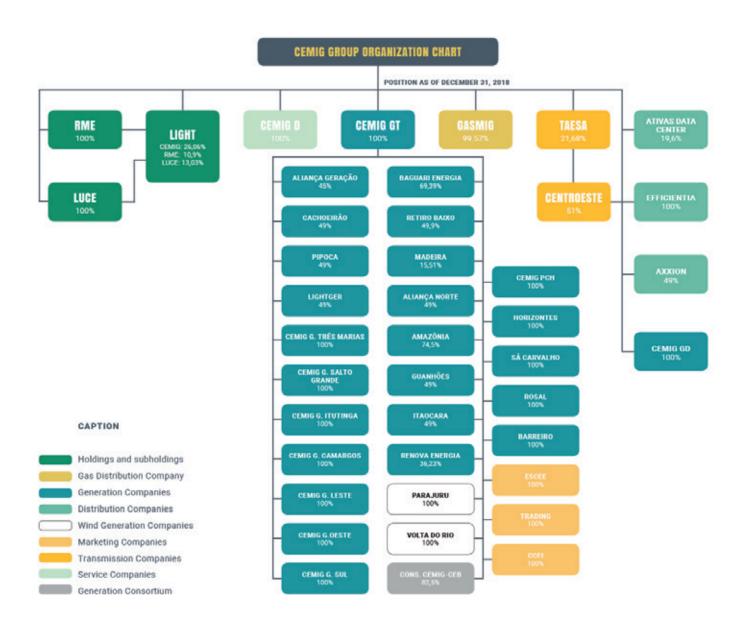
102-4

Cemig operates in Brazil, serving more than 17 million people in 774 municipalities in Minas Gerais and managing the largest electricity distribution network in South America, with more than 530 thousand km resulting in assets in 22 Brazilian states and in Federal District.

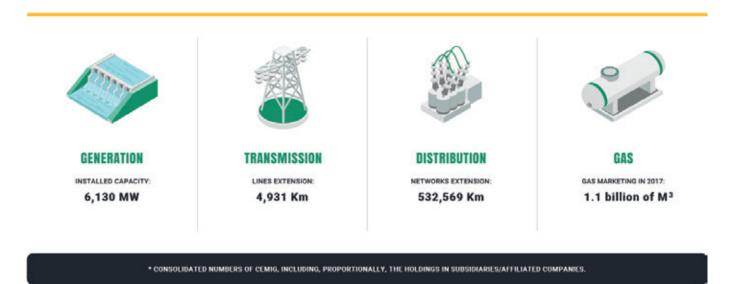
The highlight of the general shareholding composition in 2018 was the sale of assets related to Cemig Telecom, a subsidiary of Cemig Group, responsible for data transmission operations. The sale occurred through bidding procedure No. 500-Y12121, as presented in the Relevant Fact on November 1, 2018. More details on this operation are presented in the chapter on Strategy, which describes the company's strategy and main investments and divestments of 2018.

### Main holdings

The main holdings of Cemig Holding in the capital of subsidiaries and affiliates are presented in the figure below. The divestment plan that changed its holdings is detailed in the chapter Strategy, section "Investments in Generation, Transmission and Distribution and Divestment Program."



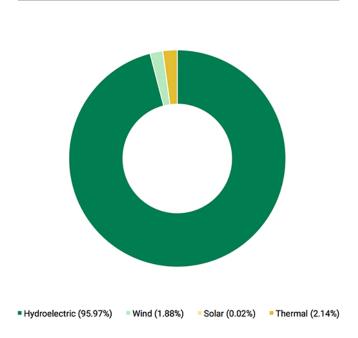
## Main business segments



### **Cemig electrical matrix (MW)**

Within the energy generation segment, Cemig GT is one of the largest electric power companies in Brazil. The company's generating plant is currently formed by 87 plants, of which 83 are hydroelectric power plants (21 HPPs and 62 SHPs), one thermoelectric plant, two wind farms and one solar plant. At the end of 2018, Cemig's installed capacity was 6,130 MW<sup>9</sup>, which represents an increase of 7% in relation to the installed capacity of 2017<sup>10</sup>.

Historically, the electrical matrix of Cemig's generating plant is predominantly renewable. In 2018, out of the 6,130 MW of installed capacity, 5,999 MW came from renewable sources, representing 98% of



clean energy. Hydraulic energy accounted for approximately 96% of installed capacity, of which about 84% were generated in Hydroelectric Power Plants (HPP) and 12% were generated in Small Hydroelectric Plant (SHP).

In terms of net energy production, in 2018, 14.698.565 MWh were generated<sup>11</sup>, of which 14.675.621 MWh (99%) came from renewable sources. These amounts, when compared to 2017, show a 26% reduction in net generation of energy at Cemig's plants. This reduction is due to losses of concessions of São Simão, Jaguara, Miranda and Volta Grande power plants<sup>12</sup>.

Cemig Generator Park								
		Installed Capacity (MW)			Net Generation (MWh)			
SOURCE	2018	×	2017	*	2018	*	2017	×
Hydraulics	5,883	96	7,012	97.48	14,353,883	97.65	19,592,950	99.3
Thermal	131	2.14	131	1.82	22,944	0.16	38,650	0.2
Wind	115	1.88	49	0.68	320,175	2.18	98,380	0.8
Solar	1	0.02	1	0.02	1,563	0.01	1,652	0.0
Total	6,130	100	7,193	100	14,698,565	100	19,731,632	10

<sup>&</sup>lt;sup>9</sup> Data considering all Cemig's power plants and holding companies in which it holds a stake.

<sup>&</sup>lt;sup>10</sup> Regarding the indicator EU-01, of the sector supplement linked to the G3 version.

<sup>&</sup>lt;sup>11</sup> Data considering only Cemig's powerplants, excluding those belonging to the holding companies in which Cemig holds a stake (Light, Renova, Belo Monte, SantoAntônio, Brasil SHP and Guanhães Energia power plants).

<sup>&</sup>lt;sup>12</sup> Regarding the EU-02 indicator, of the sector supplement linked to the G3 version.

The transmission of energy, also the responsibility of Cemig GT, consists in the transportation of large quantities of electric energy over long distances, from large generators to consumer centers. This service is carried out through a network of transmission lines and substations with a voltage equal to or greater than 230 kV, called Basic Network. Cemig GT operates a transmission network with an extension of 4,930 km<sup>13</sup>.

Voltage Level (kV)	Total Length (km)
230	769.42
345	1,980.66
500	2,180.47
Total	4,930.56

#### 102-7

As the transmission network approaches the consumption centers, there are substations that reduce the electrical voltage so that energy can reach the consumers, starting the distribution process. Cemig D is a Cemig Group company in charge of operating the distribution network. With an area of 567,740 km², it operates in approximately 96% of the State of Minas Gerais. Cemig D has an extension of 532,569 km of distribution network - adding medium, low and high voltage networks (MV, LV and HV, respectively).

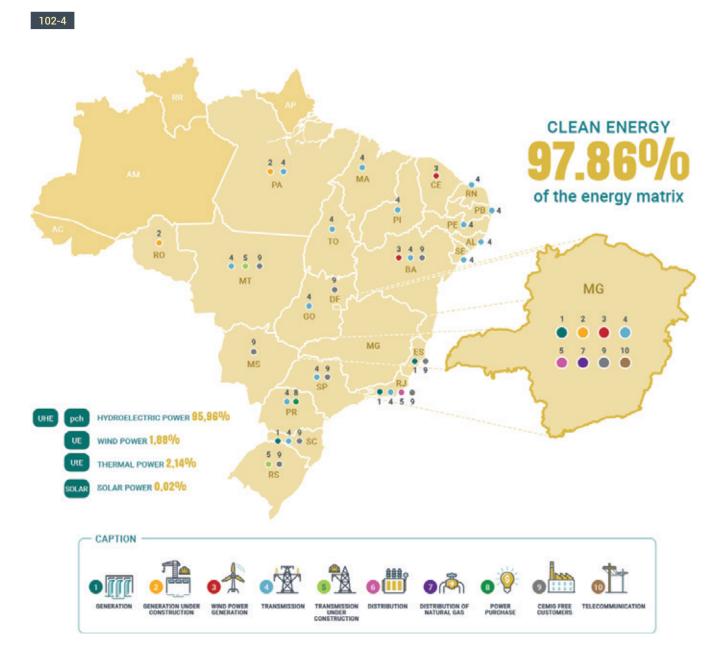
Network type	Extension			
	km MV	km LV	km HV	
Urban Overhead Networks	39,580.96	66,622.59	934.13	
Rural Overhead Networks	391,763.94	18,657.73	16,497.40	
Urban Underground Networks	312.75	2,059.71	75.82	
Rural Underground Networks	0	64.15	0	
Total (km)		536,569.18		

13 Data from the end of 2018, referring to the indicator EU-04, of the sector supplement linked to the G3 version.

In addition to the generation, transmission and distribution of electricity, Cemig also operates the natural gas distribution and marketing segment through Gasmig, which is the exclusive distributor of piped natural gas(PNG) throughout the state of Minas Gerais. The Company serves the industrial, residential, compressed natural gas, liquefied natural gas, automotive and thermoelectric sectors. In 2018, Gasmigsold a total of 1,104,745,283 m³ of gas, as shown in the table below.

Gasmig Sales 2018			
Covered Segment	Volume (m²)		
General Use	11,895,692		
Industrial	858,397,946		
GNC-Industrial	17,751,901		
Automotive	41,233,082		
CNG - Vehicle	1,288,555		
Commercial (PCNR)	2,475,060		
Residential	6,472,535		
Co-generation	14,106,774		
LNG	0		
Subtotal	953,621,545		
Thermal Plants	151,123,738		
Total with Thermoelectric Power Plants	1,104,745,283		

#### **Our location**

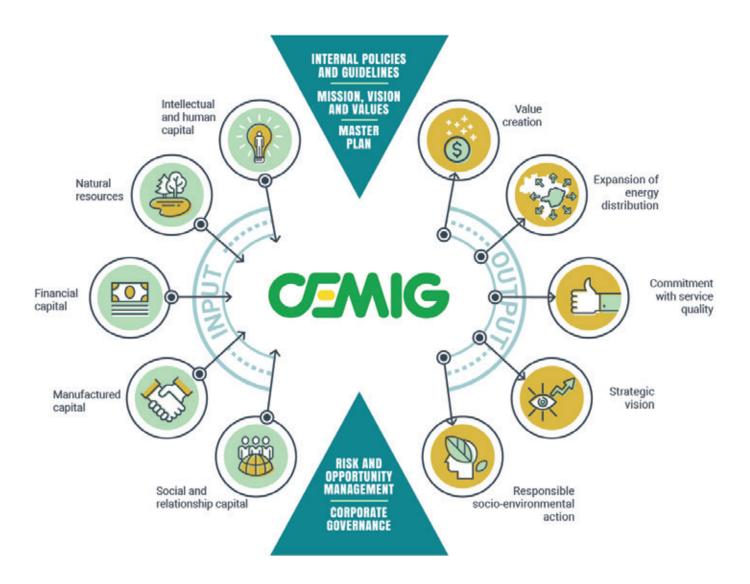


### **Business Model**

Cemig's main inputs are the technical skills and quality of its workforce (intellectual and human capital), recognized nationally and internationally for its expertise; natural resources, especially water since large part of our installed capacity comes from hydroelectric origin (natural capital); the necessary financial resources of the government and other shareholders for the development of the business (financial capital); the inputs provided by the suppliers (manufactured capital) and the preference of our customers, consumers and the local community (social and relationship capital).

Cemig seeks to create value for its shareholders, employees, suppliers and society. The investments in expansion of the energy distribution and the commitment to quality of customer service represent the materialization of Cemig's strategic vision, based on the principles of sustainability and socio-environmental responsibility.

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



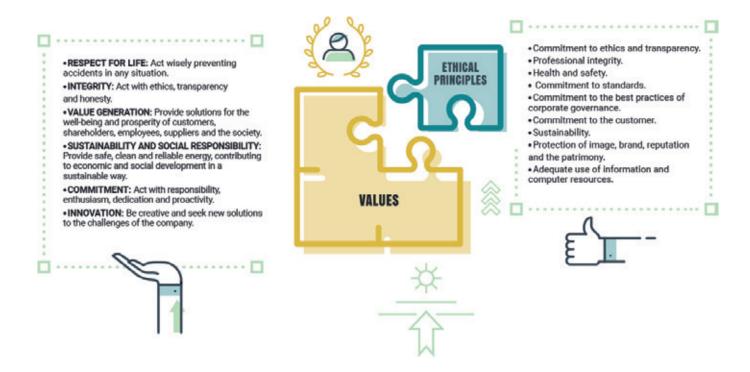
## 4.4 MISSION, VISION AND VALUES

#### 102-16

Cemig's management system follows the guidelines expressed in its strategic foundations, mission, vision and values. It is oriented to conduct and operate the Company's organization successfully and is designed to continuously improve its performance. In November 2018, these guidelines were updated and approved by the Board of Directors due to the Strategic Planning review.

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

**Vision:** Being one of the top three best integrated groups of electric power in Brazil in governance, financial health, asset performance and customer satisfaction.





Renata Catão (Compliance)

# **5. CORPORATE GOVERNANCE**

The Bylaws, a document that guides the company's practices and presents its main management guidelines, has been updated twice since the beginning of 2018. The first update occurred at the Special Meeting - SM of July 11th, 2018 and the second at the Special Meeting held on March 25th, 2019. In these opportunities, amendments aiming the maintenance of best practices of Corporate Governance were approved in Cemig's Bylaws.

In particular, the results of the Special Meeting of March 25th, 2019 bring significant changes in the Company's governance. The disclosure of the main results in this report is considered to be relevant by Cemig, anticipating the communication of changes to stakeholders. It should be noted that for the purposes of analysis in the other chapters, the data complies with the limit of this report (January 1st, 2018 to December 31rd, 2018).

Considering these last two amendments to the Bylaws, the following should be highlighted:

- Board of Directors has reduced from 15 to nine titular members, in accordance with the Code of Best Corporate Governance Practices of the Brazilian Institute of Corporate Governance - IBGC and the Corporate Sustainability Assessment Manual of Dow Jones Sustainability Index;
- Dissolution of alternate directors' positions at the Board of Directors;
- Reduction of the composition of the Board of Executive Officers, from 11 to seven boards, with the purpose of bringing greater operational efficiency;
- Establishment of an Audit Committee, maintaining the Fiscal Committee;

- Establishment of an Eligibility and Valuation Policy for appointment of a member of the Board of Directors and Board of Executive Officers in subsidiaries and affiliated companies;
- Transaction Policy with Related Parties;
- Formal designation for the Board of Directors in order to ensure implementation and supervision of the Company's risk systems and internal controls;
- At the discretion of the Board of Executive Officers, expansion of technical committees, composed of Cemig long-service technicians, with decision-making capacity in specific matters;
- The Chief Executive Officer is now conducting compliance and corporate risk management activities directly;
- Greater emphasis on Cemig's control systems: internal auditing, compliance and corporate risk management;
- Establishment of an arbitration chamber to resolve any conflicts between the Company, its shareholders, directors and members of the Fiscal Committee.

This statutory amendment demonstrates the commitment of the Company's shareholders (controlling shareholder and minority shareholders) to improve the management process and Corporate Governance practices in order to guarantee Cemig's long-term sustainability and profitability.

## **5.1 GOVERNANCE MODEL AND KEY PRACTICES**

#### 102-18

Cemig's corporate governance structure is based on transparency, fairness and accountability. The Company's management is operated by the Board of Directors and by the Board of Executive Officers, and also has a permanent Fiscal Committee. All of them are governed by the Company's Bylaws and applicable legislation.

The main characteristic of Cemig's governance model is the clear definition of the roles and responsibilities of the Board of Directors and Board of Executive Officers in the formulation, approval and execution of the policies and guidelines that pertain the conduct of Company's business. Members of the Board of Directors, who are appointed by the Shareholders' General Meeting, elect its Chairman, Deputy Chairman and appoint the Board of Executive Officers of Cemig. The structure and composition of the Board of Directors and of the Board of Executive Officers shall be identical in the Integral Subsidiaries Cemig Distribuição S.A. and Cemig Geração e Transmissão S.A., with eventual exceptions, in order to be approved by the Board of Directors.

The focus of the Company's governance has been the balance between economic, financial, environmental and social aspects of Cemig's projects, with the purpose of continuing its contribution to Sustainable Development. This includes transparency about its management and performance in order to improve its relationship with shareholders, customers, employees, the society and other stakeholders.

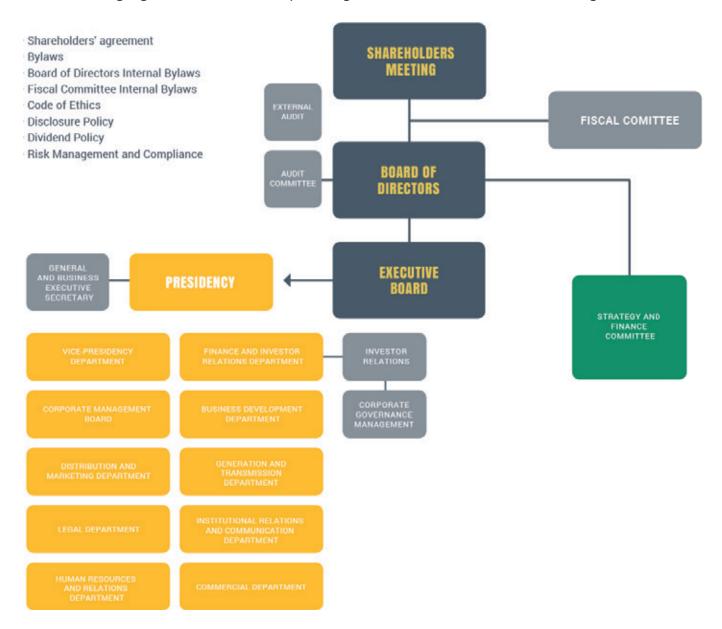
Cemig follows IBGC best practices and recommendations in order to support a well-structured corporate governance model, fostering a relationship of trust and integrity with stakeholders. In addition, since 2001, Cemig has followed the Level 1 Corporate Governance practices of B3, the stock exchange of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

The decision-making processes of Cemig's senior management is supported by Technical Committees. At Cemig, the Advisory Committees to the Board of Directors are established by a specific deliberation of the Board to analyze subjects of their concern and issue recommendations to be

drawn up in the minutes of its meetings. The Committees do not have executive functions or decision-making powers, but ensure objectivity, consistency and quality in the decision-making process, analyzing matters of their specialty and issuing recommendations for decisions or actions and opinions to the Board of Directors.

It is important to clarify that in 2018 there were significant changes in Cemig's governance structure. Within the review of the Bylaws, the Corporate Governance and Sustainability Committees, the Support Committee to the Board of Directors, the Human Resources Committee, the Strategy Committee, the Audit and Risk Finance Committee and the Business Development and Corporate Control Committee of Subsidiaries and Affiliates were eliminated, giving place to the current Audit Committee and Strategy and Finance Committee. The strategic functions of these dismissed committees were directed to the competent managements, responsible for the respective themes.

### The following figure shows how corporate governance is structured in Cemig:



<sup>\*</sup> organization chart as of 12/31/2018

### 102-22 102-23

At the Special Meeting held on March 25, 2019, the composition of the Board of Directors and Board of Executive Officers was amended with effect from April 2nd, 2019. The following tables present the composition of the new Board of Directors, Board of Executive Officers and the composition of the Fiscal Committee on December 31st, 2018. It is important to note that, according to Cemig's Bylaws, the positions of Chairman of the Board of Directors and Chief Executive Officer of the Company cannot be accumulated by the same person.

Board of Directors
Effective Members
Antônio Rodrigues dos Santos e Junqueira (majority)
Cledorvino Belini (majority)
José Reinaldo Magalhães (majority)
Márcio Luiz Simões Utsch (majority)
Romeu Donizete Rufino (majority)
Marcelo Gasparino da Silva (majority)
Renata Bezerra Cavalcanti (minority)
José João Abdalla Filho (representative of the holders of preferred shares)
Márcio José Peres (representatives of employees)

Fiscal Committee		
Effective Members	Alternate Members	
José Afonso Bicalho Beltrão da Silva - President (majority)	Helvécio Miranda Magalhães Júnior (majority)	
Marco Antônio de Rezende Teixeira (majority)	Flávia Cristina Mendonça Faria Da Pieve (majority)	
Camila Nunes da Cunha Pereira Paulino (majority)	Wieland Silberschneider (majority)	
Rodrigo de Mesquita Pereira (preferred shares)	Michele da Silva Gonsales (preferred shares)	
Cláudio Morais Machado (minority)	Carlos Roberto de Albuquerque Sá (minority)	

Executive Board			
Name	Position		
Cledorvino Belini	Chief Executive Officer		
Dimas Costa	Commercial Director		
Daniel Faria Costa	Director of Management Participation		
Ronaldo Gomes de Abreu	Director of Distribution and Marketing		
Maurício Fernandes Leonardo Júnior	Chief of Financial and Investor Relations Officer		
Paulo Mota Henriques	Director of Generation and Transmission		
Ronaldo Gomes de Abreu	Director of Business Management, temporarily and cumulatively		

Additional information on the composition, election, mandate, main responsibilities and duties of the Board of Directors is available on Cemig's Investor Relations website<sup>14</sup>. The Bylaws are also available on this website.

# **5.2 GENERAL MEETINGS**

On an annual basis, Cemig holds its Annual Shareholders' Meeting (ASM), which must take place until the end of April, in accordance with Bylaws and current legislation. The Special Meetings (SM), in turn, may occur several times throughout the year, whenever necessary.

Both are called at least 30 days in advance, through the Investor Relations website of Cemig and the Securities and Exchange Commission (CVM, Comissão de Valores Mobiliário 15), as well as in national newspapers.

In 2018, in addition to the ASM held on April 30, five SM were held. The dates on which these Meetings were held and a summary of their main decisions, recorded in official minutes, can be verified on the IR website<sup>16</sup>. On March 25, 2019 a Special Meeting was held, which approved, among others, the reform of the Bylaws and the recomposition of the Board. Other Meetings dates already scheduled for 2019 are disclosured in Cemig Corporate Events Calendar<sup>17</sup>.

Opinions, suggestions and recommendations regarding the meetings can be sent to the email address ri@cemig.com.br, also available on the Investor Relations website of the Company.

# **5.3 MANAGEMENT**

102-35

Cemig's executives and directors are remunerated in accordance with the Bylaws. The aggregate or individual amount of the remuneration of the Board of Directors, the Board of Executive Officers and the Audit Committee shall be set by the General Meeting, in accordance with the applicable legislation, being prohibited the payment of participation, of any kind, in Cemig's profits to the members the Audit Committee and the Board of Directors, except for the member representing the employees.

<sup>14</sup> Available at http://www.cemig.com.br/pt-br/a\_cemig/quem\_somos/Paginas/estatutos\_e\_regimentos.aspx

<sup>15</sup> Available at http://www.cvm.gov.br/

<sup>&</sup>lt;sup>16</sup> Available at http://ri.cemig.com.br/enu/s-4-enu-2018.html

<sup>17</sup> Available at http://ri.cemig.com.br/enu/s-21-enu.html

At the Annual Shareholders' Meeting held on April 30th, 2018, the following changes were approved in the payment policy in force in 2017 (described in the minutes of the Annual Shareholders' Meeting of May 12, 2017):

- i. The annual global amount for compensation of management and fiscal directors, comprising the Board of Directors, the Board of Executive Officers and the Fiscal Committee, is limited to BRL 33,000,000.00, including health insurance for the Officers, to be hired according to the same standards of the Health Plan in force for Cemig employees and variable remuneration. The monthly fees of the Chief Executive Officer is limited to the amount of BRL 85,000.00 and the other Officers, individually, amounting to BRL 67,000.00, correcting, accordingly, in the same proportion, the current values perceived by the Officers as payed leave, bonuses and other benefits.
- ii. It was established that the monthly remuneration of each of the effective members of the Board of Directors (excluding Directors who hold the position of Officers) is equivalent to thirty percent of the remuneration of the Chief Executive Officer to the Chairman of the Board of Directors, BRL 25,500.00 and thirty percent of what, on average, receive the other Cemig's Officers for the other effective members, that is, BRL 20,590.90.
- iii. It was established that the variable remuneration of the Officers and targets and performance indicators for their calculation are stipulated by the Human Resources Committee of the Board of Directors, amounting to the global annual amount mentioned above.

## **Board of Directors**

### 102-24

In 2018, the Board of Directors had nine effective members. Among the effective members, the Chairman and the Vice-Chairman will be chosen by their peers at the first meeting of the Board that will take place after the election of its members. The elected Directors shall have a unified two-year term, with a maximum of three consecutive renewals, subject to the requirements and prohibitions established in the applicable legislation and regulations, and may be removed at any time by the General Meeting. The employees are assured the right to elect a member, observing the provisions of Law No. 12.353, of December 28, 2010, whichever is applicable.

In the formation of the Board of Directors, at least 25% of the members must be independent or at least one, if there is a decision for the exercise of the multiple voting power by the minority shareholders. Among the acting Directors (on December 31st, 2018), seven have independent advisor characteristics by the DJSI criteria and six have independent advisor characteristics by the IBGC criteria. Diversity is not currently considered for the formation of the Committee.

The attributions of the Board of Directors are described in the Internal Regulations of the Board of Directors. This document, available on Cemig's website 18, requires the Board of Directors to meet regularly, at least once a month, to analyze the results of Cemiq holding company and its wholly-owned subsidiaries, controlling companies and affiliates, and other matters included in the agenda. And, extraordinarily, by calling of its Chairman, its Deputy Chairman, a third of its members or when requested by the Board of Executive Officers.

The matters submitted by the Board of Executive Officers, for inclusion in the agenda, issued by Proposal for Resolution by the Board of Executive Officers and/or the Board of Directors (PD), shall be accompanied by recommendations, reports, opinions and, as the case may be, a statement of Cemig Multi-Year Business Plan and included in the annual budget.

The Directors must always attend the meetings previously prepared, by examining the documents made available and participating actively and diligently. Any further clarification on the matters to be resolved at the meetings may be requested by any Adviser, in writing, to the Management of the General Secretariat and Corporate Executive Secretariat, and Cemig shall provide such clarifications or send complementary documents until the beginning of the meeting.

In 2018, the Board of Directors met 31 times for resolution on various matters, including strategic planning and investment projects. The summary of the decisions and the extract of the minutes of the meetings can be seen here. At the beginning of each meeting, the Directors are invited to express their opinions in the event of a conflict of interest.

Cemig's Strategic Planning process is conducted by the Board of Directors, with the participation of the Executive Board, beginning with the definition of the strategic fundamentals, represented by the Mission, Future Vision, Values, Master Plan and Strategic Guidelines. The Board of Executive Officers is responsible for presenting to the Board of Directors, which is responsible for its approval, the Business Plan for the following annual exercise and the Long-Term Strategy, updated with risk and opportunity analysis for at least the next five years. Cemig's Long-Term Strategy, Multiyear Business Plan and Annual Budget will be reflected in all plans, projections, activities, strategies, investments and expenses of the holding company and its wholly-owned subsidiaries, controlled companies, affiliates and consortiums in which it participates, directly or indirectly.

<sup>15</sup> Available at http://ri.cemig.com.br/static/enu/regint\_cons\_administracao.asp?idioma=enu

#### 102-28

Each year, Board of Directors members are submitted to individual and collective performance self-evaluations, aiming to improve their functions, observing the following minimum requirements:

- i. presentation of the acts of management practiced, as to the lawfulness and effectiveness of the administrative action;
- ii. contribution to income for the year;
- achievement of the objectives established in the Multi-Year Business Plan and compliance with the Long-Term Strategy and Annual Budget.

The Audit Committee shall verify, independently, the compliance of the process of evaluation of the managers, the members of the advisory committees to the Board of Directors and the members of the Fiscal Committee.

### **Board of Executive Officers**

102-19 102-20

Cemig's Board of Executive Officers has seven officers, whose functions are established in the Company's Bylaws. Its members are elected and dismissed at any time by the Board of Directors and have a two-year term of office, and may be reappointed up to three times. The Officers are allowed the concurrent and unpaid exercise of management positions in Cemig's wholly-owned subsidiaries, controlled and affiliated companies.

### 103-2:201 103-3:201

The Board of Executive Officers shall observe and comply with targets and limits established by the Board of Directors, relating in particular to indebtedness, liquidity, rates of return, investment and regulatory framework. In this sense, it is the role of the executive officers to coordinate and manage the Company's work, as well as all strategic and institutional activities of the affiliates, subsidiaries and consortia of which it is a member.

Responsibilities at the executive level for economic, environmental, and social topics permeate the entire executive structure. The financial and economic issues are the responsibility of the executives appointed by the Finance and Investor Relations Management to answer for the four superintendents that compose that board (Controllership, Planning and Corporate Control, Investor Relations and Corporate Finance). Environmental issues are the responsibility of the executive appointed by the Vice-Chairman to occupy Environmental Management and Strategic Planning Management. Social issues are the responsibility of the executive appointed by the Board of Institutional Relations and Communication to occupy the Management of Coordination of Relations with Public Agents, the Personnel Management Board to occupy the Management of Human Relations and Human Resources and the Vice Presidency to occupy the Management of Strategy Planning and Management.

In 2018, the Board of Executive Officers met 65 times in order to discuss solutions and strategies for the best performance of the Company in all its areas of activity.

### **Fiscal Committee**

The Company also has a permanent Fiscal Committee, which is responsible for the attributions established in applicable Brazilian legislation, as well as in the laws of countries in which Cemig's shares are listed and traded, if not in conflict with the Brazilian law. The Fiscal Committee is multidisciplinary and is made up of five effective members and their respective alternates. The members of this Committee are also elected by the Shareholders' Meeting for two-year terms.

Primarily, the Committee monitors the acts of managers and verifies the fulfillment of their legal and statutory duties, as well as giving their opinion on the annual report of the management, stating in its opinion the additional information deemed necessary or useful for the deliberation of the Shareholders' General Meeting.

At the same time, the Committee is responsible for examining all non-operational complaints forwarded by the Ethics Committee. The complaints are received through an electronic system available in Cemig's Intranet environment, the Complaints Channel, and are analyzed. The Fiscal Committee shall propose treatment actions conducted by Internal Audit.

In 2018, the Fiscal Committee met 17 times.

### **Audit Committee**

The Audit Committee is an independent body, with its own budget, with a consultative and permanent nature. Its purpose is to advise the Board of Directors, to which it will report, and shall also carry out other activities that applicable laws and regulations assign to it. The Audit Committee has three members, most of whom are independent, appointed and elected by the Board of Directors at the first meeting held after the Annual Meeting, for a term of three years, which is not the same,. Re-election is permitted.

The members of the Audit Committee shall participate, when they take office, and annually, in specific training provided by Cemig. It is forbidden to reapply those who have not participated in the annual training provided by the Company in the last two years.

### 102-28

The Audit Committee shall verify the conformity of managers evaluation process, members of advisory committees to the Board of Directors and members of the Fiscal Committee. In 2018, the evaluation process proceeded as planned and the results, approved by the committee, are used for internal discussions and organizational improvements of the Company.

In addition to performance assessments of current managers and executives of the Company, the Audit Committee is responsible for conducting a background check of potential candidates for Cemig's strategic boards and committees. The background check is a procedure performed by the Compliance area regarding the professional history and legal records of all the names indicated to hold strategic positions in the Company.

# 5.4 RISK MANAGEMENT (CORPORATE AND SOCIO-ENVIRONMENTAL RISKS AND OPPORTUNITIES)

Cemig has a strict governance structure to support decision making, adequately subsidized by relevant levels, be their business areas, representative committees of the board or the Board of Directors or the Board of Directors itself.

### 102-11

In these decision-making flows, they take into account the Precautionary Principle, especially signaled by Cemig's Corporate Risk Management Policy and its declaration of risk appetite, which is also in compliance with legal and regulatory precepts that regulate activities of the electricity sector in Brazil

Cemig has a program for risk management, which allows to map and evaluate strategic risks and operational processes. This program consists of an integrated tool with multidisciplinary processes, coordinated by the risk management department, which provides technical support to the different areas of the Company. The objective of the program is to provide senior management information to make decisions regarding risks and opportunities of greater relevance.

The modeling and analysis of operations from the point of view of risk management aim at: (i) favor the achievement of the goals set by Cemig; (ii) improve performance; (iii) reduce costs and losses; and (iv) optimize investments in the control of activities.

Cemig has a risk management software, SAP RM (Risk Management) that enables the process of risk mapping to be done continuously, as the main activities related to risk register and management are carried out in the SAP RM.

#### 102-15

Risk management classifies identified risks as (i) process risks, which are those related to intra-managerial operations, limited to the activities of each process; (ii) macro-process risks, inter-managerial risks, whose impacts include different processes of the Company; and (iii) top risks, which are macro-process risks that may directly impact the Company's strategy.

Besides the classification listed above, risks are also categorized as Economic-Financial, Business, Legal Compliance, Compliance, Operational and Socio-environmental. Economic-Financial risks are those due to ineffective management and control of the organization's financial means, and influenced by external factors (e.g. credit availability, exchange rates, interest rate movements, etc.). Socio-environmental risks are those due to the deficient or inadequate environmental and social management, impacting on the environment and on the society. It also contemplates the potential effects of climate change on business, which may hinder new ventures or expansion of productive capacity.

# **Cemig's risk management process**

102-31 102-15

Corporate risk management enriches management dialogue by adding insights to the strengths and weaknesses of a strategy in case of a context change, as well as assessing the alignment of the strategy with the organization's mission and vision. Risk management planning considers factors that may present risks to the health and safety of employees, suppliers, customers, the general population and the environment. Eventually, opportunities are identified and developed in accordance with the Company's interests, especially regarding process efficiency.

The Committee of Sponsoring Organizations of the Treadway Commission - COSO, a world reference in the theme, stresses the importance of considering corporate risks in both strategy definition and follow-up. This approach to risk with strategy allows the organization not only to anticipate and understand that changes can go beyond the generation of potential crises, but also to create opportunities.

Corporate risk management integrates Cemig's Corporate Governance practices and has as its main activity the mapping of Top Risks. When a Top Risk is mapped for the first time in Cemig, the following steps must be followed:

- identification understanding the scope, causes and impacts of the risk;
- quantification estimation of the probability of occurrence of risks, as well as the po-2. tential loss caused by the impacts identified in the previous step;
- treatment survey of all actions and controls to mitigate risk, as well as the mitigating effect of these actions on the impacts mapped;
- monitoring insertion of risk in the corporate tool, monitoring of self-evaluations of controls and mitigation initiatives and validation of risk with its supervisor.

When there is a need to review a risk that has already been mapped, all information is updated by the system. After the risk is mapped, a report is generated containing the main information about that risk, called Risk Report.

The Corporate Risk Monitoring Committee (CMRC, Comitê de Monitoramento de Riscos Corporativos) is part of Cemig's risk management process, whose main duties are:

- Recommend, for approval by the Board of Executive Officers, guidelines and procedures to be adopted in the Corporate Risk Monitoring Process, aiming effectiveness and continuous improvement of the process;
- Continuously monitor the scenario in which the Company is inserted, as well as its
  corporate risk matrix, in order to identify the main risks and recommend priority mitigating actions to be proposed to the Board of Executive Officers;
- Monitor the structure of internal controls and actions taken to minimize the occurrence of events that compromise the achievement of Cemig strategic objectives.

### 102-29 102-30

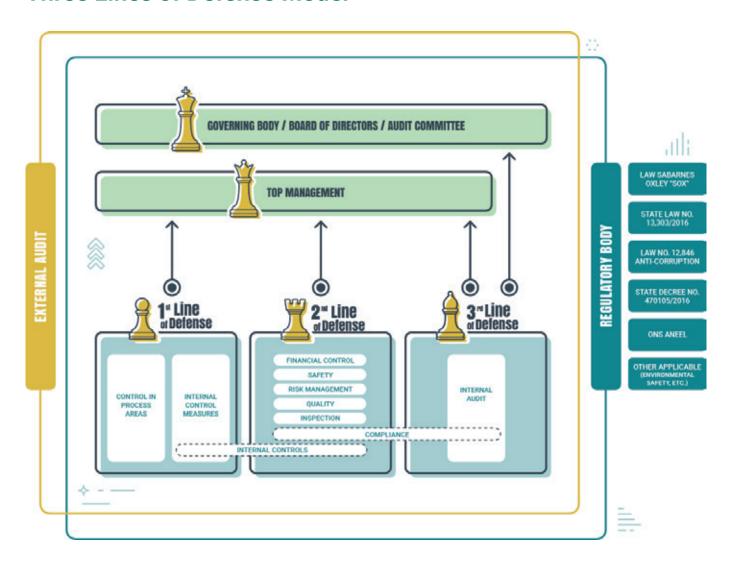
In 2018, the mapping of the Top Risks continued to be guided by themes that were prioritized by CMRC and validated by both the Board of Executive Officers and the Board of Directors, covering the Holding, Distribution, Generation, Transmission and Marketing business and registered in SAP RM. The Risk Matrix is approved by the Board of Directors every year.

The Board of Directors approved the top risks mapping process, prioritized during 2018 within the company's risk management processes. In this process, the probabilities of risk materialization are estimated according to their causes and severity of their consequences. A survey of both control activities and mitigiation activities for each risk is also carried out. The Top Management is updated on the Top Risks, as well as on the risk treatments suggested by the CMRC, periodically, or when necessary.

Cemig's current risk management policy is a public document, approved by the Board of Directors, which guides not only the companies Cemig D and Cemig GT, but also all the wholly-owned subsidiaries. This policy is guided by principles that translate the best market practices, explaining the risk appetite guidelines and being especially aligned with the "Three Lines of Defense" governance model.

The "Three Lines of Defense" model is a simple and effective way to improve risk management communication and internal controls by clarifying key roles and responsibilities, helping to ensure the continued success of risk management initiatives.

### **Three Lines of Defense Model**



The holder of each risk and/or internal control is responsible for managing its own risk and/or control mechanism. The departmentes of Compliance, Risk Management and Internal Controls are responsible for coordinating the respective processes in Cemig and supporting the holders of risks and controls. The Internal Audit is responsible for periodically verifying compliance and effectiveness of the internal control, compliance and risk management systems.

# **Safety of Dams**

Given the current scenario of questioning and insecurity regarding the stability of dams, it is important to highlight the actions and programs that Cemig developed to mitigate risks linked to the operation of dams.

In order to address one of its main water risks and ensure the safety of the dams operated and maintained by Cemig, the company uses a methodology based on national and international best practices, also in view of Federal Law No. 12.334/2010, which establishes the National Dams Safety Policy, and its associated regulation (Normative Resolution No. 696/2015 of ANEEL)<sup>19</sup>.

In this context, the procedures for field inspection, collection and analysis of instrumentation data, elaboration and updating of dams safety plans, planning and monitoring of maintenance services, analysis of results and classification of civil structures are contemplated. Based on the classification of structures, the frequency of safety inspections and monitoring routine are established.

The vulnerability of each dam is automatically calculated continuously and monitored by the Dam Safety Specialist System (Inspector). The software was originally developed through an R&D project, being equipped with anomaly georeferencing tools that allow a global analysis of the behavior of each dam as well as systemic analyzes of the portfolio. The Inspector is currently undergoing an update, aligned with technological developments and new regulatory requirements. It also incorporates risk management concepts.

Dams management activities also include periodic safety reviews, which may involve, in addition to Cemig's professionals, a multidisciplinary team of external consultants, when all safety-related issues are carefully verified.

Also as part of these activities, Cemig prepared the specific Emergency Action Plans (PAE) for each dam, a new Proximity Program<sup>20</sup> Proposal, the creation of the "Working Group: Dam safety of hydroelectric power plants operated and maintained by Cemig GT" and the construction of the Crisis Management Plan with the dams.

### I. EMERGENCY ACTION PLANS

Cemig was the pioneer in Brazil of emergency action plans preparation for the collapse of dams, and began to study the theme in 2003. Currently, specific PAEs are available for each dam, covering the following items:

- identification and analysis of possible emergency situations;
- malfunction identification procedures or potential collapse conditions;
- notification procedures;
- preventive and corrective procedures to be adopted in emergency situations;
- responsibilities; and
- dissemination, training and updating.

<sup>&</sup>lt;sup>19</sup> The holder of each risk and/or internal control is responsible for managing its own risk and/or control mechanism. The departmentes of Compliance, Risk Management and Internal Controls are responsible for coordinating the respective processes in Cemig and supporting the holders of risks and controls. The Internal Audit is responsible for periodically verifying compliance and effectiveness of the internal control, compliance and risk management systems.

<sup>&</sup>lt;sup>20</sup> In portuguese, Programa Proximidade.

The PAE targets two audiences:

- 1. Internal PAE: document in which all the detection, prevention and correction procedures to be adopted in an emergency situation are described. The document aims to provide a relative degree of certainty and agility in the decision making, by the technical staff involved, and, as far as possible and adequate, to preserve the structure of the dam, preventing the accident;
- 2. **External PAE:** document in which the interfaces between the Company and the external public are established during the emergencies detected.

In compliance with Aneel Normative Resolution No. 696/2015, the internal PAEs are being handled by the company's responsible management for the operation and maintenance of the hydroelectric power plants. The PAEs are made available to enterprises and dam safety technical personnel and civil maintenance.

The external PAE should be available in the ventures, in the municipalities involved, as well as with the competent authorities and civil defense organizations.

The external document focuses on presenting the risk of flooding caused by ordinary floods and possible dam collapse events. The objective is to establish a culture of readiness for flood situations in the communities living along the river banks where Cemig's power plants are located.

In 2017 and 2018, a total of 18 External PAEs were delivered, encompassing 60 municipalities. During 2019, another 24 External PAEs will be delivered to approximately 45 municipalities.

Periodically, internal trainings of these PAEs are carried out, which can be based on discussions or operations. The first one can be implemented via seminars, workshops, tabletop exercises or games, while those that are based on operations can be drill or carried out through simulation. These trainings aim to evaluate the PAE and propose improvements, especially in terms of communication flows and the decision-making process.

### II. PROXIMITY PROGRAM<sup>21</sup>

In 2018, Cemig continued its policy of strengthening the relationship with external stakeholders for emergency situations, especially with the Municipal Protection and Civil Defense Coordination (COMPDEC).

In accordance with National Dam Safety Policy, and its associated regulations, Cemig will implement an alert/alarm strategy and means of communication, in the communities that may be affected by emergency situations arising from dam collapses.

<sup>&</sup>lt;sup>21</sup> In portuguese, Programa Proximidade.

Within the new work proposal of the "Proximity Program", a program of relationship with communities around Cemig reservoirs, a work plan is aligned with State Civil Defense Coordination of Minas Gerais (CEDEC MG) for all the COMPDEC involved.

In this plan, the COMPDECs are addressed at least twice: a first meeting to prepare the PAE, promoting an alignment of information on legislation, entity obligations and work schedule and a second meeting, where the PAE will be delivered with studies of flow propagation, defining the flood zones. Such a product will subsidize the COMPDEC teams in their emergency scenarios of dam collapse for the Municipal Contingency Plans and will allow to establish means of mitigation of material damages and lives losses.

In order to improve the perception of risk and allow Municipal Contingency Plans to be developed with better technical content, in 2018, Cemig carried out, through a specialized company, surveys of topography for the preparation of the cartographic base of downstream valley of 43 hydroelectric power plants. The project under development also allows:

- perform estimation of hydrograph collapse;
- propagation of ordinary flood and collapse flows simulation;
- develop thematic maps;
- a preliminary study of mass notification system and estimated population reached.

In addition, the Proximity Program will have a community and COMPDEC relationship mobile application. The application will contain hydrological, operational and climatological information in real time, which will serve as a working tool for COMPDEC teams.

By 2019, the plan is to held approximately 40 meetings involving some 500 COMPDEC agents.

The gain of the approach adopted by Cemig is the disclosure of the impacts caused by the natural floods, contributing to greater safety of the riverine populations and, consequently, contributing to plans and projects that aim to support an effective reaction to the resilience of the cities to the flood events, and overcoming its effects.

# III. WORKING GROUP: SAFETY OF DAMS FOR HYDROELECTRIC POWER PLANTS OPERATED AND MAINTAINED BY CEMIG GT

The "Working Group: Safety of dams for hydroelectric power plants operated and maintained by Cemig GT" aims to increase the integration between different areas of the Company. Its work was completed in December 2018, and several initiatives to identify vulnerabilities, risks and mitigation actions were developed. Among the activities of the group, the Crisis Management Plan was built.

### IV. CRISIS MANAGEMENT PLAN

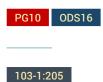
The Dams Crisis Management Plan aims to:

Formalize synchronized actions that will be taken in case of emergencies with dams, in order to avoid human losses and reduce material losses;

- Ensure continuity of company's activities;
- Prevent the organization's critical business processes from being affected;
- Preserve the image;
- Provide information to various publics and;
- Minimize impacts on the potentially affected population.

Throughout 2019, the Crisis Management Plan will be implemented with the company's senior management and together with regional offices for decentralized actions.

# 5.5 ETHICS AND TRANSPARENCY



Cases of corruption, legal nonconformities and/or information of a dubious nature contradict Cemig's commitments and corporate vision, and may have significant economic impacts on the company because of its potential to compromise its reputation. In addition, such cases may interfere with the ability of stakeholders to evaluate and make informed decisions about Cemig. The instability generated by any misconduct of the Company and its representatives presents a risk to the business and, therefore, stands out as a priority material topic for Cemig and its stakeholders.

The Ethics and Transparency section presents information about Cemig's performance in managing this issue and the important implications for the Company's activities and processes.

Cemig's exposure to potential occurrences of this nature is a result of its business relations and its status as a mixed-economy company. For this reason, the issue is treated with due seriousness through internal processes and specific mechanisms of risk identification, management and other preventive/corrective measures.

103-1:205 103-2:205 103-3:205 205-2 102-17 205-1

Cemig has a process in force that identifies risks associated with fraud and corruption in its activities. It also applies tools and mechanisms to prevent the materialization of these risks, as well as procedures to deal with specific cases. All Company's operations are evaluated against these risks.

In 2018, Cemig's Fraud and Corruption Risk Matrix was composed by ten risks, which were related to the probability of events associated with either fraud, corruption or conflits of interest take place. The mapping process of those risks reinforces the relevance of this issue to the Company.

As a signatory of the Business Pact for Integrity and Against Corruption (Ethos Institute), Cemig has embraced guidelines and procedures to conduct its activities and relationship with public entities. The compliance with, and subsequent implementation and monitoring of the Pact's guidelines, has been improving the management of the issue within the Company. Among the improvements are the preparation of a new regulation of bidding processes and agreements for the Company; and the creation of a Statutory Audit Committee and the linkage of the Compliance and Risk Management areas to the Presidency.

In order to guide the conduct of its managers, tax advisors, employees, contractors and subcontractors on external communication with the press, market, investors and public agencies, Cemig has established a Code of Conduct, known as the Declaration of Ethical Principles and the Code of Professional Conduct. The document also presents the Ethical Process Management, covering the role of the Ethics Committee, the process of handling complaints, the policies of non-retaliation and non-identification and disciplinary, punitive and accountability processes.

Also in this context, Cemig has a Compliance Program - 2016/2018 cycle, approved by its Board of Directors. The Program has two main objectives:

- Promote an organizational culture to encourage ethical conduct and commitment to compliance with internal and external norms;
- Prevent, detect and respond to compliance gaps and misconduct.

This Program establishes the guidelines and means to achieve its objectives, among which: (i) standards and procedures documentation; (ii) training and communication to employees; (iii) the implementation of internal controls; (iv) availability of channels for consultations and complaints; and (v) clear definition of the role of senior management and leadership in the program.

Regarding the communication actions of the Compliance Program, Cemig actively discloses information on the ethical culture in communications disclosed on the Intranet, where a set of internal rules and procedures complying with the current legislation is available to all employees.

In addition, thematic communication campaigns are carried out. In 2018, a campaign was launched to prevent and combat fake news. In this campaign, banners, posters and stickers were displayed at Cemig headquarters and offices in Minas Gerais. Digital media was displayed on existing communication channels such as login screen, Intranet, Cemig OnLine and Energia da Gente (Cemig digital newspaper, aimed at the internal public).

Another relevant action is a lecture to new employees, at the time of their entry, on general aspects of corporate culture. Some of them are related to organizational ethics, such as information security policy, anti-fraud policy and disciplinary penalties.

Some Compliance actions, such as promoting the culture of compliance, are measured by the number of employees and contractors reached by campaigns and publications, which in 2018 totaled 9,343. Regarding training, in 2018, 4,064 people completed the training on "GRC - Governance, Risks and Compliance: An Overview" and 4,866 completed the training on the Company's Statement of Ethical Principles and Code of Professional Conduct.

In order to constantly improve Cemig's approach to Ethics and Transparency, mechanisms for assessing the effectiveness of management and internal controls are carried out in Internal Audit and External Audit processes. Audit is based on periodic (triennial, annual) plans and is intended to ensure compliance with internal laws, standards, rules and procedures.

Cemig also has close contact with its suppliers to communicate and promote anticorruption policies and procedures, paying attention to the fulfillment of these commitments both in its operations and in the value chain. Two anticorruption clauses, which deal with compliance with rules of the "Anti-Corruption Law"<sup>22</sup> and ethical principles of professional conduct contained in the Anti-Fraud Policy and in the "Declaration of Ethical Principles and Code of Professional Conduct of Cemig," are present in all agreements of:

- Purchase and sale of assets;
- Purchase and sale of energy related to bidding processes promoted by Cemig;
- · Loans and financing of operations;
- Shareholder's Agreements;
   Covenants:

- Sponsorship;
- Decentralized agreements for procurement of materials and services; and,
- Centralized agreements for procurement of materials and services.

Thus, since these agreements cover practically all of Cemig's suppliers and commercial partners, it is possible to state that all of them were informed about anti-corruption rules and procedures that they must comply with.

Although the Company works to avoid any type of misconduct, it is necessary to be prepared to deal with the possible episodes identified and classified as such. Cemig has resources that instrumentalize the registration and treatment of any irregularities or ethical dilemmas affecting its operations.

The system that includes the receipt (via intranet, through the Channel of Anonymous Denunciations and email of the Ethics Committee), registration, process of verification and treatment of complaints and denunciations is applied only to internal public. There are other channels of communication available to receive manifestations and complaints from external stakeholders (physical correspondence and Ombudsman, via website and telephone), as well as registration procedure and verification flow.

<sup>&</sup>lt;sup>22</sup> Law No. 12.846/2013, of 08/01/2013

The entire system is under review for articulation of the reception channels, registration and verification processes, manifestations and complaints from internal and external stakeholders.

Cemig's Complaints Channel (system available on intranet, Ethics Committee e-mail, physical correspondence and telephone) preserves 100% of the anonymity of those who complain and denounce, allowing any situation that represents a deviation from the Code of Conduct to be reported. In 2018, Cemig received 182 complaints, all of which were sent for verification. After completion, the replies were made available to the complainants. The complaints must be filed within a maximum period of 60 days.

Detail of the complaints subjects	Completed	In progress	Total
Business Relationship	15	3	18
Health and Safety	10	0	10
Corporate Infrastructure	5	0	5
Material handling	5	0	5
Others	32	1	33
People Management	20	3	23
Suppliers	32	1	33
Misconduct	24	4	28
Complaint involving Human Rights	0	0	0
Complaint involving Opportunity Equality	26	0	26
Complaint involving Gender Equity	3	0	1
Total	170	12	182

### 205-3

All of the complaints are considered relevant when they are first received. During the process of verification and investigation, they are classified and treated according to their content, for the purpose of applying disciplinary measures, when diversion of conduct is ascertained and proven.

Due to noncompliance with the Code, 26 warning notices and 21 suspensions were applied, totaling 47 measures adopted as disciplinary penalties.

In 2018, five employees were dismissed on grounds of misconduct and no public corruption proceedings were filed against the organization or its employees.

Due to transversality and decentralization of activities related to transparency, compliance and fight against corruption, it has not been possible so far to accurately determine the volume of financial or human resources dedicated to this topic.

### 415-1

Cemig does not allocate resources to organizations whose main role is to create or influence public policies, nor does contribute to political campaigns, political organizations or tax-exempt groups whose function is to influence political campaigns or legislative activities, including chambers of commerce, rcommercial registries and such. It also does not register lobbyists or lobby groups.



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# **6. STRATEGY**

# **6.1 CEMIG'S STRATEGY**

### 102-26

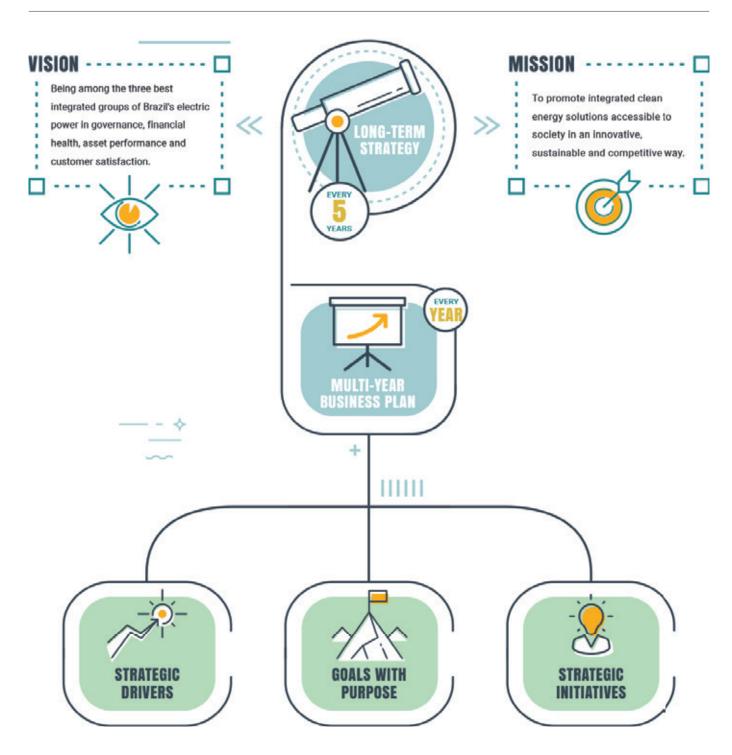
Cemig's Long-Term Strategy is consists of long-term guidelines and is reviewed every five years. The Multi-Year Business Plan involves strategic drivers, indicators, goals and initiatives of the holding company and business, and is subject to annual reviews.

In 2018, after a year of reflection on business strategies, analyzes and discussions were carried out on the scenario in which the Company operates, its availability of resources and the necessary skills to face market opportunities. Due to these reflections important references for the review of the Company's strategy were defined.

Considering the results of this reflection and analysis, the Board of Executive Officers presented to Board of Directors the multi-annual Business Plan and the update of the long-term strategy with analysis of risks and opportunities.

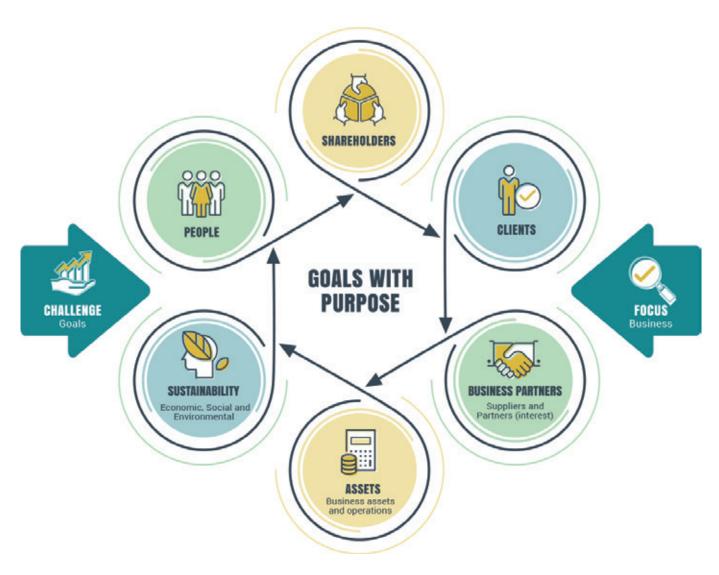
On November 27th, 2018, the Board of Directors approved Cemig's new strategic planning, comprising the Long-Term Strategy (2019-2040) and the Multi-Year Business Plan (2019-2025). Cemig's Strategic fundamentals (mission, vision and values) have been updated as well as Cemig's directives, drivers, indicators, goals and initiatives: Generation, Transmission, Distribution, Marketing and Distributed Generation.

# **Cemig's Strategic Planning**



Cemig has incorporated the concept of strategic planning based on the belief that each goal should have a business-focused purpose. For this objective, six dimensions were defined to be monitored through indicators and targets associated with Cemig's holding company and business.

### **Goal Classification**



Cemig has incorporated the concept of strategic planning based on the belief that each goal should have a business-focused purpose. For this objective, six dimensions were defined to be monitored through indicators and targets associated with Cemig's holding company and business.

Following this concept, Cemig presents, in the table below, the goals outlined for 2018 results, updates and redefinitions. It is important to highlight that the table does not disclosure all of the Company's goals, since some of them are confidential because they are strategic for the business.

Subject Theme	Goal	Performance in 2018	Goal Redefinition or Update
	Incorporate, until 2019, the Integrated Vegetation Management methodology as the standard procedure for opening Transmission Lines passing lanes.	This type of service was contracted for Cemig GT in 2018. For Cemig D, the agreements are going through a analysis process.	The goal remains in 2019.
Biodiversity	Annually, carry out the Cemig Circuit of Urban Arborization.	In 2018, the 6th Circuit was held in the city of Lavras, in partnership with the Federal University of Lavras (UFLA) and was attended by approximately 130 people.	The goal remains in 2019.
	To have at most 819kg of affected biomass by 2021. This goal will be reached in a stepwise manner: 2018: 859kg; 2019: 845kg; 2020: 832kg; 2021: 819kg	In 2018, the affected biomass was 514.88kg; details are presented in the Biodiversity chapter.	The goal remains until 2021.
Communities and social investment	To have, by 2021, 35% of employees participating in the AI6% Program.	In 2018, 30.3% of the employees participated in the AI6% Program.	The goal remains until 2021.
	Complete the preparation of Cemig's Sustainability Plan in 2019.	To be calculated in 2019.	
	Present, in December 2019, a net debt/EBITDA ratio of less than 3.5.	To be calculated in 2019.	
	At the end of 2019, to have an EBITDA between BRL 5,133 billion and BRL 4,733 billion.	To be calculated in 2019.	
Economic performance and financial equilibrium	Distribute, in 2018, at least 50% of the Net Income in the form of dividends.	The Board of Directors resolved to submit to the Annual Meeting, to be held on 04/30/2019, the proposal to allocate BRL 867 million as mandatory minimum dividends to the Company's shareholders, representing 51% of the net income in 2018.	Distribute at least 50% of Net Income in the form of dividends in 2019.
	Maintain, in 2018, the consolidated indebtedness of the Company in an amount equal to or less than two (2) times the EBITDA (earnings before interest, taxes, depreciation and amortization).	The Company's indebtedness at December 31, 2018 was BRL 14,772 million, a value of 3.9 times EBITDA.	The goal remains in 2019.
	Increase, in 2018, cash generation: present EBITDA of at least BRL 4.3 billion (revised goal).	In 2018, the consolidated EBITDA reached BRL 3,781 million. Although it did not reach the target, Cemig's cash generation grew by 8.28% in 2018.	
	Reduce, by 2020, the Company's water consumption by 4%, based on consumption in 2011.	In 2018, there was a reduction of 62.53% in relation to consumption in 2011.	The goal remains until 2020.
	Reduce, by 2020, the electricity consumption by 4%, based on consumption in 2011.	In 2018, there was a reduction of 11.6% in relation to consumption in 2011.	The goal remains until 2020.
	To have, in 2018, the Efficiency Index in the Power Plant Planning (IEPE) greater than 93%.	In 2018, the IEPE result was 93.23%.	To have, in 2019, the Efficiency Index in the Power Plant Planning (IEPE) greater than 93%.
	To have, by 2020, 99% of industrial waste recycled, regenerated or disposed of.	In 2018, 99.58% of industrial waste was recycled, regenerated or disposed of.	The goal remains until 2020.
Eco- efficiency and environmental management	Reduce, by 2020, the intensity (ton/MWh) of particulate matter (PM) emissions from thermal source by 2% and PM emissions from vehicular sources by 4%, with 2017 as base year.	In 2018, there was a reduction of 0.25% in the emissions intensity of particulate matter from thermal source and 6% of particulate matter emissions from the vehicular sources in relation to 2017.	The goal remains until 2020.
	Reduce, by 2020, the intensity (ton/MWh) of Nox emissions from thermal source by 1% and Nox emissions from vehicular sources by 4%, with 2017 as base year.	In 2018, there was no reduction in the NOx emission intensity from the thermal source. Regarding NOx emissions from vehicle sources, there was a 6% reduction compared to 2017.	The goal remains until 2020.
	Reduce, until 2020, the intensity (ton/MWh) of SOx emissions from the thermal source by 25%, with 2013 as the base year, and SOx emissions from vehicle sources by 15%, with 2017 as the base year.	In 2018, there was no reduction in the SOx emission intensity from the thermal source. Regarding SOx emissions from vehicle sources, there was a reduction of 9% compared to 2017.	The goal remains until 2020.

Personnel management	Implement, in 2018, the Cemig Volunteer Program.	In August 2018, Cemig launched the Cemig - VOCE Entrepreneurial Volunteer Program, whose first results are detailed in the Community chapter.	
	To have, in 2018, the trainning efficiency index in greater than 75%.	Training efficiency index was 90.04% in 2018. In 2016 and 2017, training efficiency ratio was respectively 93,3% and 93,4%.	To have, in 2019, the trainning efficiency index greater than 80%.
	To have, in 2018, more than 15 hours of training per employee.	In 2018, the Company performed 38.31 hours of training per employee.	To have, in 2019, more than 15 hours of training per employee.
	To have, in 2021, an accident frequency rate (TFA) of less than 1.80.	In 2018 the workforce TFA was 1,52.	The goal remains, the TFA should decrease by 1.83 by 2021.
	To obtain, in 2021, the Aneel Consumer Satisfaction Index (IASC) equal to 72.	In 2018, the IASC was 68.41.	The goal remains, it is expected to evolve by 3.59 percentage points by 2021.
Management and relationship	To obtain, in 2018, the Satisfaction with Perceived Quality Index (ISQP) greater than 82%.	In 2018, the ISQP was 82.4%.	
with stakeholders	To maintain, in 2019, the Quality Index of Contracted Services by at least 85%.	To be calculated in 2019.	
	To obtain, in 2018, the Supplier Performance Index (IDF) of materials by 80%.	In 2018, the IDF of materials was 82%.	To have, in 2019, IDF greater than 80%.
Climate	Reduce, by 2021, the direct emissions (scope 1) of greenhouse gases (in tCO2e) by 8%, based on the verified emissions in 2014.	In 2018, there was a reduction of 94% in relation to the 2014 emissions.	The goal remains until 2021.
Change	Reduce, by 2020, the SF6 losses percentage by 25%, based on the actual loss percentage verified in 2016.	In 2018, there was a 16% reduction in the SF6 losses percentage in relation to the one of 2016.	The goal remains until 2020.
	To have, in 2018, the DEC below 10.58 hours.	In 2018, the measured DEC was 10.05 hours.	To have, in 2019, the DEC below 10.53 hours.
	To have, in 2018, the FEC below 7.26.	In 2018, the measured FEC was 5.06.	To have, in 2019, the FEC below 7.24 hours.
Quality of power supply	To have, in 2018, total losses lower than 11.75%, as established by the regulatory goal.	The losses measured in 2018 totaled 12.48%. Cemig has directed efforts to improve the manageable factors, aiming at meeting the goal.	To have, in 2019, total losses lower than 11.75%, as established by the regulatory goal.
	Make investments of BRL 4.5 billion between 2018 and 2022 under the Distribution Development Plan (PDD).	In 2018, BRL 825.5 million were invested in the PDD, out of a total of BRL 1.052 billion approved for the year.	The goal remains, the amount to be invested by the end of the period in 2022 is equivalent to BRL 3.674 billion.
Technology,	Disburse BRL 290 million in research and development (R&D)1.	The total amount disbursed in 2018 for R&D projects was BRL 59,998,492.87	The disbursement goal between 2019 and 2023 is BRL 440.3 million.
innovation and energy alternatives	Invest, in 2018, the amount of resources equivalent to 0.30% of Net Operating Revenue (ROL) in research, development and innovation (INOV index).	In 2018, 0.51% of the year net revenue was allocated to research, development and innovation.	Invest, in 2019, resources equivalent to 0.30% of Net Operating Revenue (ROL) in research, development and innovation (INOV index).

<sup>&</sup>lt;sup>1</sup> This amount refers to the set of selected projects that were under the contracting process in 2018. This set of projects will take place between 2018-2022 (we have projects up to 48 months in duration). Therefore, the expectation of realizing this value is in the duration of these projects.

The follow-up dynamics of Multi-Year Business Plan are based on the long-term strategic guidelines (2019-2040) and, as a guide, the strategic drivers defined for the holding and for business (2019-2025). The target is indicators and goals to achieve, and strategic initiatives help achieving results.

# Follow-up Dynamics of the Multi-year Business Plan



# **6.2 CONCESSIONS**

ODS9 ODS7

Cemig's concessions for resources and infrastructures exploitation in areas of generation, transmission and distribution of electricity and gas are one of the most valuable intangible assets of the Company. The activities of the Cemig Group are supervised and regulated by ANEEL, under concession agreements of the Federal Government.

The concession agreements grant Cemig and its subsidiaries the right to operate electricity and natural gas services in their territories. In electric power generation, concessions are given for each power plant. In the distribution, electricity and gas, concessions are given by municipality, where the concessionaire now holds the service monopoly.

Concessions	Company holding the concession/authorization	Concession/authorization agreement	Due date
Power Generation			
Hydroelectric Power Plants			
Emborcação (1)	Cemig GT	07/1997	jul/25
Nova Ponte (1)	Cemig GT	07/1997	jul/25
Santa Luzia (1)	Cemig GT	07/1997	feb/26
Sá Carvalho (1)	Sá Carvalho	01/2004	dec/24

Rosal (1)	Rosal Energia	01/1997	may/32
Machado Mineiro (1)			jul/25
Salto Voltão (1)	Walanza Farrata	Resolution 331/2002	oct/30
Salto Paraopeba (1)	Horizontes Energia		oct/30
Salto do Passo Velho (1)			oct/30
SHP Pai Joaquim (1)	Cemig SHP	Authorizing Resolution No. 377/2005	apr/32
Queimado (Consortium) (1)	Cemig GT	06/1997	jan/33
Salto Morais (1)	Cemig GT	02/2013	jul/20
Rio de Pedras (1)	Cemig GT	02/2013	sept/24
Luiz Dias (1)	Cemig GT	02/2013	aug/25
Poço Fundo (1)	Cemig GT	02/2013	aug/25
São Bernardo (1)	Cemig GT	02/2013	aug/25
Xicão (1)	Cemig GT	02/2013	aug/25
Três Marias (2)	Cemig Geração Três Marias	08/2016	jan/46
Salto Grande (2)	Cemig Geração Salto Grande	09/2016	jan/46
Itutinga (2)	Cemig Geração Itutinga	10/2016	jan/46
Camargos (2)	Cemig Geração Camargos	11/2016	jan/46
Coronel Domiciano (2)			
Joasal (2)		12/2016 and 13/2016	jan/46
Marmelos (2)	Cemig Geração Sul		
Paciência (2)			
Piau (2)			
Dona Rita (2)			
Ervália (2)		14/2016 and 15/2016	jan/46
Neblina (2)	Cemig Geração Leste		
Peti (2)	Comy activade prote		
Sinceridade (2)			

Cajurů (2)			
			jan/46
Gafanhoto (2)	Cemig Geração Oeste	16/2016	
Martins (2)			
Thermoelectric Power Plants			
lgarapé (1)	Cemig GT	07/1997	aug/24
Power Transmission			
Basic Network (3)	Cemig GT	006/1997	jan/43
Substation - SE Itajubá (3)	Cemig GT	79/2000	oct/30
Power Distribution (4)			
	Cemig D	002/1997 003/1997 004/1997 005/1997	dec/45
Gas Distribution (4)			
	Gasmig	State Law No. 1.021/1993	jan/53

- (1) They refer to power generation concession agreements that are not within the scope of ICPC 01/IFRIC 12 whose infrastructure assets are recorded as fixed assets because the grantor does not control the price of the services rendered, being its Power commercialized mainly in the Free Contracting Environment ("ACL", Ambiente de Contratação Livre).
- (2) They refer to power generation concession agreements whose revenue related to the granting bonus is within the scope of ICPC 01/ IFRIC 12, and is classified as a financial asset of the concession.
- (3) They refer to power transmission concession agreements that are within the scope of ICPC 01/IFRIC 12, within the financial asset model, and the recognition of revenue and costs of works related to the formation of financial assets through incurred expenses. The indemnifiable financial asset is identified when the infrastructure implementation is finalized and included as remuneration for the infrastructure implementation services.
- (4) They refer to concession agreements that are within the scope of ICPC 01/IFRIC 12 and whose concession infrastructure assets are recorded according to the bifurcated model between intangible assets and financial assets.

In the generation business, Cemig and its subsidiaries sell energy through auctions for distributors to meet the demands of their captive market (Regulated Contracting Environment) ("ACR", Ambiente de Contratação Regulado) and sell energy to free consumers in the Free Contracting Environment ("ACL", Ambiente de Contratação Livre).

In ACL, energy is traded through generation concessionaires, Small Hydroelectric Plants, self-generators, marketers and energy importers. Free consumers are those whose demand exceeds 3 MW at a voltage equal to or greater than 69 kV at any voltage level, only if supply has started after July 1995.

Concession agreements of Jaguara, Miranda, Volta Grande and São Simão hydroelectric power plants predicted the termination of Cemig concession on November 28th, 2017, November 28th, 2017, November 30rd, 2017 and May 9th, 2018, respectively. Thus, as from these dates, Cemig did not account for the results of operations of these power plants.

Transmission concession agreements authorizes Cemig to charge the transmission system usage fee (TUST, Tarifa de Uso do Sistema de Transmissão). Tariffs are readjusted annually on the same date as the adjustments of the Annual Revenues Allowed (RAP, Receitas Anuais Permitidas) of the transmission concessionaires. This tariff period begins on July 1st of the year of publication of the tariffs and lasts until June 30th of the subsequent year.

Large quantities of electricity are transmitted over long distances using 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, who produces or consumes electricity, is entitled to use this Basic Network, subject to certain technical and legal requirements. This is called Free Access, guaranteed by Law and ANEEL.

The payment to use the Basic Network also applies to generation of Itaipu Binacional. However, due to legal characteristics of this power plant, the corresponding charges are assumed by the distribution concessionaires holding the respective shares of the power plant's power.

For transmission concessions, the portion of assets that will not be amortized during the concession is recorded as a Financial Asset since there is an unconditional right to receive cash or other Financial Assets directly from the Government at the end of the term of the agreement.

Cemig D has a concession (from ANEEL) for the exploration of electricity distribution activity in most of the State of Minas Gerais, due in December 2045.

According to the concession agreement, all the assets and facilities that are linked to the provision of the electricity distribution service and have been realized by the utility company are considered reversible, being part of the collection of the respective concession. These assets will be reverted to the Government upon termination of the agreement, after making the evaluations and determination of the amount of compensation due to the utility company, observing amounts and dates of incorporation into the electric system.

Cemig D does not have compensatory payment obligations for the exploitation of the distribution concessions. It is required to meet the quality requirements and investments foreseen in the concession agreements. The concession agreement and the Brazilian legislation establish a maximum price mechanism that allows three types of tariff readjustments: (i) an annual adjustment; (ii) a periodic review; and (iii) an extraordinary review.

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

In addition, ANEEL conducts a periodic review of tariffs every five years to identify changes in Cemig D's costs as well as to establish a factor based on gains of scale applied in annual tariff readjustments in order to disclosure such gains with Cemig D consumers.

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

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

Concessions for the distribution of natural gas are state-owned. In Minas Gerais, natural gas tariffs are set by a regulatory agency, the State Department of Economic Development, according to the market segment. The tariffs are composed by a portion of gas cost and a portion related to gas distribution. Each quarter, tariffs are adjusted to pass on the cost of gas and once a year to adjust the portion to cover the costs related to the provision of the distribution service - remuneration of invested capital and cover all operational, commercial and administrative expenses carried out by the Concessionaire.

In addition to these adjustments, in April 2015 the Economic Development Secretariat sent to the subsidiary Gasmig, the Official Letter SEDE/GAB/No. 303/2014, informing the schedule for the 1st Tariff Review cycle, which lasted until the second half of 2017. These reviews shall occur every five years, starting at the end of this first cycle, with the purpose of evaluating the variations of the Company's costs and adjusting the tariffs. Thus, the next review is planned for 2022. The Concession Agreement also provides for the possibility of an extraordinary revision of the tariffs if there are motivations that jeopardize the economic-financial balance of the Concession.

On December 26th, 2014, the "Second Amendment to the Concession Agreement" was signed between Gasmig and the Government of the State of Minas Gerais, extending for a further 30 years the concession term for Gasmig to operate the piped industrial, commercial, institutional and residential gas services in Minas Gerais, changing its maturity from January 10th, 2023 to January 10th, 2053.

# 6.3 INVESTMENTS IN GENERATION, TRANSMISSION AND DISTRIBUTION AND DISINVESTMENT PROGRAM

ODS8 ODS9

On June 1<sup>st</sup>, 2017, Cemig formalized a strategy to restore Company's financial equilibrium through accelerated reduction of its net indebtedness.

The Disinvestment Program was prepared in a scenario of economic crisis that is still relevant in 2018. The objective was to establish a process of sale of assets in accordance with the following criteria to prioritize the assets to be divested:

- a. assets with greater liquidity;
- b. assets that do not bring short-term returns; and
- c. non-strategic assets and/or minor holdings.

### 102-10

In order to do so, a portfolio was selected that would meet the needs of deleveraging, considering an expectation of success of at least 50% until the first half of 2018, since the processes of sale are subject to legal, corporate and regulatory restrictions. Until December 2018, the divestment operations were concluded, amounting to BRL 1,529 thousand, against an expectation of BRL 4,023 thousand, as shown below:

COMPANY	VALUE (BRL MM)	STATUS
RENOVA	17	Divestiture of the wind farm Umburanas
taesa	717	Sale of TAESA Units
TRANSMINEIRA Transmissão Minora	81	Transfer to TAESA
CEMIG	649	Sale of assets
<b>SLight</b>	65	Divestiture of RME shares in Light, 49.99% capital surplus (Nov - 2018)
TOTAL		1,529

On December 14th, 2018, the Board of Directors approved the maintenance of the activities related to the Divestment Program. The objective is to negotiate the shares of Cemig's subsidiaries for total collection of BRL 5,416 thousand, as follows:

102-10

COMPANY	INTEREST (%)	VALUE¹ BRL MM
RENOVA ENERGIA	-	1
<b>S</b> Light	49.99	1,598²
SantoAntônio	18.13	887³
GASMIG	Until 49	1,180³
Consórcios de Exploração de Gás	24.50	213
norteenergia	11.69	1,542³
Cachoeirão, Pipoca, Paracambi	49	125³
TOTAL		5,416

### A

Cemig Telecom.

- One of the main movements, in terms of Cemig's divestment program in 2018, was the sale of 100% of the assets of the subsidiary Cemig Telecom. The Company sold its telecommunications branch in November, for a total of BRL 649 million. In an auction held in Belo Horizonte, the American company American Tower and Algar Soluções got the two lots offered in bidding procedure No. 500-Y12121 of
- Another relevant fact concerns the sale held by S.A. A Rio Minas Energia Participações S.A., a member of Light S.A.'s controlling block. The mentioned company sold 4,350 thousand shares, representing 2.13% of Light's capital stock, for a total amount of BRL 64.5 million.

In addition, the company informs that, with this sale, the sum of the interests of Cemig, RME and Luce Empreendimentos e Participações S.A. in Light's capital stock is now 49.99%. Cemig reaffirms its decision to divest its entire stake in Light's capital stock, in accordance with its widely disseminated Divestment Program, in light of market opportunities.

Cemig pursues constant improvement of services provided to its costumers and consumers, at the same time as structures company's cash flow, balancing finances and conducting negotiations. Cemig seeks to achieve its main objective: to offer the best quality of service, prioritizing continuity of energy supply and fast reestablishment in case of emergency occurrences, focusing on final consumers.

<sup>1</sup> Under evaluation |

<sup>2</sup> Market value (B3) on 11/30/2018; BRL 15.68/share

<sup>3</sup> Equity value

In order to ensure availability and reliability of electricity supply, Cemig has several initiatives focused on the management of distribution assets, such as the Distribution Development Plan (PDD, Plano de Desenvolvimento da Distribuição), the Master Plan for Automation and Telecommunications, with short- and long-term objectives, and the Maintenance Plan, with short-term actions, on an annual horizon<sup>23</sup>.

Macro-projects of reinforcement and reform of distribution system are part of supply reliability. These include investment actions to reduce the number of power outages and consumers affected by each occurrence. It also allows greater operational flexibility to the distribution system in order to facilitate the restoration of power outages, if they occur, reducing, thus, duration of interruptions for the final consumers. These actions include the implementation of new substations, changes of network to more reliable standards and double sourcing in order to serve locations in case of operational contingency.

Via PDD, Cemig prioritizes the investments to be made by the Distributor regarding the Regulatory Remuneration Base (BRR, Base de Remuneração Regulatória) and the prudent resources management, in the current tariff cycle. The objective is to increase availability of electricity in a continuous way, with quality, safety and quantity required by customers, promoting social and economic development in the concession area of Cemig D.

For the new five-year investment cycle, which covers the period from 2018 to 2022, funds were approved for investments amounting to BRL 4.5 billion, distributed among different macro-projects. In 2018, the Company invested approximately BRL 825.5 million in cash (products and services) of a total of previously approved BRL 1,052 billion for this year, distributed as detailed in the table below.

Macroproject	Amount invested (thousand BRL)
Expansion and reinforcement in high voltage	70,884
Customer and accessory service (Cemig interest) <sup>24</sup>	51,709
Reform of the high voltage system	657
Operation and maintenance in high voltage	13,458
Reinforcement of medium and low voltage networks	47,557
Assistance to the urban market in medium and low voltage	114,227
Assistance to the rural market in medium and low voltage	231,797
Complementary Program (Cemig's Interest) in low and high voltage	87,466

 $<sup>^{23}</sup>$  Regarding the indicator EU-06, of the sector supplement linked to the G3 version.

<sup>&</sup>lt;sup>24</sup> According to Normative Resolution ANEEL No. 724, dated September 31, 2016 (Official Gazette, June 7, 2016, section 1, p. 33), the term "Accessor" refers to the "generating, importing, exporting or distributing center that connects its own premises to facilities owned by the distributor." Available at http://www2.aneel.gov.br/cedoc/ren2016724.pdf.

Security of Third Parties (Cemig's Interest)	8,843
Reform of medium and low voltage networks	11,835
Operation and Maintenance in medium and low voltage	96,814
Change of Measurement/Border Measurement	33,508
Environment	1,725
Master Plan for Automation of Medium Voltage	45,005
Telecommunications	10,036
Scada Project	30
TOTAL	825,550

Investments in the High Voltage Electric Distribution System aim to: (i) meet increased demand for energy from new and existing customers; (ii) contribute to decrease the DEC (average time without power for each costumer) and the FEC (average amount of times without power for each consumer is without power); and (iii) improve safety at Cemig's facilities for employees, contractors and population as a whole.

A number of users of transmission lines (consumer, generator, distributor or importer or exporter of energy, with installations connected to the electric distribution system, individually or in association) were also attended, among which the UFV (Photovoltaic Plants), which enabled the connection of 64.3 MW in the electrical system.

Cemig D meets the requests of medium and low voltage customers, comprised in the 774 municipalities in its concession area, by means of investments foreseen in the PDD. The Urban Service macro project focuses on the investments required to meet the energy supply demands of consumer units in the urban area, whose

service is performed without burden to the applicant. In 2018, the extension of 379 km of new networks was implemented, allowing the connection to the electrical system of 218,237 urban consumer units.

The service to consumer units in rural areas entitled to service without burden is carried out through the Rural Service macro-project. In 2018, Cemig connected more than 19,000 consumer units, through the extension of 5,324 km of medium and low voltage network, investing in the infrastructure of rural distribution networks.

The connection of consumer units that do not fit the criteria of free supply of energy defined by the regulation of the electric sector is carried out by the Complementary Service macro-project. In 2018, the electric medium and low voltage distribution system received BRL 87.4 million in investment from Cemig and BRL 159.5 million from the applicants, as a financial participation s. These investments enabled to connect 7,563 customers and enterprises in the distribution system of Cemig D.

In order for the electricity distribution system to absorb all the connections of customers and enterprises served by the macro-projects Urban, Rural and Complementary Services, it is necessary to invest in the distribution assets, such as: expansion of power capacity, conversion of single-phase into three-phase network, interconnectors between feeders, network reforms and operational contingency works. The reinforcement and reform of the electric system is carried out by the macro-projects of Network Reinforcement and Network Reform. In 2018, there were interventions in 495 km of medium and low voltage networks.

The Third Party Safety macro-project was defined to eliminate situations of electric shock risk in Cemig D's distribution networks. This program aims to realize the necessary investments for the removal of networks to eliminate the risk of accidents due to direct or indirect touch or other risk situations for third parties in the distribution networks. In the last year, 1,295 facilities were regularized, with an investment of BRL 8.8 million.

The Master Plan for Automation and Telecommunications concerns the modernization of the distribution system, through the equipment installation for remote control of networks and improvement of the means of communication between the equipment and the Distribution Operation Center (COD, Centro de Operação da Distribuição). The greatest benefit of re-connector installation is the increase in operational flexibility, which reduces the number of customers reached during interruptions and also reduces the average duration of interruptions. These equipments also reduce the number of sustained interruptions, especially in large rural networks with a large number of customers, whose service tends to be more time consuming due to large displacements.

In addition, the re-connectors have digital controls already adapted to the concept of smart grid, adding new functionalities, important for the operation of the electrical system.

In addition, within the scope of this plan, in 2018 the radio network was implemented in the metropolitan area of Belo Horizonte and an alternative to satellite communication in some regions with worse telecommunication infrastructure, to increase the availability of telecontrolled equipment. By 2022, these actions will be intensified and expanded to other locations in the state.

In addition, the Maintenance Plan consists of constant actions to guarantee operating conditions of distribution assets, contemplating preventive actions to avoid occurrences and supply interruptions, such as inspections, tree pruning and maintenance of structures.

These investments ensure the sustainability of distribution business, since: (i) it generates shareholder value through profitability and cash generation, (ii) ensures customer satisfaction by the security of continuous energy supply and by the achievement of more efficient operational processes, (iii) meets the quality requirements defined by the regulatory agency and (iv) reduces losses. Cemig thus ensures the availability of energy to the market with safety and quality, within the environmental requirements.

# **Cemig Distributed Generation**

Another relevant fact related to Cemig's strategy of investment in generation is the creation, in 2018, of a new subsidiary of the Company, Cemig Geração Distribuída S.A. - Cemig GD.

Distributed generation is one of the most developed branches of electricity sector in the world, and Cemig, through Cemig GD, intends to position itself in a more relevant way in this market. The focus of the company is on photovoltaic (solar) facilities. The goal is to deploy, over the next two years, 250,000 kW in distributed generation.

Cemig GD will act in accordance with the guidelines set forth in the company's bylaws. For the market, the company offers the following activities:

- Deploy, install, operate, maintain and lease enterprises and micro- and mini-generation distributed equipment;
- Formulate businesses, develop physical, financial products and solutions associated with energy efficiency and distributed micro/mini-generation;
- engineering services and develop studies of installation and leasing of enterprises and equipment for distributed generation and consumer compliance with the electric energy compensation system. That includes analysis of technical, regulatory and economic feasibility;
- d. Develop businesses, carry out activities, carry out commercial acts and provide related, linked or necessary services, directly or indirectly, in whole or in part, related to the achievement of its corporate purpose.

More information on the context of distributed generation in Brazil and Cemig are presented in the chapter Customers and Consumers.

Investments in other companies
In relation to its holdings in other companies, Cemig oversees the management and development of subsidiaries and affiliates through active participation in management bodies, within the criteria of good corporate governance, complying with their business plans. The main subsidiaries of Cemig Group and their highlights in 2018 are disclosure below.

### **ALIANÇA**

Aliança Geração de Energia S.A. is one of the means used by Cemig to generate and commercialize electric energy. Formally established in 2015, the company emerged from a strategic partnership between Vale S.A. (55%) and Cemig GT (45%) through the payment of the equity interests held by Vale and Cemig GT in the following power generation assets: Porto Estrela, Igarapava, Funil, Aimorés, Capim Branco I and Capim Branco II, and Candonga. Subsequently, the Santo Inácio Wind Farm was added to the portfolio and started operating in December 2017.

Aliança's generating plant has long-term concession agreements and all the energy generated by Aliança is sold through agreements signed with Vale, Cemig GT and the regulated market (ACR), which allows a stable and predictable revenue for years to come. In December 2018, Aliança's installed power and firm energy were 1,257 MW and 652 MW respectively.

More information about Aliança and its performance in 2018 can be found in the company's annual report<sup>25</sup>.

<sup>&</sup>lt;sup>25</sup> Avaliable at: https://aliancaenergia.com.br/br/relatorio-anual/

### **TAESA**

Transmissora Aliança de Energia Elétrica S.A. - Taesa is a private company controlled by Cemig, which holds 36.97% of the voting capital and 21.68% of the total capital. Taesa is dedicated to construction, operation and maintenance of transmission lines in all regions of the country, being Cemig's growth factor in transmission segment. Taesa's position remains strong in Brazilian energy transmission sector. Currently, it holds 34 concessions totaling approximately BRL 2.9 billion in the Annual Allowable Revenue (RAP, Receita Anual Permitida) for the 2017-2018 cycle, corresponding to its interest in these concessions. Out of this total, BRL 2.3 billion comes from the RAP of 27 concessions in operational phase.

Currently, Taesa has eight projects in progress, which were acquired in recent years in electric power transmission auctions promoted by ANEEL. The following were the acquisitions made in 2018:

- 1. In March 2018, Taesa concluded the acquisition of 25% of IB Transmissora de Energia S.A. IB, in addition to approving the acquisition by Companhia Norte de Transmissão de Energia S.A., its affiliate, of 50% interest in IB, which had its corporate name changed to Companhia Diamantina de Transmission de Energia S.A. The company is responsible for the implementation and operation of 168 km of transmission lines and a substation in Bahia. The annual revenue is BRL 33 million and the estimated investment is BRL 184 million.
- In September 2018, Taesa submitted bids for lots L, M, N and P, subject of Eletrobrás Auction 01/2018, related to the equity interest in, respectively, Brasnorte Transmissora de Energia S.A. - Brasnorte, Transmineiras (Companhia Transleste de Transmissão, Companhia Transudeste de Transmissão and Companhia Transirapé de Transmissão), Empresa de Transmissão do Alto Uruguai S.A. – ETAU and Companhia de Transmissão Centroeste de Minas - Centroeste, owned by Centrais Elétricas Brasileiras S/A - Eletrobrás. Taesa submitted bids for the minimum amount in each of those lots. For lots L (Brasnorte), N (ETAU) and P (Centraleste), these were the only proposed bids, therefore there were no competing bids. In accordance with the rules of the bidding notice. Taesa must wait for the expression of interest of the other partners of each SPE regarding the preemptive right. Regarding lot M (Transmineiras), considering that the winner won the lot with the same minimum price offered by Taesa, it will exercise, in the strict terms of the shareholders' agreement, its preemptive right in each of the SPEs within the term of 60 days, as provided in the notice of the auction. As for Lote P, composed of Companhia de Transmissão Centroeste de Minas - Centroeste, Cemig - a shareholder jointly with Eletrobrás - decided to exercise its preemptive right, which would prevent Taesa from acquiring it. The acquired interests will add BRL 46 million to the Company's RAP.

- 3. In December 2018, Taesa celebrated an Agreement of Purchase and Sale of Shares and Other Covenants with the company Amber Energia Ltda. and Fundo de Investimento em Participações Multiestratégia Milão, having as its subject the acquisition by Taesa of 100% of the shares representing the total and voting capital of São João Transmissora de Energia S.A. and São Pedro Transmissora de Energia SA, and 51% of the shares representing the total and voting capital of Triangulo Mineiro Transmissora de Energia S.A. and Vale do São Bartolomeu Transmissora de Energia S.A. The assets, which total 1,217 km and pass through the States of Minas Gerais, São Paulo, Piauí, Goiás, Bahia and the Federal District will add BRL 128 million of RAP to Taesa.
- 4. In December 2018, the Transmission Auction No. 004/2018, sponsored by ANEEL, was held. In the event, Taesa was the winner in the dispute for Lot 12, consisting of a 587 km transmission line and five substations located in the State of Rio Grande do Sul. The project has an estimated investment of BRL 610 million and RAP of BRL 59 million.

More information about Taesa and its performance in 2018 can be found in the company's annual report<sup>26</sup>.

#### LIGHT

Light S.A. - Light, a private generation, distribution and trading company, is a subsidiary in which Cemig holds a 49.99% interest of the total capital, being 26.06% directly and 23.93% indirectly. Light bases its management on a permanent quest for maximum operational efficiency, focused on valuing its human capital, improving customer service and reducing energy theft and delinquency.

As for the quality of the energy supply, Light intensified preventive and predictive maintenance, increased pruning of trees, installed protective equipment and Self Healing systems, increased the number of points of maneuver and installed compact and isolated networks. This strategy, combined with the performance of the Results Plan and the Underground Network Modernization Plan, allowed the quality indicators (DEC and FEC) to present a result beyond the expected evolution and aligned with ANEEL.

In 2018, the strategy to fight against theft of electricityhad as its main pillar actions of inspection and normalization of customers. Several actions were carried out in the field. Around 420 teams were in localities with highest concentrations of losses. These concentrated actions show to the population, the presence and strength of Light in combating thefts of electricity. These actions were highlighted in the media throughout the year, which contributes to population's awareness of the risks of irregular connections and the crime they represent.

<sup>&</sup>lt;sup>26</sup> Avaliable at http://ri.light.com.br/sustentabilidade/relatorios

As for the revenue, results were positive as a result of actions planned for preventive combat against delinquency, the ICMS Agreement with the Government of the State of Rio de Janeiro to settle debts, negotiation with defaulting municipalities, mainly the Municipal Government of Rio de Janeiro, the work with tdebtors (negativation, protest and power cuts), as well as the review and monitoring of the injunctions together with the legal area.

In October 2018, Light concluded the sale of all the shares held in Light Esco - Prestação de Serviços S.A., its wholly-owned subsidiary, to Ecogen Brasil Soluções Energéticas S.A., in the amount of BRL 43.4 million. The transaction is aligned with Light's strategy to maintain its focus on distribution, generation and commercialization businesses.

More information about Light and its performance in 2018 can be found in the company's annual report<sup>27</sup>.

#### **GASMIG**

Companhia de Gás de Minas Gerais - Gasmig is the exclusive distributor of channeled natural gas in Minas Gerais, by granting concession, serving industrial, residential, commercial and thermoelectric segments, supplying compressed natural gas - CNG, liquefied natural gas - LNG and automotive - VNG. Cemig holds 99.57% of the capital stock of Gasmig.

In 2018, due to a greater performance in the residential segment, its customer base increased by 34.9%, from 31,355 in 2017 to 42,301 consumer units. Also in 2018, Gasmig invested BRL 65 million in assets, mainly in the expansion of its Natural Gas Distribution Networks (RDGNs, Redes de Distribuição de Gás Natural) in the State of Minas Gerais, with the construction of 45.62 km of gas pipelines in the Metropolitan Region of Belo Horizonte - RMBH, in the South Region of Minas Gerais and in Juiz de Fora, aiming to serve consumers in the residential, commercial, industrial and vehicular segments.

More information about Gasmig and its performance in 2018 can be found in the company's annual report<sup>28</sup>.

#### **RENOVA**

Founded in 2001, Renova Energia S.A. - Renova is a company focused on renewable energy sources, namely wind farms, small hydroelectric plants and solar power plants. In recent years, given its delicate financial situation, Renova based its strategy on three main points: focus on the execution of projects under construction, capital structure adequacy and business plan review.

Currently, Cemig directly holds 36.23% of the total capital, in addition to 8.58% indirectly through Light. In 2018, Renova maintained its divestment plan, however, had difficulties in selling other assets, such as Complexo Alto Sertão III (Phase A and B). Renova continues to work, together with its shareholders, to evaluate good market opportunities.

More information about Renova and its performance in 2018 can be found in the company's annual report<sup>29</sup>.

Also noteworthy are some of Cemig's important assets:

#### SANTO ANTÔNIO HPP

Cemig holds 15.51% of direct and indirect interest of Santo Antônio Hydroelectric Power Plant. The Company has all of its 50 generating units in operation, with an installed capacity of 3,568 MW and 2,424 MWm of physical guarantee with a temporary reduction of 39 MWm, clean and renewable energy source. The Concession Agreement has a duration of 35 years, counted from the date of its signature, which occurred on June 13rd, 2008.

In May 2018, Santo Antônio Hydroelectric Power Plant received Special Authorization No. 15/2018 (AE 15/2018) issued by the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA), which allows the reservoir to lift from the current quota 70.5 m to 71.3 m, with tributaries up to 34,000 m³/s. This change allows the operation to perform the quota provided in the Basic Complementary Alternative Project (PBCA, Projeto Básico Complementar Alternativo).

In full generation phase, already with all of its 50 turbines in commercial operation, the hydroelectric power plant continues being an important vector of sustainable development in the region. From March 2012, when the commercial operation began, until September 2018, the concessionaire paid more than BRL 332 million as Financial Compensation for the Use of Water Resources (CFURH, Compensação Financeira pelo Uso dos Recursos Hídricos), distributed between the Government, the State of Rondônia and the Municipality of Porto Velho.

#### **BELO MONTE HPP**

Belo Monte Hydroelectric Power Plant - Belo Monte HPP, in operation since April 2016, has 18 of its 24 generating units under operation. There are 12 at the Main Power Station, with an installed capacity of 7,333 megawatts (MW), and six in the Complementary Power Station, with 233.1 MW - totaling more than 7.5 thousand megawatts under operation. It is expected that all 24 turbines will be under commercial operation by January 2020.

Cemig GT holds 11.69% of indirect interest in the project, of which 74.50% is held in the capital stock of Amazônia Participações S.A. and 49% is in the capital stock of Aliança Norte Energia Participações S.A., which holds 9.77% % and 9% of the capital stock of Norte Energia S.A., the company responsible for the implementation, operation, maintenance and operation of Belo Monte Hydroelectric Power Plant.

#### **GUANHÃES SHPS**

Guanhães Energia S.A. is a Special-Purpose Entity (SPE) created to implant the Small Hydroelectric Plants (SHPs) Dores de Guanhães, Senhora do Porto, Jacaré and Fortuna II, all located in the state of Minas Gerais, with total power installed capacity of 44 MW. In December 2018, the SHPs, Dores de Guanhães and Senhora do Porto, were already under full operation, and five remaining generating units of Jacaré and Fortuna II will be under operation until 2019.

Cemig GT and Light Energia hold, respectively, 49% and 51% of the capital stock of SPE, and until December 2018, Cemig GT invested approximately BRL 249 million in the project, in proportion to its interest.

In 2018, Guanhães Energia obtained all licenses to operate the projects, proving to the environmental agency its compliance with all environmental constraints stipulated in the corrective installation licenses. Currently, all the projects are up to date with their environmental licensing. Terms of forest compensation commitment of Fortuna II and Jacaré SHPs, as well as the terms of speleological compensation, have been signed.

## 6.4 TECHNOLOGY AND INNOVATION (R&D, ENERGY ALTERNATIVES, OPEN INNOVATION)

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103-1:203

The development of innovations in products and processes is a fundamental part of Cemig's activities. The commitment to identify and implement new technologies creates goods and services that bring benefits to society as a whole, such as increased availability of assets, reduced customer service time, increased personal and system security and construction of new tools and infrastructures more efficient and adapted to different realities. Cemig understands that it plays an important role in the technological development of solutions for generation, transmission and distribution of electric energy. The positive impacts that these solutions promote for the electric sector and for society make this a material topic for the Company.

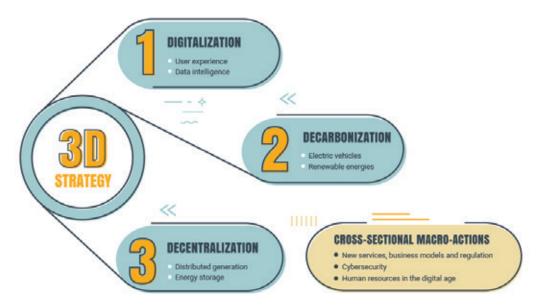
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Cemig has a Research and Technological Development Program (R&D), which includes development of incremental technology projects focused on operational efficiency gains and cost reductions, as well as radical or disruptive initiatives that deliver radically new products. Through this initiative, Cemig annually applies part of its net operating revenue in Research and Development of the Electric Energy Sector.

In 2018, the R&D program was restructured based on Cemig's Strategic Technology Innovation Plan, launching Cemig 4.0 Program.

#### 102-15

Cemig 4.0 is a program that aims to position the Company as one of the companies in the industry capable to respond to new trends and global demands on energy systems. Through this program, explores opportunities and challenges of new business models of the segment. Cemig follows a strategy based on Digitization, Decarbonization and Decentralization topics, such as electric mobility, renewable energy, user experience, data intelligence, distributed generation, energy storage, cybersecurity strategy, new business models and talents for the digital age are the focus of Cemig 4.0 projects.



In 2018, at the public call of Cemig 4.0 Program, 129 proposals were received, evaluated, classified and validated by an Expert Evaluation Committee and out of these, seven were qualified and prioritized for refinement. These projects will be developed during 2019.

In 2018, Cemig invested approximately BRL 40 million in two projects, with the objective of developing a national technology that enhances the intelligent use of renewable sources, the provision of supplementary services to the grid and the improvement of the quality of electricity supply.

The first project is developed in partnership with Alsol Energias Renováveis, Federal Institute of Education, Science and Technology of Rio Grande do Norte, Federal University of Campina Grande and the Federal University of Paraíba. The projects aims to develop an energy storage technology combined with a photovoltaic generation system. Basically, the goal is to use these hybrid systems in consumer units. The combination allows the user to store the energy generated by the solar plates during the day, period of greater incidence of solar rays, to be used when necessary.

The second project is developed in partnership with Federal University of Minas Gerais, Foundation for Technological Innovations, Institute of Technology Edson Mororó Moura and Concert Technologies S.A.. Cemig and its partners are researching the development, construction and technical evaluation, regulatory and economic management of energy storage pilot plants connected directly to the distribution network. In practice, the goal is to couple energy storage systems into medium voltage feeders to provide support for various network functions, such as contingency power supply, voltage regulation, reactive power control, and peak demand supplies.

#### 103-3:203

As a measure of its innovation effort, the Company has an indicator titled INOV, which represents the ratio between total investments made in R&D and innovation projects in the current year and net operating revenue in the same year. The 2018 goal was for this indicator to be 0.30%. However, the result verified exceeded the goal and indicated that 0.51% of net revenue for the year was allocated to research development and innovation. This result is aligned with recorded increases in recent years: in 2017, this index was 0.49% and in 2016, it was 0.32%.

This resources are applied in various areas of the Company in order to create value for the business as a whole, incorporating innovations from different perspectives, from product and process innovation to organizational and marketing innovations.

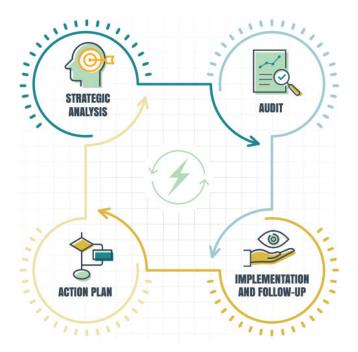
As part of the R&D program, Cemig has set up an internal committee with representatives of all Boards, whose task is to select the best technologies to be developed in the company that meet strategic guidelines.

Cemig is aware that innovation and technology are strategic inputs that enable business development and add value to its products and services. Because of that, to manage this program, in 1999 Cemig implemented the Strategic Technology Management (GET, Gestão Estratégica de Tecnologia) methodology<sup>30</sup>.

Cemig aims to apply the most appropriate technologies with GET methodology, also answering agilely to change of scenarios.

This methodology prepares the Company for the frequent variations in an increasingly dynamic and competitive market. It should be noted that GET's technological strategies are aligned with Cemig's business guidelines.

The GET methodology is materialized through a technological process that takes into account four major strategic approaches:



In this process, Cemig uses some tools that include:

- Technological prospecting and scenario analysis;
- Identification of threats and opportunities,
- Strengths and weaknesses of the business;
- Deployment of guidelines from the Corporate Strategic Planning process;
- Identification of technological actions and projects, including Research, Development and Innovation programs of business interest;
- Improvement and diffusion of methodology and technical support to businesses and companies.

<sup>&</sup>lt;sup>30</sup> Regarding the indicator EU-08, of the sector supplement linked to the G3 version.

The GET methodology in its structure operates at strategic, tactical and operational levels. At the strategical level, technological policies are defined and technological plans, budgets, projects and strategic initiatives focused on technological-scientific development and innovation are approved.

Cemig has a Strategic Management Committee for Technology and Innovation and Energy Efficiency (CGETEE, Comitê de Gestão Estratégica de Tecnologia e Inovação e de Eficiência Energética) and a Superintendency for Technology, Innovation and Energy Efficiency - TE. CGETEE and TE are primarily responsible for (i) fostering the implementation of GET and innovation in the Company, (ii) continuously monitoring technologies, identifying threats and opportunities, (iii) proposing entrepreneurial actions aimed to incorporate innovation and technology in the short-, medium- and long-term, such as policy development, evaluation and testing of new technologies, incorporation of innovations and permanent employee training in the subject, and (iv) guiding the best possible R&D.

At the tactical level, policies and initiatives in various business areas are deployed. In this structure, Cemig has a Technological Innovation and Energy Alternatives Management - TE/IA and Technology Forums which are responsible for contributing to consolidate a culture of innovation in the company. This contribution is made through direct participation of experts in Cemig's strategic technology planning, technological auditing and decision-making on innovation management processes.

At the operational level, there is a materialization of the action plans defined in the aforementioned levels. This is possible through the establishment of strategic partnerships and technological cooperation agreements between Cemig, other companies and industries, universities and research centers. Intermediation between tactical and operational levels is the responsibility of TE/IA. Operation, control and follow up of research projects, from its hiring to submission of final report to ANEEL, is attributed to the Control and Monitoring Management of the R&D and Technical Standardization Program - TE/CN.



Cemig also promotes innovations at organizational and marketing levels, in order to generate new business practices, a new approach in external relations, changes in the advertising of its main product and aggregated services and in its positioning in the market.

The following are some examples of these new approaches: (i) joint purchases of materials and services together with several companies in the group, seeking for a combination between better price and greater volume, (ii) new tools for developing people and their intellectual capital, (iii) process automation tools, (iv) tools to reduce impacts and environmental litigation, (v) formulation of new service channels, (vi) simultaneous reading and printing process (LIS, Leitura e Impressão

Simultânea); and (vii) new perspectives of approach and treatment to large customers and suppliers.

Technological-Strategic Partnerships Strategic Management of Technology privileges the establishment of partnerships that deveolp and form centers of excellence in Minas Gerais, through alliances between Cemig and universities, other companies in the industry, start-ups, research centers, communities, etc.

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

## **Intellectual property**

Cemig protects its intellectual property by applying feasibility analyzes and use privilege of inventions, brands, software, internet domains, and other creationsCemig also guides privilege applications in their preparation and follow-up, as well with registration and dissemination of patent letters and other intellectual property titles.

During 2018, through the Patent and Trademark Office, Cemig and its subsidiaries filed three new patent applications and had a patent granted<sup>31</sup>. In total, Cemig Group has 18 patents granted and 62 applications are in progress.

## Strategic technical standardization

Cemig has constituted an internal committee that carries out a technical standardization of materials and equipment, including accessories, tools and personal and collective protection equipment (PPE and CPE) because it is strategic for the business.

The following are the main assignments of this committee:

- To work together with those areas of the Company that are related with standardization, in order to produce technical documents that contain the minimum requirements necessary for the acquisition of materials and equipment, as well as incorporate innovations in the materials and equipment used by Cemig;
- Identify opportunities to obtain intellectual property rights and domain on technologies developed in the standardization processes that occur inside and outside the Company.

In addition to internal technical standardization, Cemig also follows and participates in technical standardization processes at the national level. Cemig contributes technically in the elaboration of draft standards, as well as in the votes for the approval of national standards by participating in the meetings of the Brazilian Association of Technical Standards - ABNT.

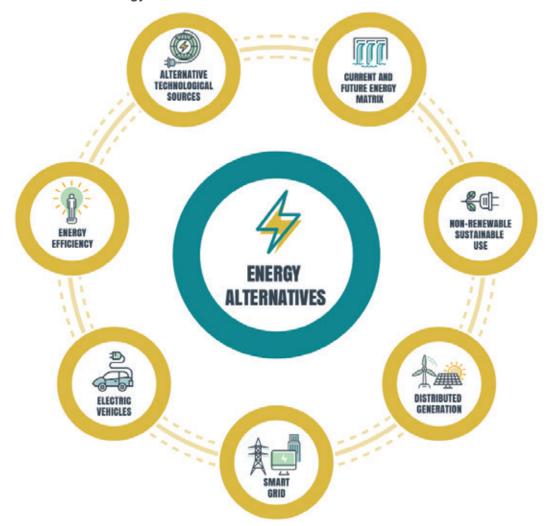
## Lei do Bem (The Good Law)

Since 2006, Cemig has begun to use the benefits of Lei do Bem ("The Good Law") (Law No. 11.196/05), which allows the Company to deduct from the Income Tax the amount corresponding to the sum of the expenditures with technological research projects and innovation. For a project to be considered in this benefit, Cemig needs to identify those responsible for quality gains, productivity and that generate incremental improvements to their processes. Since its adherence to the law, Cemig obtained a deduction of BRL 83.97 million in taxes due, with BRL 1.57 million in 2018.

<sup>&</sup>lt;sup>31</sup> The patent granted relates to an optical system and device for remote monitoring of the mechanical tension of stretching and conductors of aerial transmission and distribution networks of electric energy.

## **Energy Alternatives**

In Cemig's view, the term "Energy Alternatives" covers the entire energy chain, including transportation, transformation, technological routes, supply and storage, and end-use of energy. Moreover, as they are elements that integrate the process of electricity generation, they also make up what Cemig considers as alternative sources of energy and new sources and technologies, distributed generation, smart grid design, electric vehicles, energy efficiency and the best use of traditional energy resources.



Energy alternatives are intrinsically associated with themes of technology, innovation and sustainability. Cemig's investments in research in this sector are essential for its permanence in Dow Jones Sustainability Index, as well as acting directly and decisively to strengthensome of the processes that make up the Company's strategic corporate map.

Another important innovation vector is the Energy Efficiency Program. The specific legislation in force, regulated by ANEEL, determines the application by the distributor of a minimum percentage of net operating revenue in energy efficiency projects, in addition to the annual publication of a Public Call for Projects, in which the company has the opportunity to receive proposals from civil society to be implemented with Energy Efficiency resource<sup>32</sup>. More information about the Program is disclosured in the Energy Efficiency section in the Energy Supply chapter.

<sup>31</sup> Regarding the indicator EU-07, of the sector supplement linked to the G3 version.

In addition, Cemig follows the emergence of new technologies and has directed efforts to subsidize the development of research on the subject. Given its expertise, Cemig participates in committees and groups, such as the Municipal Committee on Climate Change and Eco-efficiency (CMMCE, Comitê Municipal de Mudanças Climáticas e Ecoeficiência) in Belo Horizonte and the State Management Committee of the Project for the production of sustainable, renewable biomass-based charcoal for the iron and steel industry in Brazil, coordinated by MMA/MDIC/MCTI with resources from the Global Fund for the Environment (GEF).

The main energy alternatives projects implemented in 2018 are described below:

- Launch of the 32nd edition of the Energy Balance of the State of Minas Gerais (BEEMG, Balanço Energético do Estado de Minas Gerais), base year 2016: update of the historical series of the state matrix from 1978 to 2016, available on Cemig's website. The Energy Balance presents important and essential data to planstudies on integrated use of energy, energy efficiency, technological management, research and actions of a socioeconomic nature, greenhouse gas emission GHG and sustainable development. As in 2017, the edition released reaffirms the relevant participation of renewable sources in the Minas Gerais energy matrix.
- Evaluation of the potential of cogeneration in the cement sector of Minas Gerais: started in 2017 and developed by PUC Minas, the project had the objective to research and evaluate the opportunities, technological alternatives and barriers for the development of cogeneration potential in Minas Gerais' cement industry. The study, which was completed in 2018, considered technological, economic, market and environmental aspects in order to identify feasible projects to be executed by companies of the Cemig Group. The project led to the development of a Cogeneration Map in the Cimenting industry of Minas Gerais.

Development of models, methods and computational system for wind speed prediction in short- and long-term horizons: the objective of this project, which was closed in 2018 and resulted in a tool used by Cemig, was to develop a new forecast model of winds, applicable to the study of wind energy potential and also for investigation and evaluation of enterprises.

Development of a system to calculate the potential of biomass energy generation in the state of Minas Gerais: the project was carried out in partnership with New Energy Options (NOE, Novas Opções Energéticas), and it mapped types of crops and waste used for the generation of energy through the use of georeferencing techniques. The project contributed to define and prioritize regions/municipalities more suitable to the implementation of biomass utilization plants for energy purposes and identify the best technological alternatives for each selected region/municipality in Minas Gerais. In 2017, books, atlases and mobile applications were published, in addition to a workshop to close the project. In 2018, Atlas documents were made available on the Energy Alternatives website, on Cemig's website<sup>33</sup>.



Davidson Rodrigo (Business Processes)

## 7. CUSTOMERS AND CONSUMERS

102-6

The following are Cemig's main types of customers<sup>34</sup>:

- i. Captive consumers<sup>35</sup>, located in the concession area in the state of Minas Gerais: consumers that are only linked to the distributor, with energy demand below 500 kW. This type of consumer cannot buy energy in the Free Contracting Environment (ACL, Ambiente de Contratação Livre) and are served according to the Regulated Contracting Environment (ACR, Ambiente de Contratação Regulada). They can be consumers in the residential, industrial, commercial, rural, public power, public lighting and public service sectors;
- ii. Free customers in the state<sup>36</sup> of Minas Gerais and in 23 other Brazilian states: consumers that can buy energy in the ACL, not only being linked to the distributor, and with energy demand above 500 kW. They may be industrial, commercial and rural consumers;
- iii. Other agents in the electricity sector, such as marketers, generators and independent energy producers; and
- vi. Distributors.

<sup>34</sup> The types of customers described in items (II),(III) and (IV) are the so-called "corporate customers" of Cemig.

<sup>35</sup> Also called"consumers".

<sup>&</sup>lt;sup>36</sup> The free customers of Cemig Group are also located in the following states: Acre,Alagoas, Amapá, Amazonas, Bahia, Distrito Federal, Espirito Santo, Goias, Maranhão, Mato Grosso, Mato Grosso do Sul, Pará, Paraná, Pernambuco, Piauí, Rio de Janeiro, Rio Grande do Norte, Rio Grande do Sul, Rondônia, Santa Catarina,São Paulo, Sergipe and Tocantins.

Cemig has different ways of managing the relationship with its customers, adapted to different demands, and to particularities of itsbusiness relationships.

In December 2018, Cemig reached the mark of 8,409,535 customers billed<sup>37</sup>, an increase of 0.76% compared to December 2017. Out of this total, 8,409,183 are final consumers<sup>38</sup> and own consumers. Only 352 are other agents of the Brazilian electricity sector.

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

	Number of customers and consumers by class		
	12/31/18	12/31/17	Variation
Final Consumers	8,408,481	8,347,483	0.73%
Residential	6,817,365	6,765,201	0.77%
Industrial	73,003	74,497	-2.01%
Trade, Services and Others	721,149	718,52	0.37%
Rural	712,793	705,541	1.03%
Government	64,322	63,477	1.33%
Street lighting	6,418	6,137	4.58%
Public Service	13,431	12,976	3.51%
Own consumption	702	751	-6.52%
TOTAL	8,409,535	8,346,147	0.76%

It should be noted that 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, by class, is shown in the table below.

	Number of customers paying for the transported energy		
	12/31/18	12/31/17	Variation
Industrial	574	531	8.10%
Commercial	555	456	21.71%
Rural	6	4	50.00%
Concessionary	3	3	0.00%
TOTAL	1,138	994	14.49%

<sup>&</sup>lt;sup>37</sup> Customers of types (I), (II), (III) and (IV).

<sup>38</sup> Customers of types (I) and (II).

## 7.1 RELATIONSHIP WITH CORPORATE CLIENTS

The "Energy Trading Policy"<sup>39</sup>; aims to establish guidelines for the relationship with its clients, both in Regulated Contracting and Free Contracting.

Potential clients are liable to a detailed credit analysis. Prior to the sale, the operation is submitted to an approval of Energy Risk Management Committee (CGRE)<sup>40</sup>, for feasibility evaluation and verification of compliance with the commercial guidelines. With this approval, the operation is submitted to the deliberation of the Board of Executive Officers.

Cemig's client portfolio represents a significant percentage of its share of energy sales and, consequently, its revenues. The management focus on corporate customers is the recognition of its importance to Cemig's business and supports the flow of revenue (potential reduction in the corporate customer portfolio would reduce company's revenue). Business risk analysis<sup>41</sup> and monitoring of economic sectors of these customers is also part of the management process.

In order to offer a differentiated service compatible with the size and relevance of these customers, Cemig has a Superintendency exclusively dedicated to guarantee a personalized service. The company also has a team of professionals with specific technical knowledge, responsible for managing the agreements and all the demands of customers. Additionally, they act in the prospection and capture of new customers.

With the objective of continuous improvement in the relationship with corporate customers, Cemiq offers the following customized relationship structure<sup>42</sup>:

<sup>39</sup> The policy provides for the presentation of the following topics to the Board of Directors, in the last quarter of each year.

<sup>·</sup> Forecast of the various markets to be served and projections of average price and average tariff;

<sup>·</sup> Forecast of the energy purchased for the service;

<sup>•</sup> Forecast of Tariff Adjustments and Revisions, in average numbers, within the horizon of 2 review cycles;

<sup>·</sup> Forecast of the evolution of average energy prices, resulting from auctions and bilateral contracting;

<sup>•</sup> Forecast of the evolution of the Settlement Price of Differences - PLD; and

Risk mitigation strategies (with the actions and/or products adopted) and criteria for the determination of sub or under re-contracting at Cemig Distribuição S.A.

 $<sup>^{\</sup>rm 40}$  The CGRE is composed of members of several Cemig areas.

<sup>&</sup>lt;sup>41</sup> Cemig's risk management is detailed in chapter five.

<sup>&</sup>lt;sup>42</sup> Cemig's relationship channels with its customers are detailed in section Relationship Channels

- Final Consumers Segment (manufacturing industry, basic industry, agribusiness, electro-intensive, special customers) the following are the channels of communication and communication media with customers: dissemination and communication via telephone, email, CRM systems, visits and meetings; corporate events for example, the Energy Biennial; regional meetings and training and Cemig Portal.
- Energy Distribution Segment (Distributors, Generators and Marketers) the following are
  the relationship channels and media with information flow for customers: dissemination
  and communication via telephone, email, CRM systems, visits and meetings, training,
  newspapers, specialized websites and Cemig Portal; participation in associations of
  market agents for example, in ABRACEEL, institutions and government agencies.

## 7.2 RELATIONSHIP WITH CONSUMERS

In addition to corporate customers, Cemig serves captive consumers.

#### 102-43

Cemig D Strategic Map contains elements of effective monitoring of consumer perception of services provided. This monitoring takes place on a regular basis, through the verification of the results of Customer Satisfaction indicators and is distributed at all levels of the Company, as defined in the Management Model. The performance of service channels, electrical system, customer satisfaction and safety of the population regarding the electrical system is systematically monitored with the assistance of Customer Service Monitoring Center (CMS). Besides compliance with regulatory rules, Cemig also conducts consumer satisfaction surveys, in which it seeks data to adapt its relationship behavior to the consumers' wishes.

Aware of the growing demand for virtual channels, Cemig has invested in the diversification of these customer service instruments without, however, failing to offer other channels with the same attention and quality in order to guarantee consumer satisfaction.

The new challenge in this area is the GRC Project, which aims to structure and implement a new model of Customer Relationship Management, through actions adhering to the proposed regulation and that promote differentiated interactions with its customers. This is a component of the company's strategy formulation and aims to enhance the use of digital channels, considering the digital transformation of consumer and active communication. The following are the main objectives:

- increase consumer satisfaction (term, quality, efficiency in the treatment of services and complaints);
- increase consumer perception of value (loyalty) in relation to Cemig, aiming retention in eventual market opening;
- seek operational efficiency and cost optimization (reduce contacts in the in-person and telephone channels).

Cemig has reviewed the Segmentation model to meet the commercial strategy, enabling it to address the demands of various consumer profiles and niche markets of services, such as: automatic debit, invoice via email, etc. Segmentation of consumers will allow better understanding of each type of customer and, according to the typology, adapt the contents, forms, interaction and relationship approaches, in order to meet strategic requirements and needs of each type of profile.

## 7.3 CONSUMER SATISFACTION

Consumer satisfaction is inherent in the Company's culture and is under responsibility of all employees. The following are the positive impacts related to this posture:

- compliance with regulatory quality indicators, continuity of supply, customer satisfaction, among others;
- recognition through satisfaction surveys, in particular. Aneel Index of Residential Consumer Satisfaction IASC and Perceived Quality Satisfaction Index ISQP of Abradee; and,
- valorization of the brand and good reputation of the company in the markets in which it operates.

Customer satisfaction indexes are important tools that support the creation of initiatives and action plans for the continuous improvement of the services provided, considering the perception of its consumers. The implementation of improvements is conducted by senior management and is focused on process efficiency, when an opportunity to improve is identified. These are factors that reduce the risk of non-compliance in the provision of services.

The IASC is assessed through an opinion survey conducted throughout Brazil. In 2018, Cemig reached a score of 68.41 in this indicator, which represents an evolution of 4.04 percentage points in relation to the one made in 2017 (65.75). With this result, the Company was above the average of distributors in the Southeast region with more than 400 thousand Consumer Units (65.62) and the Brazilian average (66.10), showing improvement in all attributes of perceived quality. "Customer Information" score, where attributes such as "explanation of proper use" and "guidelines on the risk of energy use" grew by more than 15%. Customers also noticed improvements in power supply. The attributes "power supply without interruption and without varying voltage" grew 7% in relation to the previous research.

Cemig monitors and manages these results as performance indicators. The target for this indicator in 2018 was 70 points and although the results were not achieved, they reflect the evolution of the Company in the last three years.

## **IASC Evolution - Cemig D**

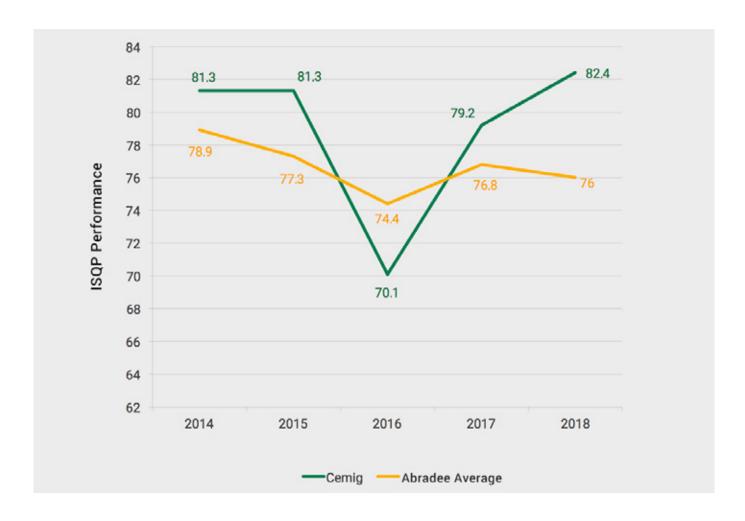


With this result, Cemig ranked fifth among the ten largest energy distributors in the Southeast region in the IASC Brazilian ranking, which brought together 68 distributors participating in the ANEEL 2018 survey.

In relation to ISQP, 2018 marked the 20th edition of this survey conducted by ABRADEE to evaluate the satisfaction of residential customers. In these two decades, Cemig's ISQP increased by 15%. Cemig's result of 82.4% in this index in 2018 ranks the company as one of best ten energy distributors in Brazil with more than 500 thousand consumers. This is the best result achieved by Cemig in the last ten years of the survey.

There was improvement in four researched areas: information and communication, supply, care, image. Three regions grew by more than ten percentage points at the ISQP 2018. The result of the South/Mantiqueira region (87.4) was above the national benchmark, obtained by Rio Grande Energia – RGE/Sul (87.1).

## Cemig's ISQP Historical Series and ABRADEE's average



### **Internal Communication Campaigns**

Customer Satisfaction has been a continuous agenda in internal communication vehicles, reinforcing awareness of employees and contractors of their responsibility and contribution to this process. Throughout the year, several contents were published depicting the commitment of top management and the engagement of all areas. These contents were accessible to all employees through a full banner on the intranet. Cemig held meetings with employees and contractors from all regions of Minas Gerais to align with ISQP.

In July 2018, Cemig created a Multifunctional Team with representatives from several areas, working in an integrated way to define and follow up the actions implemented to improve customer satisfaction. The constitution of this team promoted awareness throughout the Company of the need for optimization of processes focused on customer service improvements.

Call center employees, readers 43 and electricians participated in customized trainings, which reinforced the role of each one to improve the perception of the customer about the services provided by Cemig. The awareness campaign of in-person service improved the employees' knowledge about the needs and expectations of the different customer segments of the distributor, joining their own and contracted workforce.

Another successful initiative was the Leadership Meeting, which fostered ideas for a continuous development of quality in in-person service performed by the contractor. In addition, the Motivational Plan, implemented by the contractor responsible for in-person service of the distributor, sought to encourage teams to provide quality services to the customer by evaluating and awarding the best results.

## 7.4 RELATIONSHIP CHANNELS

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

As part of the strategy of offering services in an agile, modern and quality way, several customer service channels are available. These channels are effective in communication media such as telephones, virtual, or even through direct contact, as detailed in the following table.

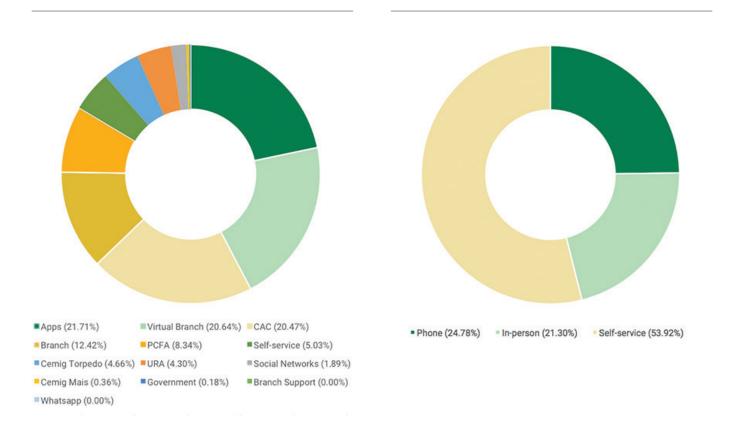
Туре	Channels
Phone	CAC (Call Center)
	IVR (Interactive Voice Response Unit)
	Service Counter
In-person	PCFA (Posto Cemig Fácil de Atendimento)
	Cemig Mais (Medium Voltage Customers)
	AGV (Virtual Agency)
Self-service	Applications (Cemig Atende)
	Social Networks (Facebook/Telegram)
	Self-service (Totens)
	Cemig Torpedo (SMS)

All this apparatus is fundamental to provide an adequate service to more than 8.3 million customers, who, in 2018, requested a total of 45,304,547 of services, in the various channels.

#### **Service - Mix**

Total: 45,304,547

#### **Means of Service**



Demand for services through virtual channels represents approximately 54% of total service demand. Examples of these channels are the Cemig Atende application, available for smartphones and tablets on Android, iOS and Windows Phone platforms.

In this channel, customers can access 17 services, such as registering a power outage request, informing the meter reading, checking pending debits, taking a duplicate account, and more. In addition, customers have access to information about protocol, about Cemig, power tips and a consumption simulator.

Due to technological advance and accessibility to internet, currently, the exchange of information occurs in social networks, which provide speed in the way of sharing information, support improved service processes and are available to the majority of the population.

Cemig offers customer service through Facebook (Facebook.com/Cemig.atende) and Twitter (@Cemig\_atende). Social networks offer greater interactivity with and among Cemig customers, through the use of fast and objective language, where you can request all services and information, clarify doubts and check power tips. In 2018, 854,465 calls were made through social networks.

The interaction and relationship with customers also occur through Telegram and Whatsapp (number (31) 3506-1116), free applications in which Cemig can offer service through real-time exchange of messages. Customers can access services related to the issuance of the energy bill's copy, report consumption (meter reading), and power outage through these applications.

The in-person service is carried out via "Rede Cemig Fácil de Atendimento", through 145 Branches and 633 Service Centers. In order to streamline customer service, Cemig has been providing self-service terminals in its branches since 2015 so that customers can identify debits and obtain the invoice copy. This service channel closed 2018 with 2,279,438 calls made.

The phone service, in turn, is made through "Fale com a Cemig", at numbers 116 and 0800 721 0116 (for calls at the border of the concession area or out of the state and via land-line). The channel is available to all customers, 24 hours a day, 7 days a week.

In this channel, requests for emergency services related to electrical system, information and requests for commercial services are made. In addition, Cemig provides Cemig Torpedo, a text messaging service - SMS — operated in the number 29810, in which the consumer can report power outage, consult debit consultation and request meter. In order to use the system, it is enough if the costumer inform account holder's CPF or CNPJ number and the desired service word that describes the service.

Cemig wants to provide better care and interaction for its customers with special needs. For this reason, Cemig offers personalized services to this public in its various channels, such as: Speak with Cemig (0800 723 8007), Cemig Torpedo, online channels and Cemig Atende application.

All these channels have service for the hearing impaired. Online channels can be used by users with special needs through adapted software and devices. The service branches have adequate facilities, in accordance with the standards of accessibility (ABNT-NBR 9050).

Also worthy of note is "Cemig Atende Employee," a recently launched relationship channel that involves the entire workforce and enables any employee to provide customer services, such as: consulting technical information, checking the progress of commercial services and request some services. In many cases, this enables you to resolve the customer problem immediately.

In 2018, Cemig launched CMS, a project that provides improvements in Cemig's relationship with its customers through simplification of processes, compliance with regulatory requirements, compliance with deadlines for service delivery and improvement of citizen's experience. In order to make these improvements feasible, CMS will monitor information related to the provision of services, deadlines, complaints and operation of commercial systems, presence, telephone and virtual channels. It is, therefore, a new concept in meeting the commercial demands.

One of the Business Intelligence tools developed to follow-up all business relationships with customers by the CMS is the Operations Management of the Distributor - GOD. Through GOD, the Company can analyse its entire chain of relationship with the customer, from the first contact with service channels to all services performed internally or related to field work. This holistic view of customer service enables us to fully analyze the customer interaction process with Cemig, from end to end.

The management of the relationship channels includes monitoring and control through Contact Panels and Service Notes, in which it is possible to verify the services performed in all channels, as well as the quantity of services provided. To give visibility and transparency to the customer service process, all requests are recorded and tabulated. The data of the demands received by the Ombudsman's Office in 2018, by nature and theme, are presented in the tables below.

Nature of the Demand	Cemig Ombudsman (2nd Level)	ANEEL Ombudsman (3rd Level)	
Information	18,365	29,683	
Complaints	13,396	15,161	
Denouncements	3,313	106	
Compliments	28	7	
Suggestions	22	24	

Topic of the Demand	Percentage
Network Extension	15.30%
Consumer Complaint	11.10%
Power failure	10.50%
New Connection	7.70%
Electrical Damage Reimbursement	7.60%
Charging of Irregularities	5.10%
Quality of Service	4.90%
Re-connection	3.30%
Frequent interruptions	3.10%
Cadastral Change	3.10%

#### **Consumer Committee**

The Consumer Committee of Cemig represents the interests of all classes of consumption (residential, rural, commercial, industrial and Government) collectively advocates for their rights. It has six effective members and six alternates, indicated by representative entities of classes of consumers.

It is the Committee's role to give due consideration to the suggestions received, to cooperate in overseeing and comply with denunciations and complaints made towards Cemig, based on the general conditions of electric power supply.

In 2018, the Committee held four regular meetings, two regional meetings in the municipalities of Ituiutaba and Pompéu, and three special meetings with representatives from all classes of consumption. The Distribution and Marketing Director of Cemig attended the last meeting of the year.

The main themes discussed were related to:

- Tariff review applied in the year, monitoring of the Construction Works Program -PRAR, monitoring of Cemig and ANEEL Ombudsmen;
- Distributed generation and its market;
- Follow-up of legislation and regulation of the electric energy sector;
- Improvement of draft regulation for the regrouping of areas of electric energy distribution concessions subject to common corporate control; and,
- Monitoring of customer service indicators.
   In addition, the directors participated in seminars, regional meetings of councils and events of ANEEL, National Seminar of Distribution of Electric Energy (SENDI), meetings of the Forum of Associations of the Brazilian Electrical Sector (FASE) and the Chamber of Commercialization of Electric Energy CCEE.

The Committee also made contributions to the following Public Hearings: ANEEL's PAs 005/2018, 012/2018, 027/2018, 028/2018, 030/2018, 037/2018, 044/2018, 046/2018 and 052/2018. CP010/2018 and 045/2018 of the Ministry of Mines and Energy.

## 7.5 DEFAULT RATES AND NON-PAYMENTS

The economic recession still persistent in 2018 contributed to a growth of the stock of debt above average. However, considering the efforts undertaken, since December 2016 the company does not present a considerable increase in the percentages established, demonstrating stagnation and control of the indices. Since then, the indicator has behaved in a relatively stable way and it is expected a fall in this indicator in the scenario ahead.

Cemig uses several communication and collection tools to avoid the increase in default rates. Among the measures adopted by the Company are contact by telephone and e-mail, SMS and letter of collection, negativation of defaulting customers, judicial collection and mainly stoppage of power supply. In 2018, a total of 990,521 power cuts were made, 400,000 more than in 2017. The 2018 data<sup>44</sup> is shown in the following table.

Power cut duration	Number of power cuts per duration
< 48 hours	362,595
48 hours - 1 week	192,752
1 week - 1 month	104,927
1 month - 1 year	324,680
> 1 year	5,567

In addition to these various collection tools, Cemig has opened up the access and ways by which customers can negotiate their debts more flexibly, in order to reach optimal levels of compliance.

In 2018, Cemig structured a new management model in the relationship with customers. Among several initiatives, it is worth highlighting the availability, via a virtual branch, of negotiation for installments of debts.

The proposal aims to promote differentiated interactions with customers and facilitate access to means of negotiation and payment. In addition to facilitate the process for customers, the installment of debits through this channel offers lower interest rates. Cemig also carried out specific campaigns, with differentiated conditions for negotiation with special customers and retail customers. The intention of these actions is the recovery of overdue loans, the non-recurrence of default of the customers as well as cash reinforcement through payments of installment plans.

As a result of these action fronts of Cemig, default was 5.64% in 2018, which is considered satisfactory and represents an improvement on default of 5.92% in 2017.

95

<sup>&</sup>lt;sup>44</sup> EU27, G3

## 7.6 SAFE USE OF ENERGY

Safe use of energy is a relevant matter to Cemig precisely because it deals directly with health and safety issues of customers and population45.

#### 416-1

Cemig knows the risks and dangers inherent in the use of the electric system by the population and is dedicated to prevent and monitor the occurrence of accidents throughout its concession area. Respect for life is one of the values of the Company, present in the new strategic planning approved in 2018. Efforts to promote population safety are highlighted in the "Minimize Impacts in the Community" initiative. This initiative presents a specific guideline for this theme: "Expand the actions of accident prevention with the population."

Despite seeking permanent improvement of safety of its networks, Cemig understands that a network in perfect technical and safety conditions, by itself, does not prevent the occurrence of accidents, due to the exposure of the system to interferences and user interventions. The Company acts with civil society by providing information and clarification regarding the safe use of energy and promoting awareness of the population regarding necessary care to live close by to energy networks, avoiding accidents and saving lives.

#### 417-1

Cemig invests in communication for the safe use of energy: it conducts campaigns, provides channels for clarification, provides teams for verification and guidance to consumers on risk situations, among other tasks to report on the safe use of electricity.

Throughout its concession area, Cemig promotes accident prevention actions, by guiding and educating directly, through lectures and reports on radio and TV, and indirectly, with different types of educational material published in electronic media and in the form of booklets, folders and posters.

Direct presentations are targeted to construction industry sites, schools and various companies. The indirect approach covers to wide dissemination of these matters through Cemig's Internet and social media portal. In 2018, Cemig invested approximately BRL 3 million in these actions.

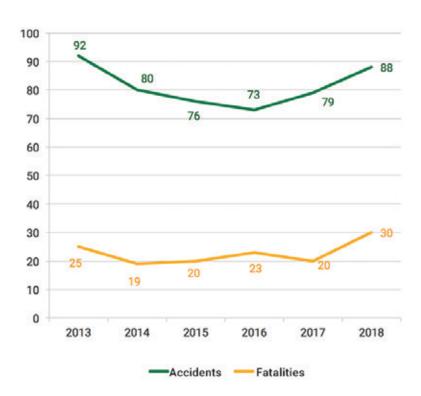
<sup>&</sup>lt;sup>45</sup> The materiality exercise, carried out in 2018, identified the theme "Occupational Health and Safety and the Population" as a material theme for the Company.

There were no records of cases of noncompliance with regulations and voluntary codes concerning marketing communications, product and service information and labeling, nor concerning the health and safety impacts of products and services. Here is a disclosure of some of the campaigns, newsletters, magazines, booklets, games and other content formats about safe use of energy.

The entire communication of the company respects the recommendations of Brazilian Association of Business Communication - Aberje; contracted companies that elaborate the campaigns follow the Brazilian Code of Self-Regulation Advertising - Conar.

Even with all Cemig's efforts throughout 2018, company's accident records with the population in the concession area showed a 11% increase compared to 2017. Among these accidents, those that resulted in death increased by 50% in relation to the previous year. The following table shows the accidents with and without deaths recorded in the last six years<sup>46</sup>.

## **Accidents with the population**



When an accident occurs, an investigation process is initiated. The conditions of the event are evaluated to verify the causal link between the occurrence and activity or operation of Cemig's asset.

<sup>46</sup> EU25, G3

In December 2018, there were 329 lawsuits pending, involving accidents with third parties, with deaths and injuries occurring because of activities or assets of the Company. Out of this total, 18 lawsuits involving the Company's assets were judged in 2018.

In order to deal with an increased rate in accidents and deaths during the first semester of 2018, in August, the Board of Executive Officers of Cemig organized a workshop to address Population Security in Electric Power Distribution, with the objective to discuss the contribution to the definition of guidelines of Population Security Plan.

The participants, leaders of Cemig D, identified main causes and defined necessary actions to reduce the accidents with the electrical network, addressing the following topics (considered of greater relevance):

- Hazard signaling and network protection: mapping critical areas of greatest probability of occurrence of accidents with the electric network, based on the history of these occurrences and the technical information, such as terrain profile, grid, street and socioeconomic aspects;
- 2. Intelligence and prioritization of critical areas of risk: Replacement plan of nets by protected in critical locations;
- Communication with local community and engagement: conducting diagnostic research in priority areas, in order to identify and apply the ideal and most effective form of communication to reach target public, especially informal construction and maintenance workers.
- 4. Attitude of Cemig's employee and third parties: training of the meter reader to identify, during his/her work routine, situations of risk of population accident with the electric network (e.g., construction/maintenance near the network, need for tree pruning and possible irregularities).

The objective of Cemig is to map and implement the necessary actions to prevent accidents of the population with the electric network.

## 7.7 SAFE USE OF ENERGY

Cemig remains aligned with the best practices in the information security market, working with other companies in working groups to improve information management.

Cemig has a Cyber Security Working Group for Cemig GT's Operations Center, Power Plants and Substations, whose objective is to raise the level of protection of supervisory and control network and Cemig's operation center in order to avoid and, if necessary, react effectively to cyber-attacks.

Cemig is subject to compliance with legal requirements of Sarbanes-Oxley Act because it has shares traded on New York Stock Exchange. To ensure compliance with this law, the

Company has established an IT risk management and control system based on COBIT 5<sup>47</sup>, which is audited annually by internal and external auditing. This management system, based on Brazilian Standard ("ABNT") NBR ISO/IEC 27001:2013 is aligned with best market practices, and it guarantees information security at Cemig. This is done through management and control of policies, risks, communication, classification of information and security of information. In addition, there are recurring actions to improve processes, communication, awareness and training.

All infrastructure management, operation and IT services are structured based on the best practices defined by the Information Technology Infrastructure Library (ITIL) model, aiming to improve continuously IT services delivered to the business.

Cemig participates in several groups that develop studies related to information security, among which stand out: (i) the ABNT Security Techniques Study Committee, the National Network on Information Security and Cryptography - RENASIC; (ii) ABRAGE's Strategic Facilities Security Committee; and (iii) the Cyber Security Temporary Task Force of the Brazilian Association of Electric Power Transmission Companies - ABRATE.

Cemig also collaborates with Center for Studies, Response and Treatment of Security Incidents in Brazil - Cert.br, through its Computer Security Incident Response Team - CSIRT.

Other actions carried out in 2018 by Cemig<sup>48</sup>:

- Preventive actions to avoid possible cyber-attacks. It is worth to highlight that two
  vulnerability analyzes and an invasion test in Cemig's computerized systems were
  published on the Internet. The treatment began in 2018 and will continue in 2019;
- Acquisition of a vulnerability management software solution to assess the protection
  of its cyber environment by supporting the company to establish an effective vulnerability management process. The solution is implemented and in 2019 will be used in
  all analyzes of technical vulnerabilities of Cemig environment;
- Start of Cemig GT cyber asset inventory tasks as part of the activities of the working group created to implement cybersecurity controls in accordance with sub-module 10.14 of the network procedure of the National System Operator (ONS). This inventory will be continued in 2019;

<sup>&</sup>lt;sup>47</sup> Control Objectives for Information and related Technology 5 - COBIT 5 is a business model and global management for corporate IT governance and management.

<sup>&</sup>lt;sup>48</sup> In addition to the communication campaigns and the annual surveys, the Company carried out an online training in information security. 10,464 users from 38 companies of the group were trained through a distance learning platform (EAD).

For monitoring purposes, the company has been carrying out an annual information security survey for 13 years. The survey is conducted with allemployees, contractors and trainees to check the knowledge level of Cemig employees and the adaptation of the environment and technology to good information security practices.

Lastly, Cemig organizes, annually, the event "Up to date with information security." In 2018, the lectures "Digital transformation and its consequences" and "How to measure the effectiveness of cybersecurity in energy infrastructure and the ICS (Industrial Control System) system" were held. The event also featured a stand-up comedy that brought to the public daily issues of information security

The cyber security diagnosis of the operation center and distribution substations is expected to occur in 2019, which will assess the compliance of the operating procedures against best market practices and assess the level of protection against cybernetic countermeasures of Cemig's facilities.

#### 418-1

There was no occurrence in 2018 regarding breach of privacy or loss of customer data. Cemig does not commercialize or make commercial use of its customers' data.



Juliano Marcial (Power Plant Operation)

## 8. ENERGY SUPPLY

## **8.1 MARKET EVOLUTION**

The commercialization of energy by Cemig takes place through its wholly-owned subsidiaries, Cemig D and Cemig GT, also involving the other companies in which Cemig GT has interests: Horizontes Energia, Sá Carvalho, Cemig SHP, Rosal Energia, Cemig Geração Camargo, Cemig Geração Itutinga, Cemig Geração Salto Grande, Cemig Geração Três Marias, Cemig Geração Leste, Cemig Geração Oeste, Cemig Geração Sul.

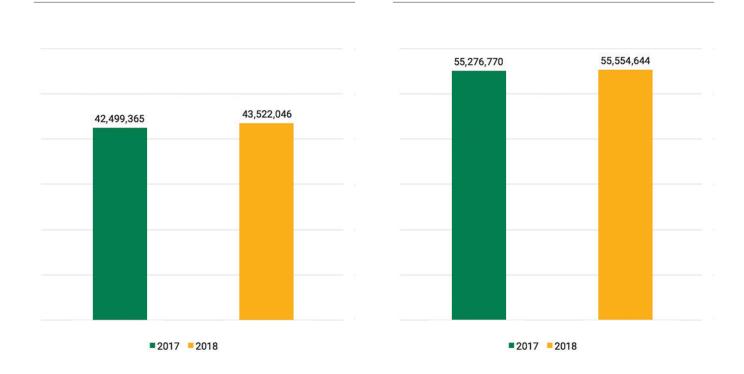
#### 102-6

In this market, Cemig sells energy in both the ACL and the ACR<sup>50</sup>. In 2018, energy sold by Cemig increased by 0.5% in relation to 2017. There was also an increase in sales of energy to final consumers and own consumption, which grew 2.41% in relation to 2017. In turn, sales to generators, independent energy producers, distributors and marketers totaled 11,991,355 MWh in 2018, representing a reduction of 6.15% when compared to the previous year.

<sup>&</sup>lt;sup>49</sup> As presented in chapter seven.

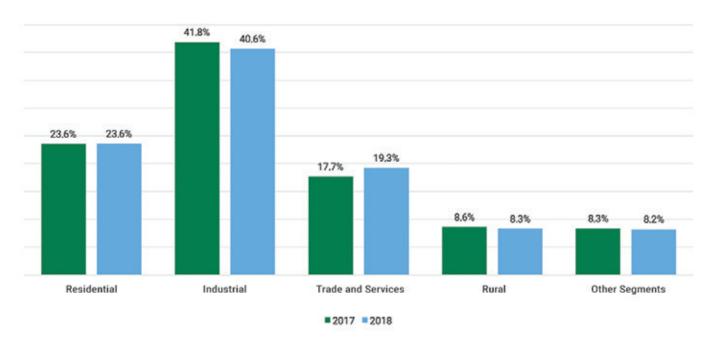
## **Energy Marketed by Cemig Group (MWh)**

# Sales of Energy to Final Consumers and for Own Consumption (MWh)



Cemig's performance, detailed among its different classes of consumers, is described below:

## Sales for Final Consumers<sup>49</sup>



<sup>&</sup>lt;sup>50</sup> EU3, G3

#### RESIDENTIAL

Residential consumption accounted for 18.48% of all energy distributed by Cemig Group and 23.6% of energy sold to final consumers. In 2018, residential consumption totaled 10,266,434 MWh, an increase of 2.58% in 2018 compared to 2017. The average monthly consumption per consumer in 2018 was 125.8 kWh/month, which represents an increase of 1.6% compared to 2017 (123.8 kWh/month). This increase in residential consumption can be explained by:

- incorporation of 52,147 new consumer units;
- greater number of billing days in the 2018 calendar (365.3 days) compared to 2017 (364.2 days);
- acceleration of the economy in 2018, which grew by 1.1% of Gross Domestic Product51 GDP in Brazil and 1.4% in Minas Gerais, accumulated in the year to September, compared to the same period in 2017.

#### **INDUSTRIAL**

In 2018, energy invoiced to the industrial class, accounting for captive and free customers in Minas Gerais and 23 other states, accounted for 31.84% of the total volume traded by Cemig Group and 41.7% of energy sold to final consumers. This figure was 17,689,182 MWh, representing a reduction of 0.4% compared to 2017. This result is the composition of decreases of 0.85% in the captive segment and 0.33% in the free market.

The result of the captive customers was affected by the reduction of 1,473 (1.99%) consumers. As for free customers, the result is related to the reduction of 9.23% in the amount of energy supplied in 2018 to Cemig GT's free customers.

#### COMMERCIAL AND SERVICES

For Commercial and Services class, the total billed in 2018, considering captive and free customers in Minas Gerais and other states, represented 15.08% of the total volume of energy sold by the Cemig Group and 19.7% of energy sold directly to end consumers. The amount of 8,380,346 MWh traded represented an increase of 11.63% in relation to the previous year.

The variation observed in this segment is associated with the 1.15% increase in the volume of energy billed to Cemig D's captive consumers and 41.5% in the volume of energy billed to free customers, both by Cemig GT and by the other companies in which has interests.

<sup>&</sup>lt;sup>51</sup> The Brazilian GDP data is publishedby the Brazilian Institute of Geography and Statistics (IBGE) and Minas GeraisGDP data are released by João Pinheiro Foundation.

As presented for the residential segment, growth of 1.1% of the Brazilian GDP and 1.4% in Minas Gerais contributed to the increase in consumption in the captive market. The significant increase in free market consumption, in turn, is associated with the incorporation of 82 new facilities.

#### RURAL

The consumption of rural class in 2018 totaled 3,615,402 MWh, corresponding to 6.51% of the energy marketed by Cemig Group and 8.5% of the energy marketed to end consumers. This figure represented a reduction of 0.44% compared to 2017. Within the rural segment, the irrigation and conventional agriculture and livestock categories presented, respectively, a reduction of 6.6% and an increase of 3.5%.

#### OTHER CLASSES

Other classes involved in the commercialization of energy - Government, Street Lighting, Public Service and Own Consumption - accounted for 6.43% of Cemig Group's energy in 2018 and 8.4% of energy sold to end consumers. This amount totaled 3,570,682 MWh, representing an increase of 1.04% compared to 2017.

#### **Wholesale Business**

#### SALES IN THE FREE CONTRACTING ENVIRONMENT

The commercialization of energy in the ACL, for marketers, generators and independent energy producers, results from the conclusion of short-term sales agreements. In 2018, commercialization of energy via ACL and bilateral agreements reached 9,657,866 MWh, a reduction of 7.27% compared to 2017, the year in which there were more short-term agreements and the amount sold by Cemig GT for energy marketers was higher.

#### SALES IN REGULATED PROCUREMENT ENVIRONMENT

Due to contractual reductions in 2018, sales of energy in the ACR decreased by 1.21% in relation to the previous year, totaling 2,333,489 MWh.

302-1

	Energy sales by consumer class (MWh)		
	12/31/18	12/31/17	Variation %
Total (MWh)	55,554,645	55,276,769	0.50%
Sales to Final Consumers	43,522,046	42,461,888	2.50%
Residential	10,266,434	10,008,423	2.58%
Industrial	17,689,182	17,760,807	-0.40%
Trade, Services and Others	8,380,346	7,507,310	11.63%
Rural	3,615,402	3,651,472	-0.99%
Government	871,325	865,803	0.64%
Street lighting	1,383,878	1,366,938	1.24%
Public Service	1,315,479	1,301,135	1.10%
Own Consumption	41,244	37,477	10.05%
Supply to other concessionaires	11,991,355	12,777,405	-6.15%

## 8.2 BALANCE OF ELECTRIC ENERGY

#### 302-5

The table below shows Cemig's consolidated balance sheet of electricity, comprising the purchase and sale transactions carried out by the companies of the Group in 2018<sup>52</sup>.

CEMIG GROUP (INTEGRAL COMPANIES) TOTAL RESOURCES TOTAL REQUIREMENTS 80,190 GWh 80,190 GWh CEMIG D SALES IN THE CAPTIVE MARKET **ENERGY PRODUCED** 4.871 **ENERGY** 25,271 SOLD 73.309 CEMIG GT SALES IN THE FREE MARKET 25,326 TRANSFER TO AUTOPRODUCERS **ENERGY PURCHASED** 75,319 RELATED COMPANY SALES 1,800(5) LOSSES -DISTRIBUTION **NETWORK** SALES OF CEMIG GT TO DISTRIBUTORS 2,492(6) 6,381 SALES IN MRE 200 LOSSES -**BASIC NETWORK** SALES IN CCEE 500 18,220

Comprises the energy balance of the Cemig group: Cemig D, Cemig GT, Cemig PCH, Horizontes, Rosal, Sá Carvalho e SPE's. Excludes transactions between companies.

- 1. Energy Trading Contracts in the Regulated Environment CCEAR e Adjustment Auction
- 2. Energy Reallocation Mechanism MRE
- 3. Generation injected directly into the Distribution Network (includes distributed micro generation)
- 4. Program to encourage alternative sources of energy- PROINFA
- 5. Bilateral Business Agreements CEMIG GT, Sá Carvalho, Horizontes, Rosal, CEMIG PCH e SPE's
- 6. Sales of Cemig GT in the Regulated Contracting Environment- ACR

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<sup>52</sup> EU2, G3 and EU12, G3

## 8.3 POWER QUALITY

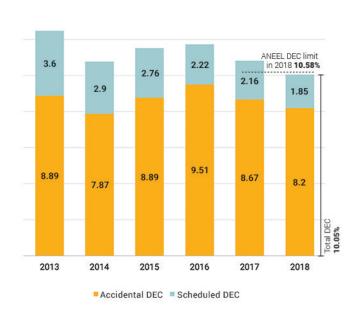
In order to meet the standards expected by customers and required by the regulatory agency, Cemig develops actions and initiatives to improve operational management, organization of the logistics of services to respond emergencies, and performance of inspections and preventive maintenance of the substations, distribution lines and networks. The Company invests also in training of its professionals, in advanced technologies and standardization of work processes.

The DEC (Equivalent Duration of Interruption per Consumer Unit) and FEC (Equivalent Frequency of Interruption per Consumer Unit) Indicators are used to evaluate the effectiveness of the actions and initiatives carried out by Cemig. The analysis of these indicators observes the difference between interruptions caused by accidents and scheduled interruptions, related to the procedures of improvements in the electrical system that eventually demand the interruption of the power supply.

The following graphs show the evolution of the DEC<sup>53</sup> and FEC<sup>54</sup> continuity indicators. In 2018, both DEC and FEC presented their lowest values when compared to the historical series of five years.

### Cemig's DEC, by type

## Cemig's FEC, by type





<sup>53</sup> EU29, G3

<sup>&</sup>lt;sup>54</sup> EU28, G3

In 2018 approximately BRL 46.2 million was paid in compensation to Cemig consumers for breach of individual indicators of electricity supply continuity (DIC, FIC, DMIC and DICRI). Despite the reductions of the DEC and FEC indicators, in 2018 the compensation amount was 30% higher than in 2017.

Year	Compensation (BRL million)
2014	20.1
2015	37.3
2016	43.1
2017	35.5
2018	46.2

## **8.4 ENERGY LOSS MANAGEMENT**

#### 302-5

The management of energy losses is one of Cemig's strategic objectives, since it represents unrealized revenues and indirectly impacts to the environment, such as increasing greenhouse gas emissions. The losses are represented as an energy requirement of Cemig's services, since they directly influence the amount of energy that must be generated and distributed to meet a given demand. In addition, the control of electrical losses is also related to the quality of the energy supply and the safety of the population, which are relevant to the Company.

#### 302-5

Total loss in distribution (IPTD) indicator is calculated by the difference between total energy injected into the distribution system, verified by the Chamber of Electric Energy Commercialization (CCEE), and the total energy consumed by the market. The IPTD is segmented into technical losses - PPTD and non-technical losses - PPNT.

Technological losses are considered as those inherent to the process of transportation and distribution of energy along the equipment and transmission and distribution lines. Its result is influenced by energy dispatching conditions of the plants, works that are carried out to improve electric system, changes in consumer behavior, among other factors. The technical losses are calculated according to current regulatory methodology (Prodist - module 7<sup>55</sup>).

<sup>55</sup> www.aneel.gov.br/modulo-7

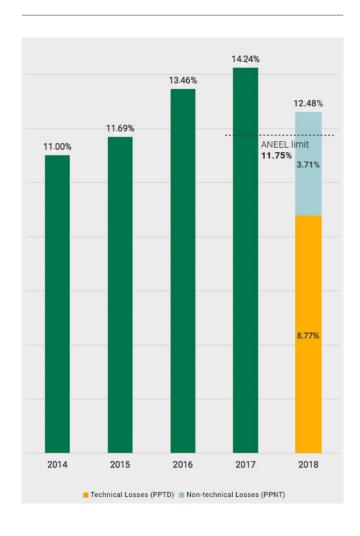
Non-technical losses, on the other hand, relate to deficiencies or irregularities in the measurement and billing of consumer units, as well as the existence of clandestine connections in the distributor's network.

As most non-technical losses occur in the low voltage network, ANEEL defines the percentage indicator of this loss in relation to the volume of energy transported in the low voltage network. The control and reduction of non-technical losses, in this way, is fundamental to minimize Cemig's financial losses, which are, in part, passed on to consumers' tariffs in the tariff review process.

The main risk associated with the management of energy losses is related to non-compliance with regulatory targets established by ANEEL for the current tariff cycle (2018 to 2022). The main business impact of the inadequate management of losses in the electricity system of Cemig D is the commitment of the financial sustainability of the company due to the lower billing. When considering the limits imposed by ANEEL in the last tariff review, it is possible to attest risk's high degree, mainly due to the adoption of simplified statistical models for the calculation of technical losses and non-technical losses.

The models adopted by ANEEL have presented increasingly challenging limits for the Companies of the sector. In addition, 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 budgetary restrictions for the necessary investments and controls.

### **Total losses in distribution**



The calculation of the indicators of energy losses showed that the IPTD in 2018 was 12.48% in relation to the total energy injected into the distribution system. Out of this total, 8.77% was related to technical losses (PPTD), while 3.71% was related to non-technical losses (PPNT), amounts expressed in relation to total energy injected into the distribution system. This result is above the target established by ANEEL for Cemig in the 4th tariff cycle, which runs from 2018 to 2022 (goal of 11.75% in 2018). Nonetheless, the result for 2018 represents a reduction of 1.76% compared to 2017, when the IPTD was 14.24%. In 2022, the goal set by ANEEL for Cemig will reach 11.23%, which will require continuous efforts to conform the Company to ANEEL's goal.<sup>56</sup>

In 2018, the PPTD indicator presented a reduction of 0.22% in relation to the value of 2017 (8.99%). It should be noted that Cemig improved the recognition of regulatory technical losses, which are losses related to the process of transportation and transformation of energy throughout the equipment and transmission and distribution lines. Due to work carried out since 2014, which aimed to implement a new methodology for calculation of technical losses, and technical discussions with ANEEL during Cemig D's latest tariff review, this indicator, which represented 7.84% in the 3rd tariff cycle (2013-2017), now represents 8.77% in the 4th tariff cycle. The reduction in technical losses is also caused by the implementation of technical works to improve and strengthen the electric system. Between 2018 and 2023, investments of BRL 4.5 billion are foreseen in the electric system.

Regarding the PPNT indicator, in 2018 there was a reduction of 2.58% compared to 2017, and the result in 2018 was 10.53% in relation to the low voltage market, for a regulatory goal of 7.31%. Seeking to stabilize and reduce levels of non-technical losses, Cemig intensified the combat actions after 2017, succeeding a period of increase of the indicator, due to Brazilian economic recession. In 2018, in order to reduce non-technical losses, Cemig promoted several actions that focused on inspecting consumer units suspected of fraud. 185 thousand inspections were carried out throughout the State of Minas Gerais, representing an increase of 85% in relation to 2017 (99 thousand inspections). These inspections led to an increase of BRL 59 million in Cemig's revenue, in addition to having recovered BRL 18 million.

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<sup>&</sup>lt;sup>56</sup> EU12, G3

Other actions undertaken in 2018 to mitigate non-technical losses were:

- inspection missions in strategic points of Belo Horizonte and Minas Gerais, covered by media (television, radio, newspaper, social networks, etc.);
- anti-fraud operations that resulted in the withdrawal of 500 clandestine power connections:
- elaboration of 150 documents that disclosure frauds identified in systems of measurement and sending to the police authorities, aiming to criminalize of recurrent fraudsters;
- remote monitoring of approximately 12 thousand large customers, representing a 43.5% screening of Cemig D's revenues;
- replacement of 48,000 obsolete meters, modernizing the measurement park;
- replacement of the communication system of 75 free customers, allowing greater reliability and agility in billing.

Finally, in order to achieve Cemig's target for regulatory losses up to 2022, the company developed a Combat Plan for the 2018-2022 horizon. The following actions are planned for 2019:

- execution of 300 thousand inspections in consumer units;
- deployment of remote monitoring in 25 thousand large low voltage customers;
- replacement of 80,000 obsolete meters;
- inspection of 100 thousand points of public lighting;
- regularization of the energy supply of 20 thousand families living in low-income regions occupations areas.

## 8.5 ENERGY LOSS MANAGEMENT

Tariffs theme is very relevant for Cemig, since the value of the tariffs practiced directly affects the Company's economic and financial situation and its sustainability. The methodology adopted by ANEEL to define tariffs and regulatory revenues presupposes that the defined revenue is sufficient for the concessionaire's economic and financial balance.

The revenue defined and approved by ANEEL, in the Distribution and Transmission business, is in the form of a tariff and the Annual Revenue Allowed - RAP. For the Generation business, especially as provided by Law No. 12.783, of January 11st, 2013, the matter became extremely relevant.

## Cemig Distribuição

Cemig D has its tariffs regulated and supervised by ANEEL. In addition to the definition of tariffs, the Agency also determines the cost associated with each type of consumer, which is used to calculate the different tariffs between various consumer strains.

In this tariff setting process, Cemig D acts in defense of the Company at ANEEL to recognize the costs and investments required to provide quality and availability of services.

Tariff-billed revenue includes coverage for two types of costs: manageable costs and non-manageable costs. The manageable costs correspond to operational costs of the distribution, remuneration of shareholders and share of reintegration of the invested capital. Non-manageable costs are those that the distributor collects from the consumer and passes on to other agents in the industry, such as energy purchase, transportation (transmission) and sectorial charges.

## **Annual Tariff Price Adjustment**

The Tariff Review occurs annually and every five years, as established in the agreement. Tariff price readjustment is intended to fully pass on non-manageable costs. It also intends to monetarily adjust the manageable costs, which were established in the Tariff Review. The index of readjustment of the manageable costs is the IPCA, and on this value is deducted the X-Factor, to capture the productivity, according to methodology of the regulatory model of price-cap.

Out of the amount collected in the invoice, 20.9% is in Cemig D and is intended to remunerate investments, to cover depreciation and costing of the Concessionaire, being this last portion called Parcel B. The remaining 79.1% are transferred to cover purchase of energy (28.5%), sectorial charges (12.9%), transmission costs (6.5%), called Portion A, in addition to ICMS (25.1%) and PASEP/COFINS (5.8%) taxes. As determined by the Federal Constitution, Cemig is obligated to collect taxes directly in the consumer's account and pass them on to the competent authorities. In Minas Gerais, consumer units registered as low income households, as defined by ANEEL, which are beneficiaries of the Social Tariff and whose monthly billing corresponds to the average consumption of up to 3 kWh per day, are exempt from ICMS.

It is also charged the Contribution for Costing of Public Lighting Service (CIP), whose values are defined by municipalities. Cemig only raises the public lighting charge and passes it on to the municipality, which is responsible for the services of design, implementation, expansion, operation and maintenance of public lighting facilities.

## **The Tariff Flag System**

Tariff Flag is a system instituted by ANEEL to indicate to consumers the actual conditions and costs of electricity generation in the month of consumption, allowing the customer to respond more rationally to energy price. The mechanism came into force in January 2015, as determined by Sub-Module 6.8 of the Tariff Regulation Procedures - PRORET.

The Tariff Flag system is represented by the green flag, which indicates favorable conditions of energy generation, not involving a tariff increase, and by the yellow and red flags, which indicate less favorable and critical conditions of energy generation, resulting in an increase to the Energy Tariff Rate.

The transfer of resources from the billing of Tariff Flag Ranges is carried out by distributors to the Centralizing Account, managed by Electric Energy Trading Chamber - CCEE. Resources available in this account are passed on to distributors, according to the need to cover the costs of power generation by thermoelectric source and short-term market exposures.

Besides the tariff indicator, the Tariff Flag Range System is an important mechanism to mitigate the mismatch between expenditure and energy purchase tariff coverage.

## Cemig Geração e Transmissão

The transmission revenue of Cemig GT consists of the sum of revenues of all transmission assets. Thus, the Concession Agreements established an Annual Allowable Revenue (RAPs) of the assets of the existing system that constituted the initial revenue which assures concessionaire's economic and financial balance.

As it operates in a regulated market, revenues from Cemig GT's transmission assets are established by ANEEL, and are updated in the periodic tariff review, extraordinary tariff review and annual tariff readjustments. Similar to what occurs in the Distributor, the Company acts with the Regulatory Agency to recognize its costs in the review, readjustment and ratification processes of the RAPs for new assets.

The annual readjustment of transmission revenue occurs in July of each year, except when there is a Tariff Review. The purpose of this process is to correct the inflation-approved RAP, to add to RAP revenue from the reinforcements and improvements that went into commercial operation in the last tariff cycle (July of the year prior to June of the year of adjustment) and to calculate the Adjustment Portion. The methodology of the regulatory model is the Revenue-cap.

The inflation index used by ANEEL to readjust Cemig GT's revenue is the IPCA. In addition to the concession 006/97, Cemig GT still has the concession of a bided substation, SE Itajubá, whose readjustment also occurs in July, with the IGP-M as its index.

## **8.6 ACCESS TO ENERGY**

ODS1 ODS7 ODS8 ODS17

Cemig participates in government programs and initiatives that promote electric inclusion.

The Rural Electrification Program – PRAR, is one of these initiatives and was instituted by the federal government with the objective of bringing quality electricity to the rural area. PRAR has as its main axes the development and social inclusion. In the State of Minas Gerais, the government implements the program through Cemig, which is responsible for bringing electricity to the rural area of the 774 municipalities in its concession area and serving approximately 50,000 rural properties.

Cemig has connected new rural customers to the electricity grid to meet PRAR requirements. All service to the PRAR was prepared by Cemig aiming to attend, first, older requests of customers in the entire State of Minas Gerais. In this sense, by the end of August 2018, Cemig had made 16,171 power connections of new rural customers compared to an initial goal of 15,674 calls for the period. The goal of the program was fulfilled with 103% achievement.

PRAR is a highly complex logistics program, that invested in the construction of more than 15 thousand kilometers of networks, installation of 40 thousand transformers, thousands of poles and investments of about BRL 800 million. It was established in October 2015 and until August 2018, more than 53 thousand customers (30 thousand old orders and more than 23 thousand new requests) have been served, surpassing the initial target of 50 thousand connections. With this, Cemig D has already regularized 698 municipalities, which have the Rural Market Service Index - IA, greater than 99% and represent 90% of the concession area of Cemig D.

A government program regulated by Decree No. 9.357 of April 27, 2018, which extended it until 2022, aims to promote social inclusion through the scaling of the supply based on discounted payments for the use of energy to low-income families.

Cemig also applies a social tariff, which it is a discount on the electricity bill for low-income families<sup>57</sup>. In 2018, an average of 582,639 consumers of Cemig received monthly tariff benefits related to the social tariff, in the total amount of BRL 165.03 million per year.

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<sup>&</sup>lt;sup>57</sup> To receive the discount in the tariff, consumers must comply with the provisions of the law, namely, it is entitled to the benefit of social tariff those residential consumer units that are used by families enrolled in the Sole Register for Social Programs of the Federal Government (Cadastro Único) or who receives the Benefit of Continuous Rendering of Social Assistance - BPC. The discount is only applicable up to the consumption of 220 kWh and the indigenous and quilombola families have a 100% discount up to the consumption limit of 50 kWh/month. It is also worth noting that for the benefit to be granted, the last cadastral update should have occurred up to two years. The social tariff of electric energy results in a cumulative discount on the tariff applicable to the residential class according to the range of consumption. For more information on how to request the benefit, access https://www.cemig.com.br/pt-br/atendimento/Paginas/tarifa\_social.aspx.

The risks related to this program concerns a delay in the transfer of such resources and consequent impact on the distributor's cash flow. The loss of revenue of the distributors with the subsidy granted to low-income residential consumers, as well as other subsidies, is monthly covered by a contribution from the Energy Development Account (CDE).

In 2018, a study was carried out to measure and evaluate social and economic impacts generated by the new energy connections carried out by Cemig in the rural area. It was verified that there is an increase of the income of families in the rural region due to arrival of electric energy. This is due to many positive effects that access to energy promotes, such as: the use of electrical tools and equipment, resulting in greater productivity, the use of appliances, and the availability of light for studies and readings.

According to the National Household Sample Survey (PNAD), by the Brazilian Institute of Geography and Statistics (IBGE), in 2015, there is a difference of BRL 379.46 in the average household income per capita among the electrified and non-electrified rural municipalities in the Southeast Region. Considering the average of two people per household, in 2017, for example, the 21,502 new power connections in rural areas carried out by Cemig allowed an increase in family incomes in the order of BRL 16,318,297.80. In 2018, 16,171 new power connections led to a growth in family incomes amounting to BRL 12,272,495.28.

#### **Distributed Generation**

The Distributed Generation (GD, electrified and non-electrified) consists of the generation of energy near the place of consumption, distinguishing it from the traditional model of centralized generation, because it does not use the transmission system. This concept of generation has been diffused in the world, supported by the opening of markets of the electricity, gas and oil sectors. Other factors that have fostered distributed generation are the environmental issues and the maturing of technologies applied to this type of generation. In general, the technologies applicable to this segment can be:

- Motor-generator (diesel, gasoline, ethanol and natural gas and biogas);
- Microturbines:
- Small wind turbines (horizontal and vertical);
- Small and micro hydroelectric power plants;
- Fuel Cells; and
- Photovoltaic solar panels.

ANEEL Normative Resolutions 482/2012 and 786/2017 defined and regulated the GD business in Brazil, also determining conditions for the energy compensation mechanisms associated with this generation. GD is provided through mini-generation or microgeneration plants, which are defined as power plants with an installed power less than or equal to 75 kW (microgeneration) or more than 75 kW and less than or equal to 5 MW (minigenera-

tion). Also, qualified cogeneration, according to ANEEL regulations, or renewable sources of electric energy, must be used, connected in the distribution network through facilities of consumer units. The solar photovoltaic source has been the most widely used in the GD plants already implanted and under implantation in Brazil.

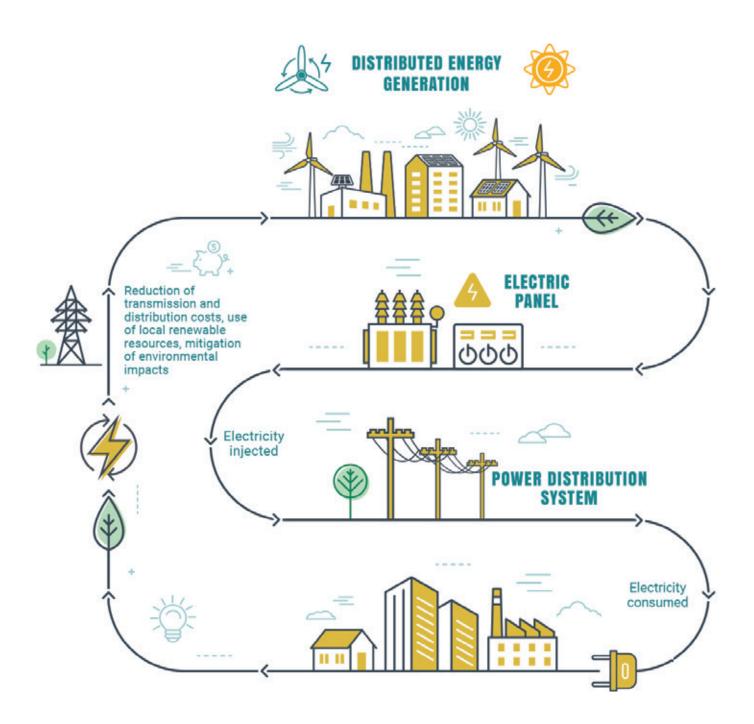
In general, the presence of small generators near the loads can provide several benefits for the electrical system and utility companies, among which the following should be mentioned:

- The postponement of investments in expansion in the distribution and transmission systems;
- Low environmental impact;
- Improvement of the network voltage level during the heavy load period;
- The increase of energy efficiency of the source by reducing production losses and electricity transmission;
- · The diversification of the energy matrix; and
- Favoring the creation of new business models applicable to the electricity sector.

On the other hand, it may occur impacts such as:

- Increasing the complexity and stability of network operation;
- Difficulty to charge the use of the electric system;
- The possible incidence of taxes and the need to change the procedures of the distributors to operate, control and protect their networks.
- One solution to these impacts is Smart Grid or even a more complex and integrated planning system, the Smart Cities.

Cemig, a pioneer in the process of distributed generation, aligned with the development of technology, connected the first microelectricity generation unit in Brazil in September 2012, the same year that ANEEL created the Electric Energy Compensation System. Since then, Cemig has been leading the market for distributed generation connections in the country. In the period between the publication of Resolution No. 482, in 2012 and December 2018, 10,713 generating units were already connected by the Company, of which 10,622 (99%) were photovoltaic solar source, 64 as a thermal source (biogas), 24 as a hydraulic source and three cogeneration (biomass), totaling an installed capacity of 113.7 MW with Distributed Generation. When analyzed in the national scenario, the connections made by Cemig represent 20% of all distributed generation connections in Brazil and the 113.7 MW installed by Cemig represent 18% of the 676 MW installed in Brazil.

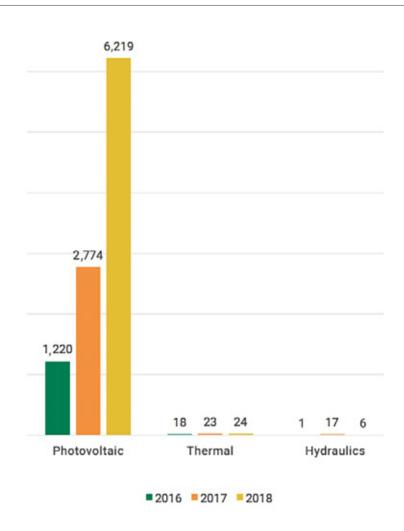


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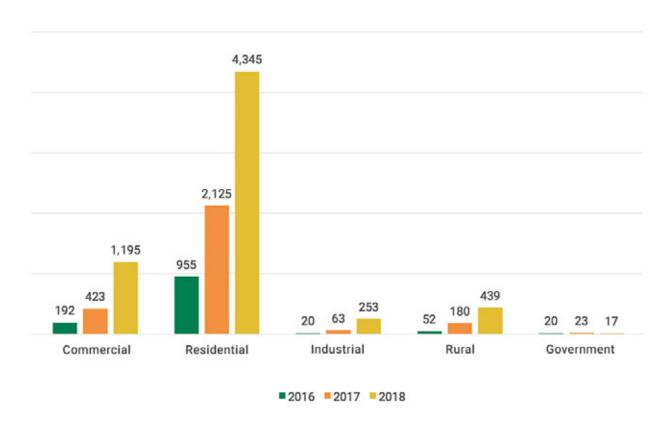
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It is important to highlight the rapid evolution of this market and the significant increase in demand for this solution. In 2018, 6,249 new power connections were carried out by the Company, which almost doubled the total number of power connections in the concession area of Cemig. This number represents an increase of 122% compared to the 2,814 power connections carried out in 2017. The profile of the connections in the GD is predominantly of low voltage - approximately 98% -, and by photovoltaic generation. The evolution between 2016 and 2018 stratified by connected generating units, consumption classes and types of sources, has the profile presented in the following graphs, with the aforementioned predominance of photovoltaic generation and residential generation:

## Number of connections per generation source type



## Number of connections per consumer class



It was observing this maturation of the distributed generation market, especially the photovoltaic generation technology, which in June 2018, Cemig consolidated its entry into the GD business through the creation of a wholly-owned subsidiary, focused on meeting this demand, Cemig Geração Distribuída S.A. - Cemig GD. The company is already expected to realize 250 MW of power connections in the next two years.

In addition to the creation of a company to serve the market of distributed generation for final consumers, Cemig intends to invest in the use of GD for its generator park. During 2018, investments were approved in photovoltaic solar plants (UFV), and work has begun on the implementation of the first Cemig minigeration plant, UFV Janaúba, with a power of 5MW and with a forecast for energization in February 2019.

## **Energy Efficiency**

The Energy Efficiency Program of Cemig D (Smart Energy) has been developing projects aimed to guide the population about correct use of electric energy since the 1980s, according to specific legislation of the time<sup>58</sup>. In 2018, BRL 47.05 million was invested in the implementation of new technologies and strengthening of the culture of rational energy use through the awareness and use of more efficient equipment. These energy efficiency actions include low-income families, hospitals, non-profit entities, rural dwellers, educational institutions and public agencies.

<sup>&</sup>lt;sup>58</sup> The specific legislation regulated by the National Electric Energy Agency - ANEEL, in effect, determines the application by the distributor of a minimum percentage of net operating revenue in energy efficiency projects, in addition to the annual publication of a Public Call for Projects, where the society has the opportunity to present proposals to be executed with the Energy Efficiency resource. In 2018, BRL 40 million was made available for the Call for Energy Efficiency Projects.

The actions carried out in 2018 are presented below.

ACTION	Target Audience	Quantity Completed	Investments	Energy Savings	Reduction in peak-	Avoided CO2
		(Consumers)	2018 (BRL)	(MWh/year)	demand (kW)	(t)
Educational	Network of Public schools	1,029	9,102,840			
Installation of solar heating systems Low Income	Low Income Families	628	2,381,202	64,511	25,124	4,787
Efficiency of low income communities (Bulbs, Refrigerator, Visits)	Low Income Families	29,347	4,642,991	235,492	107,411	17,474
School Efficiency (Lighting and Photovoltaic)	Network of Public schools	147	2,832,636	166,773	47,109	12,375
Installation of solar heating systems in hospitals	Public and philanthropic hospitals	6	10,231	24,411	94,839	1,811
Efficiency of Hospitals (Autoclaves, Lighting, Surgical Light, Dryers and Photovoltaic)	Public and philanthropic hospitals	40	11,369,580	230,019	86,200	17,067
Installation of solar heating systems in hospitals	Long-term care facilities for the elderly	5	244,593	6,162	2,714	457
Bonuses for engine replacement	The entire society	37	2,244,005	552,247	45,159	40,977
Financing of Projects selected by Public Call	The entire society	1	6,981,823	8,400	1,262	623
Projects in progress	Non-Profit Consumers		6,737,112	0	0	0
Management Plan			505,510			
TOTAL			47,052,528	1,288,015	409,818	95,571

#### 305-5

In addition to the Energy Efficiency Program, Cemig has Efficientia, a wholly-owned subsidiary of the Company created in 2002. The company is an ISO 9001 certified Energy Service Company (ESCO), which provides customers in the commercial, industrial and service sectors with the development and feasibility of technology solutions aimed at energy efficiency and the consequent reduction of emissions of greenhouse gases.

More information about Efficientia can be found at this http://www.efficientia.com.br/Site-Pages/P%C3%A1gina%20Inicial.aspx.



Pollyana Jeruza de Faria (Financial)

## 9. FINANCIAL RESULTS

For 2018, Cemig reported a net income of BRL 1,700 million, compared to BRL 1,001 million for 2017, a year-on-year increase of 69.83%. The main variations in revenue, costs and expenses, and the company's financial results for 2018 are also presented below.

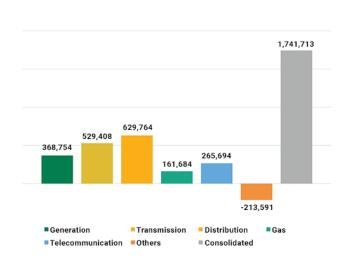
## 9.1 NET INCOME (BRL MILLION)

Cemig's consolidated net income and the breakdown by operating segment are as follows:

## **Cemig's Net Income**

## 3,137 2,492 1,742 1,001 334 2014 2015 2016 2017 2018

# Net Income by operating segment



## 9.2 OPERATING INCOME

102-7

The composition of operating income is as follows:

Operating Earnings			
BRL thousand	2017	2018	Variation (%)
Gross supply of electricity	23,701,361	24,871,995	4.94%
Revenue from Use of Electric Distribution Systems - TUSD	1,610,593	2,044,599	26.95%
CVA and other financial components	988,260	1,973,064	99.65%
Transmission Revenue			
Transmission Concession Revenue	371,066	410,852	10.72%
Transmission Construction Revenue	24,827	95,712	285.52%
Transmission Indemnity Revenue	373,217	250,375	-32.91%
Generation Indemnity Revenue	271,607	55,332	-79.63%
Distribution Construction Revenue	1,093,921	801,778	-26.71%
Adjustment of the expectation of the cash flow of the indemnifying financial asset of the distribution concession	8,586	325	-96.21%
Revenue from Financial Adjustment of Bonus for Granting	316,880	321,427	1.43%
Transactions with energy in CCEE	860,108	217,218	-74.75%
Gas Supply	1,758,692	1,995,406	13.46%
Fine for breach of standard continuity indicator	-	(44,326)	
Other Operating Incomes	1,483,377	1,584,094	6.79%
Taxes and charges levied on revenue	(11,150,805)	(12,311,634)	10.41%
Net Operating Revenue	21,711,690	22,266,217	2.55%

## 9.3 GROSS ELECTRICITY SUPPLY

Revenue from gross electricity supply totaled BRL 24,872 million in 2018 compared to BRL 23,701 million in 2017, representing a 4.94% growth.

#### **END CONSUMERS**

Revenue from energy sold to end consumers, excluding the Company's own consumption, was BRL 21,882 million in 2018 compared to BRL 20,438 million in 2017, a year-on-year increase of 7.07%.

The main items that affected the 2018 revenue are as follows:

- Cemig D's annual tariff adjustment, with an average negative impact on consumer tariffs of 10.66%, applicable as of May 28th, 2017 (full effect in 2018);
- Cemig D's annual tariff readjustment, with an average positive impact on consumer tariffs of 23.19% positive, applicable as of May 28th, 2018;
- Higher revenues from the 'Tariff Flags' system, resulting in BRL 654 million in 2018, compared to BRL 454 million in 2017. This variation is mainly due to the drop-in reservoirs' levels, activating the 'Yellow Flag' and 'Red Flag', which led to greater revenue from additional charges related to the Flag's additional tariffs; and
- Growth of 2.50% in the amount of energy sold to end consumers.

#### MARKET EVOLUTION

Regarding the energy sold to other consumption classes, Cemig highlights the 11.63% increase in the amount of energy sold to the commercial segment, mainly due to the inclusion of new customers in Cemig GT's portfolio.

There was also an increase of 2.58% in the amount of energy sold to the residential sector, largely due to the incorporation of new consumer units by Cemig D.

On the other hand, there was a reduction of 0.40% in the amount of energy sold to the industrial segment, mainly due to the non-resumption of the industrial sector's activity growth at the expected levels for the year.

## 9.4 OPERATING COSTS AND EXPENSES

Operating costs and expenses amounted to BRL 19,042 million in 2018 compared to BRL 18,817 million in 2017, an increase of 1.20%. More information on the composition of operating costs and expenses is available in Explanatory Note 29 to the 2018 Standardized Financial Statements (DFP).

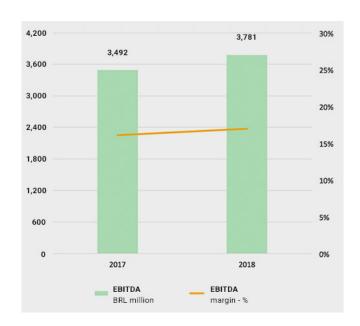
## 9.5 EBITDA - BRL MILLION

The Company presented an increase of 8.28% in EBITDA. In line with the variation of EBITDA, EBITDA margin increased from 16.09% in 2017 to 16.98% in 2018.

#### **EBITDA 2018**

EBITDA - BRL Million	2017	2018	Variation (%)
Income or loss of the year	1,001	1,700	69.83
+ Income Tax and Social Contribution (*) Expenses	644	728	13.04
+ Financial Result	997	518	(48.04)
+ Depreciation and amortization	850	835	(1.76)
EBITDA	3,492	3,781	8.28

<sup>(\*)</sup> The income tax and social contribution expenses include the amount of BRL 129 million that is presented by the net result of discontinued activities.



The main items that affected the result are described in the 2018 DFP.

## 9.6 INCOME TAX AND SOCIAL CONTRIBUTION

The Company reported the amount of BRL 728 million in income tax and social contribution expenses in 2018 in relation to a BRL 2,304 million income, before tax effects, representing an effective rate of 31.59%. In 2017, these expenses totaled BRL 644 million, in relation a BRL 1,646 million profit, before tax effects, representing an effective rate of 37.80%.

These effective tax rates are consistent with the nominal rates in Explanatory Note 10(d) to the 2018 DFP.

## 9.7 NET FINANCIAL INCOME

Cemig reports a 2018 financial result in the amount of BRL 518 million net finance expense, compared to BRL 997 million in 2017. The main factors that affected the financial result are laid out as follows:

- Recognition of gains arising from the hedge operation related to Eurobonds in 2018, totaling BRL 893 million, compared to the loss of BRL 32 million in 2017. The adjustment to fair value of the hedge has been positively impacted by a reduction in the variation in the expected future curve for the CDI in comparison to the expected variation of the US dollar. The recorded benefit should be analyzed along with the exchange variation expense of the Eurobonds, as described in the 2018 DFP;
- Reduction of 43.41% in financial investment income, amounting to BRL 116 million in 2018 compared to BRL 205 million in 2017. This variation is mainly due to declining investments in 2018 and decrease of the average CDI rate, which was 6.40% in 2018 and 9.93% in 2017;
- Reduction of 82.20% in monetary income from deposits linked to litigation, amounting to BRL 34 million in 2018 compared to BRL 191 million in 2017. In 2017, Cemig GT had BRL 82 million in revenues due to the overriding provision of the constitutionality of the inclusion of ICMS in the PASEP/COFINS calculation base (more detail in Explanatory Note 13 to the 2018 DFP);
- Recognition of BRL 56 million in revenues regarding credit charges with related parties in 2018. More information in Explanatory Note 31 to the 2018 DFP;

- Reduction of 14.38% in loan and financing charges, totaling BRL 1,256 million in 2018 and BRL 1,467 million in 2017. This result is mainly due to the lower variation of the CDI, the main debt index in the Brazilian market, of 6.40% in 2018 compared to 9.93% in 2017;
- Revenue growth of 34.87% due to increased charges for late payment of electric bills, amounting to BRL 352 million in 2018 compared to BRL 261 million in 2017. This variation is mainly due to the effects of debt renegotiation with consumers, accompanied by interest recognition and monetary restatement;
- Increase of 22.94% in monetary variation expenses on loans and financing, totaling BRL 134 million in 2018 compared to BRL 109 million in 2017. This variation is mainly due to the higher variation of IPCA, one of the main debt indexes in the Brazilian market (3.75% in 2018 and 2.95% in 2017);
- Exchange variation expenses amounting to BRL 579 million in 2018, attributable to raising resources indexed to the US dollar (Eurobonds). In December 2017 and July 2018, the amounts raised were US\$ 1 billion (BRL 3.2 billion) and US\$ 500 million (BRL 1.9 billion), respectively;
- Increase in the net result of monetary variation related to CVA balances and other financial components, leading to a net revenue of BRL 62 million in 2018 compared to a net expense of BRL 41 million in 2017, basically due to the higher balance of net assets in 2018 when compared to the previous year.

More information can be found in the composition of financial income and expenses in Explanatory Note 30 to the 2018 DFP.

## 9.8 LIQUIDITY AND CAPITAL RESOURCES

Cemig's business is capital-intensive. Therefore, the Company historically needs capital to finance the construction of new energy generation facilities, and the expansion and modernization of existing generation, transmission and distribution facilities.

The Company's liquidity requirements are also affected by the dividend policy. Cemig backs liquidity and capital requirements mainly with funds generated from operations and, to a lesser extent, with funds from financing.

## 9.9 CASH AND CASH EQUIVALENT

Cash and cash equivalents on December 31st, 2018 totaled BRL 891 million compared to the balance of BRL 1,030 million on December 31st, 2017 and were not held in currencies other than the Brazilian Real. The reasons for this variation are presented below:

#### CASH FLOW OF OPERATING ACTIVITIES

Net cash generated from operating activities in 2018 and 2017 totaled BRL 1,008 million and BRL 580 million, respectively. The increase in cash generated by operating activities in 2018 compared to 2017 was mainly due to the compensation received for the São Simão and Miranda power plants and to the increase in the Company's profitability.

#### CASH FLOW OF INVESTING ACTIVITIES

Net cash used in investing activities totaled BRL 211 million in 2018, compared to 386 million in 2017. This result is due to the Company's large investments in the period, amounting to BRL 654 million in 2018 and BRL 766 million in 2017, deducting the amounts received from asset sale.

#### CASH FLOW OF FINANCING ACTIVITIES

The cash flow used in financing activities during 2018 totaled BRL 936 million and was composed by the amortization of BRL 3,527 million in financing and the acquisition of BRL 2,980 million in resources. In 2017, this cash flow totaled BRL 159 million and was composed by the amortization of BRL 4,131 million in financing, and was offset by obtaining BRL 3,308 million in funds. It is worth noting the contribution of shareholders for future capital increase in the amount of BRL 1,215 million.

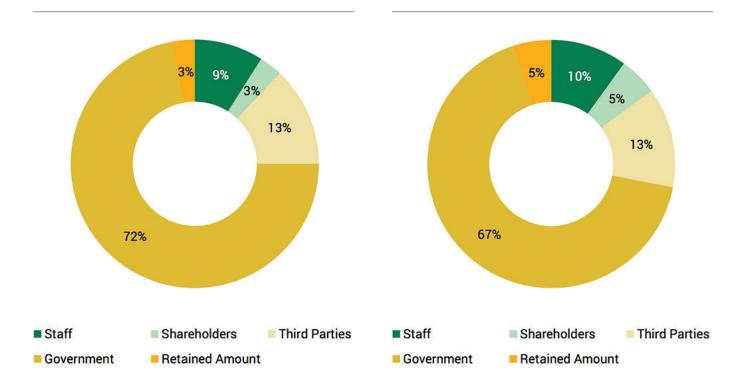
## 9.10 DISTRIBUTION OF VALUE ADDED

201-1

The Value Added Statement (DVA, Demonstração do Valor Adicionado) presents the Company's wealth generation and its representation to the Company. Cemig saw BRL 17,472 million added in 2018 compared to BRL 15,050 million in 2017.

## Added Value Distribution in 2017

## Added Value Distribution in 2018

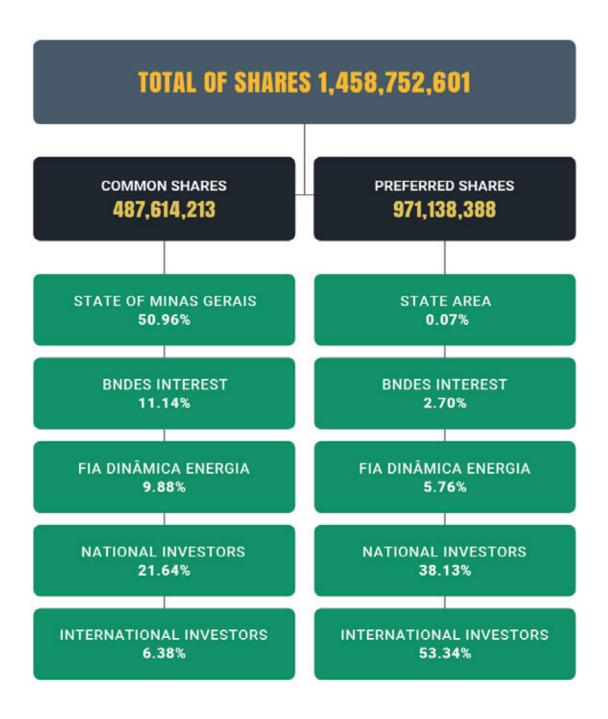


## 9.11 CAPITAL MARKETS AND DIVIDENDS

Cemig was initially listed on the State of Minas Gerais Stock Exchange as of October 14th, 1960, and from 1972 on the São Paulo Stock Exchange (Bovespa) with the symbols CMIG3 (ON) and CMIG4 (PN). Since October 2001, Cemig has been listed on Level 1 of Corporate Governance of Bovespa. Moreover, the Company's shares have been traded since 1993 on the New York Stock Exchange (CIG and CIG/C), having been listed on Level 2 of Corporate Governance since 2001, and on the Madrid Stock Exchange (XCMIG) since 2002.

#### SHAREHOLDER COMPOSITION

As of December 31st, 2018, the Company's capital stock totaled BRL 7,294 million, according to the composition shown below.



#### SHARE PRICES

The following are the closing prices for 2017 and 2018 of the Company's shares in São Paulo (Bovespa), New York (NYSE) and Madrid (LATIBEX).

Designation	Symbols	Currency	Closing 2017	Closing 2018
Cemig PN	CMIG4	BRL	6.39	13.86
Cemig ON	CMIG3	BRL	6.32	15.03
ADR PN	IGC	us\$	1.91	3.56
ADR ON	CIG.C	US\$	1.83	3.93
Cemig PN (Latibex)	XCMIG	EURO	1.78	2.98

In 2018, the preferred shares, CMIG4, had a trading volume of BRL 26 billion, with a daily average of BRL 108.79 million. This trading volume is 57.27% higher than the observed in the previous year and causes our preferred share (PN) to be one of the most traded on Bovespa, providing security and liquidity to investors.

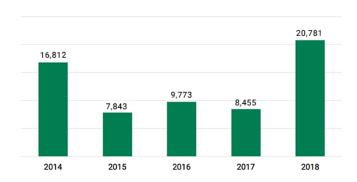
On the New York Stock Exchange, the average daily trading volume of the preferred shares was US\$ 11.74 million, adding up to US\$ 2.96 billion in 2018, maintaining its 2017 level and securing Cemig's position as a global investment option.

In terms of performance, the company was the most traded in the electricity sector on Bovespa. Among the Brazilian electricity sector ADRs traded on NYSE, Cemig had the highest volume traded in 2018.

	CMIG4	CMIG3	CIG	CIG.C	IBOV	DJIA	IEE
2018/2017	116.8%	137.8%	86.6%	115.3%	15.0%	24.0%	-5.6%

The Company's market value is represented by the totality of its shares at market value on the last trading day of each year. In 2018, Cemig's market value had a significant growth of 145.90% in comparison to the previous year.

## **Market Value (BRL Million)**



## PROPOSAL OF ALLOCATION OF NET INCOME

The Board of Directors decided to propose to the Annual General Meeting ("AGM") to be held on April 30th, 2019, the following proposal for allocation of the 2018 Net Income, in the amount of BRL 1,700 million, and the negative balance of retained earnings, in the amount of BRL 115 million, related to the initial adoption of CPC 48, in the amount of BRL 182 million, deducted the amount of BRL 67 million as a result of the attributed cost of Fixed Assets.

- BRL 867 million to be allocated as mandatory minimum dividends to the Company's shareholders, as follows:
  - BRL 210 million in the form of Interest on Capital, to be paid in two equal installments, the first up until June 28th, 2019 and the second until December 30th, 2019, being entitled the shareholders who have their names entered in the Company's Nominal Share Registry on December 21st, 2018;
  - BRL 657 million in the form of dividends for 2018, to be paid up to December 30, 2019, being entitled the shareholders who have their names in the Company's Nominal Share Registry on the date of the AGM.
- BRL 709 million to be held in equity in the Retained Earnings Reserve account to provide funding for the Company's consolidated investments planned for 2019, according to the capital budget.
- BRL 10 million to be held in equity in the Tax Incentives Reserve account related to tax incentives obtained in 2018 as a result of the investments made in the Sudene region.



Vanessa Lyra (Health, Hygiene and Safety), Jeferson Adão (Human Planning and Development )

## 10. PEOPLE MANAGEMENT (HRM)

ODS8

People Management is part of Cemig's strategic planning, because in order to achieve the Company's long-term vision, it is fundamental that employees are committed to its corporate strategy, productivity and trainings. In November 2018, due to the update of this planning, guidelines, indicators and goals in HRM were also updated. Topics covered were personnel management, training and increase of employee productivity, reduction of average cost of payroll, meritocracy, accountability and health and safety of its employees.

Aligned with strategic planning, Cemig's Human Resources Policy guides work relations, the HR management model and the development of programs aiming to generate business value. The following are outstanding programs and initiatives.

## **Strategic HR Program:**

Cemig's Strategic HR Program has initiatives that aimed to improve efficiency of personnel management and ensure quality and availability of personnel to meet needs of consumers and population of Minas Gerais.

Among the initiatives of 2018, the following stand out:

- Approval and implementation of a new Job, Careers and Remuneration Plan (PCCR).
   This update was focused on better adherence to the market and business needs, as well as boosting productivity. The PCCR led to the development of a Position, Careers and Remuneration Policy with governance guidelines for the theme, approved in March 2018.
- Implementation of a new Work-Hours Control System, which is in compliance with work regulations, aiming to mitigate risks and costs of labor lawsuits.
- Launching of the Program of Scheduled Voluntary Dismissal PDVP 2018, a free and spontaneous adhesion program, targeted to employees with time of service in Cemig equal or superior to 25 years until December 31st, 2018. Launched in April, the PDVP 2018 reached 151 accessions and an estimated savings of about BRL 30 million per year.
- Conduct of three public tender applications open for Occupational Physicians, Electricians, Maintainers, Middle Level, Vocational and University Technicians. The job applications, valid for two years and extendable for the same period, accompany the PDVP to recompose the staff and ensure continuity of the company's activities.
- Continuous reduction of Worker's Severance Rate (TFA) of the workforce, reaching the lowest rates historically recorded in the Company.

### **Leadership Development Program:**

Cemig promotes continuous development of its leadership, seeking its excellence. The company is guided by the five Leadership Principles of Cemig: Empowerment (greater autonomy to act as a people manager), communication, meritocracy, teamwork and result orientation.

The Leadership Development Program is an initiative created in this context, with the specific objectives of:

- · Apply Cemig's Leadership principles;
- Develop critical skills and qualifications for high and medium management positions, aiming to continuously improve the results of superintendents, managers and coordinators;
- Transmit and discuss the challenges and possibilities inherent in the management career;
- Develop in the leadership the ability to motivate and guide their superiors, peers, subordinates and clients;

 Develop management and team development skills in leaders, such as focus on results, assertive communication, conflict management, constructive guidance, and delegation of activities.

In 2018, as part of the program's activities, 23 employees at management, superintendence and board level participated in motivational training on knowledge management; and 33 managers and top managers attended the 2018 CEO Forum59. For 2019, Cemig plans to hold an Executive MBA at Fundação Dom Cabral by approximately 70 senior level employees, managers and top managers.

## **10.1 WORKFORGE PROFILE**

102-7 102-8 405-1

Cemig's staff<sup>60</sup> had 6,083 employees at the end of 2018. Out of these, 5,278 are men (86.77%) and 805 are women (13.23%). During this period, women held 12% of management positions and 9.3% of senior management positions. Temporary employees, in turn, totaled 668 people, which represents about 11% of the number of employees. The activities performed by temporary employees in 2018 do not represent a significant portion of all activities that make up Cemig's operation.

#### 405-1

Black, brown, yellow and indigenous employees represent 34.33% of Cemig's own staff.

Regarding the representativeness in management positions, black and brown employees occupy 12% of these positions. In terms of gender and race diversity, by the end of 2018 the workforce had 4% of black and brown women and 30% of black and brown men.

405-1

In terms of inclusion of 50+ group<sup>61</sup>, Cemig relies on the seniority and experience of 1,166 professionals over the age of 50 (19.17%). Employees aged between 31 and 50 years, totalize 4,353 people (71.56%). Other 564 employees are under 30 years of age (9,27%).

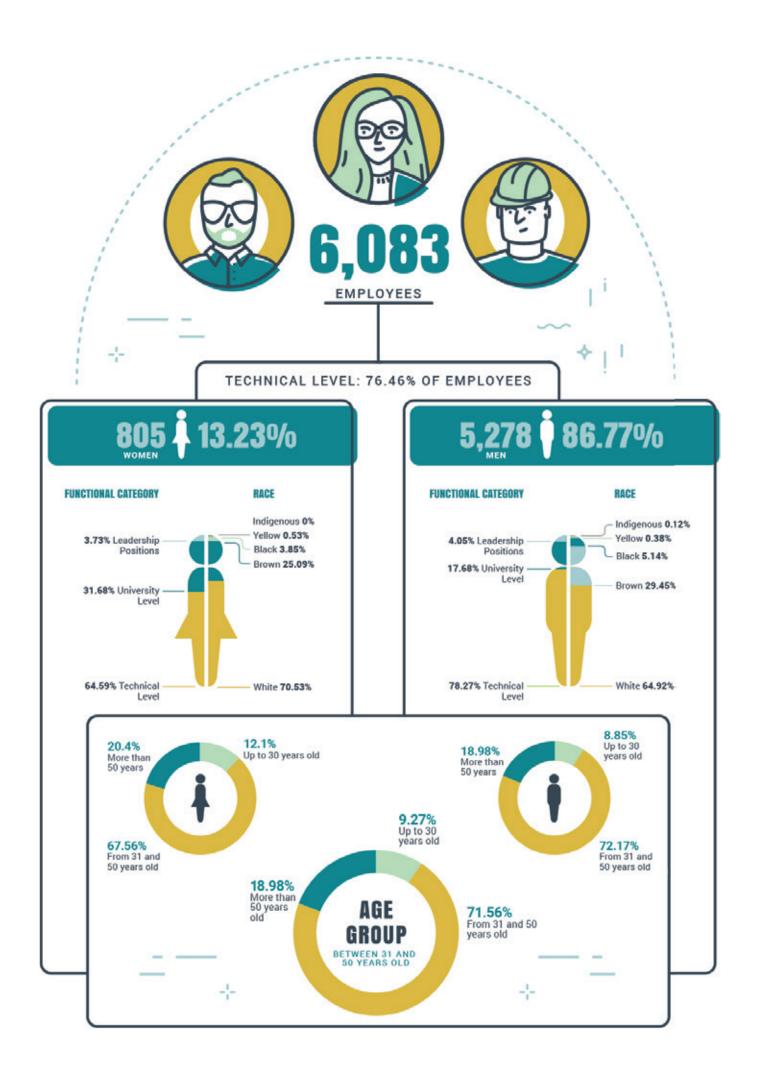
Regarding the stratification by region, considering the nature of the business and the current operations of the company, 99.70% (6,065 employees) of the staff is concentrated in the State of Minas Gerais, with only 0.3% (18 employees) acting out of this state.

102-8 102-22 405-1

In relation to Cemig's officers and directors, all of them are over 30 years of age, with 17% in the 31 to 50 age group and 83% in the 50+ age group. In terms of gender diversity, 31 men (86%) and five women (14%) are part of this group. The presence of women in specific governance bodies is shown in the charts below. In Brazil the identification of race occurs by self-declaration and is not obligatory. Stratification by race in these positions is currently not available.

<sup>60</sup> Permanent and full-time employment agreement. The data is collected by reports generated from Cemig-SAP R3 Staff System.

<sup>&</sup>lt;sup>61</sup> People over 50 years of age.



		CEMIG'S OWN EMPLOYEES									TEMP	ORARY	13	į.
YEAR	1 (100-10) 1	adership ositions		level	15.1	echnical level 2	TO	TAL	( <u>()</u>	emporary Labor	<b>(9)</b>	Trainee	( Al	prentice
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
0015	229	33	1,099	293	5,459	747	6,787	1.073	33	44	162	164	102	153
2015	2	62	1,3	392	6,3	206	7,8	160		77	3	26	2	55
2016	225	30	1,028	270	4,927	639	6,180	939	81	111	83	114	87	117
2010	2	55	1,2	298	5,	566	7,1	19	1	92	1	97	2	04
0017	208	47	875	220	4,000	514	5,083	781	171	166	127	101	63	85
2017	2	55	1,0	95	4,	514	5,8	64	3	37	2	28	1	48
2010	214	30	933	255	4,131	520	5,278	805	172	144	112	130	60	50
2018	2	44	1,1	188	4,0	651	6,0	83	3	16	2	42	1	10

- 1 University level includes all positions that require college dregree to be filled. This level is composed by engineers and analysts.
- 2 Technical level includes administrative technicians and technicians registred on the Federal Council of Industrial Technicians (CFT)





401-1

401-1

In 2018, 151 own employees joined the Program of Scheduled Voluntary Dismissal PDVP 2018 as a continuation of a policy of dismissal of employees in full retirement conditions. Regarding the age group of these employees, 76 were between 30 and 50 years of age and 75 were over 50 years of age. In addition to the adhesions to the PDVP 2018, Cemig had five other dismissals, totaling 156 dismissals in 2018. Out of these, 145 are men and 11 are women, which represents, respectively, 92.95% and 7.05% of the dismissals. All dismissals were made in Minas Gerais. In 2018, the staff turnover in the Company was 4.35%, and for women this figure represents 5.09% and for men 5.094%.

On the other hand, 359 employees joined the company in 2018. 306 were men (85.24%) and 53 were women (14.76%). All of them were contracted in Minas Gerais. As to the stratification of the new admissions by age group, there were 240 admissions of employees aged up to 30 years of age (66.85%), 93 admitted in the age group 31-50 (25.90%) and 26 employees admitted aged 51 or over (7.25%). These vacancies were filled through three Public Tender applications opened in 2017 and two following addendums published in 2018. In 2018, there were 109 vacancies opened in operational level and 120 in middle-level. in middle-level vocational and in university level functions. Admissions regarding

Public Tenders and addendums began in 2018 and are expected to be completed by 2019.

405-1

The company, in compliance with State Law No. 11.867/95, allocates 10% of vacancies offered in public tenders to persons with disabilities. However, in 2018 only 3% of Cemig's staff was made up of this group (188 people). A small number of people with disabilities in the workforce derives from the Company's legal framework and requirements for admission.

In addition to managing its own staff, Cemig also manages contracts and employment relationships of employees hired as Temporary Workforce (MOT), trainees and apprentices.

MOT contracts are signed as a temporary substitution of regular or permanent staff

or complementary service demand - predictable or unpredictable, in accordance with what is prescribed by Brazilian law<sup>63</sup>.

Cemig Internship Program professionally develops students of vocational and university courses, offering the opportunity to practically apply theoretical knowledge. The apprentices, in turn, join the Company through Cemig Learning Program, which professionally trains underprivileged adolescents under the supervision of experienced Cemig employees. As for other contractors, the Company does not directly monitor them, but rather the company in which they work, in compliance with guidelines imposed by Cemig to its suppliers.

Outsourced employees are managed by specific contracts in the contracting business areas, including health and safety issues, a theme present in various contracting stages. Further details are available in the Suppliers chapter of this report.

# 10.2 REMUNERATION, BENEFITS AND PREPARATION FOR RETIREMENT

ODS8

103-1:201 103-2:202 103-3:202 103-1:401 103-2:401 103-3:401 103-1:404 102-2:404 103-3:404

Cemig recognizes the importance of people for the success of the Company's business strategy, competitiveness and prominence in the industry.

Therefore, it develops and periodically updates its PCCR, aimed to attract, develop, value and retain talent. The PCCR defines the reference personnel needed for Cemig's operation, which describes positions, careers and salaries in the Company.

This design reflects current organizational structure and it subsidizes HRM, in order to promote productivity, talent management, budget balance and delivery of results. The PCCR also formalizes criteria for promotions and career advancement, which include, among other factors, individual performance assessments.

<sup>63</sup> Law No. 13.429/2017

#### 202-1 405-2

Cemig pays and benefits its employees aligned with best market practices and gender equity. The ratio between the lower salary of companies of the Cemig Group that have a majority share in Minas Gerais<sup>64</sup> and Brazilian minimum wage in 2018 shows that.

Proportion between Cemig's lowest salary and the Brazilian minimum wage in 2018					
Company of the group	Men	Women			
Cemig Holding	2.55	3.36			
Cemig GT	2.07	2.62			
Cemig D	2.07	2.07			

201-3 401-2

The benefits offered by Cemig aim to contribute to the quality of life and social well-being of employees and their families and promote continuous improvement of organizational climate. All functional categories have the same benefits, except for trainees and young apprentices. The benefits of this group are different (they receive benefits in accordance with the legislation): remuneration (scholarship), transport and meal vouchers.

Cemig grants, as Variable Remuneration, the employee income sharing (PLR), agreed between the Company and its employees, who are represented by trade unions, every two years. The distribution of PLR is based on the achievement of specific goals of each area and common corporate goals aligned with strategic objectives of the Company. In addition to the compensation programs, Cemig offers a number of benefits managed by both the Company and the Complementary Pension Fund of Cemig (Forluz) and Cemig Saúde.

#### They are as follows:

• Benefits managed directly by Cemig: Bi-weekly salary advance; advance of Christmas Bonus in any month of the year up to October of the current year, as requested by the employee; salary advance on return of vacation - installment; reimbursement of expenses of employees and/or dependents with disabilities; education assistance; funeral assistance; 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; salary supplementation for employees on leave of absence under the INSS regime; granting of five consecutive days for civil marriage instead of three legal days; grant of five days to accompany sick relatives; meal/food allowance maintained in absence leave of work for six months and, in case of an occupational accident, for 30 months; childcare assistance from the end of the absence leave under the INSS regime until the child reaches the age of seven for employees, widowed employees who have custody of their children, married employees with an invalid wife, and single, divorced or judicially separated employees, having custody of their children.

<sup>63 99.70%</sup> of Cemig's employees work in Minas Gerais, and this state is the prevailing location of operation.

- Benefits managed by Cemig Forluz Complementary Pension Fund Foundation: Private Pension Plan.
- Benefits managed by Cemig Saúde: Coverage of expenses with medical consultations, examinations, outpatient visits, hospitalizations, surgeries, obstetric care and dental treatment for employees and dependents. Cemig also maintains Health Programs managed by Cemig Saúde, such as "Novos Ares", to stop smoking, and Weight in Balance, for obesity control.

#### 401-2

Cemig is concerned about meeting needs of employees with disabilities, providing guidance and support through the Special Efficient Support Program (PAM). As part of the PAM, Cemig reimburses 50% of the expenses of physically disabled and/or mentally handicapped employees. The reimbursed expenses, subject to prior analysis by the Medical Service of Cemig, may include monthly fees of specialized schools, therapeutic alternatives (art therapy, music therapy, playful therapy, hydrotherapy, equine therapy, swimming, physiotherapy, speech therapy), prosthetics, disposable diapers and others.

#### 401-3

The benefits of paternity and maternity leave were granted to 131 men and 30 women respectively in 2018, seven of whom went on maternity leave in 2019. All beneficiaries maintained their employment relationship with Cemig, even within the 12 months following the return of the leave, which represents 100% return and retention rates for men and women. All 6,083 Cemig employees are entitled to maternity or paternity leave.

Cemig also cares about the well-being of its employees after retirement. Over the next five years, 21.36% of employees will be able to retire, and in a 10-year horizon, 27.06% of the employees will work in the State of Minas Gerais.<sup>65</sup>

Employees who will qualify for retirement (%)							
	from 2019 to 2023		from 2024 to 2028				
Leadership position	University level	Operational technical level	Leadership position				
1.81%	3.55%	16.00%	0.76%	2.78%	23.52%		

<sup>65</sup> EU15. G3

The Company systematically carries out a Retirement Preparation Program (PPA<sup>66</sup>), whose participation is voluntary. The employee has the opportunity to discuss retirement time and its repercussions in personal and family environment. Employee can also discuss medical and psychological approach to this life stage, as well as participate in lectures on entrepreneurship, volunteering, and other activities. In addition, each participant has the right to enroll an adult companion, who may be someone of a close relationship or a member of the family.

In 2018, 131 employees and 51 partners participated in the Seminar, Preparation for Retirement, which are part of PPA. This seminar addresses a number of issues related to health, private pension, psychology, entrepreneurship, social security, life insurance and financial education.

In addition to the PPA, there is ongoing preparation throughout the year through Financial and Social Security Education Program of Forluz - To Live Better. This program addresses issues such as budget management, investments, overcoming indebtedness and how to live better within the financial possibilities of retirement.

Preparation for Retirement Seminar Attendance						
Functional Category	No. of Emp.	Partners	Total			
Leadership	5	2	7			
University level	11	6	17			
Technical level	115	43	158			
Total	131	51	182			

## **10.3 DIVERSITY. EQUAL OPPORTUNITIES AND HUMAN RIGHTS**

ODS5 ODS10

Respect to human rights is at Cemig's frontline. And the company acts aligned with United Nations Universal Declaration of Human Rights, with UN Global Compact and with core labor standards of the International Labor Organization (ILO).

In order to strengthen 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. This commitment is based on practices already adopted by the Company and is used to guide all relationships established between Cemiq and its stakeholders. After making this Commitment formal, the Company carried out a Communication Campaign to disclose it.

<sup>66</sup> This program complies with Law No. 8.842, dated 01/04/94, which establishes that it is the responsibility of public bodies and entities to "create and encourage the maintenance of retirement preparation programs in the public and private sectors, at least two years before their leave of absence."

In order to affirm and guarantee the commitment made, Cemig develops different initiatives, such as standard clauses respecting human rights, combating discrimination in all its forms and valuing diversity, which are present in all bidding and agreements for the supply of materials and services of the Company.

With a traditionally male professional environment, Cemig has sought to insert and stimulate women to remain at their employee board, from technical to managerial levels, providing equal opportunities and differentiated benefits. Among differentiated benefits, we highlight a follow-up of pregnant employees during gestation, postpartum and the first three months of their children's lives, as well as childcare and the extension of maternity leave from four to six months.

In addition, in 2018, the Company, which is part of the Citizen Energy Program, extended the paternity leave from five to twenty days, in order to stimulate a "responsible parenthood". As the debate about gender differences increases, Cemig has sought to adopt measures that promote greater equality and division of labor.

Cemig has a Declaration of Ethical Principles and Professional Conduct, which has as its principles the fight against all forms of moral and sexual harassment and discrimination in all its forms, the valuing of diversity and equal opportunities. At the online recycling training of the Declaration of Ethical Principles and Code of Professional Conduct, conducted in 2018, themes of valuing diversity and combating discrimination were also addressed. In this same training, employees had the opportunity to review Cemig's Commitment to Human Rights. This training was attended by 7,757 employees of Cemig e Participações67, 83% of Cemig's own employees were part of this group. This training accounted for man-trained hours, 10,448 hours.

#### 410-1

In addition, 100% of the 80 security guards received training in matters related to occupational health and safety and human rights during training and retraining courses.

Cemig voluntarily joined the Pro-Equity
Gender and Race Program in April 2016, an
initiative of Cemig for Women Committee
together with Superintendence of Relations and Human Resources. To this end,
the Company prepared a Plan of Action,
implemented from 2016 to 2018, aimed to
promote equity. Actions in the scope of the
program were carried out in accordance with
eight corporate dimensions, namely:

<sup>&</sup>lt;sup>67</sup> Companies: Efficientia, Gasmig, Parati, Proel, Rosal Energia, Sá Carvalho and Brasil IS.

### **People Management:**

- 1. Recruitment and Selection;
- 2. Qualification and Training;
- 3. Functional Rise, Job and Career Plan and Salary and Compensation;
- 4. Benefits Policies; and
- 5. Health and Safety Programs.

## **Organizational Culture:**

- Mechanisms to combat practices of Inequality, Gender and Race Discrimination, and Occurrence of Moral and Sexual Harassment:
- Training in the Organization's Relationship Network; and
- Internal and External Institutional Propaganda.

Due to Pro-Equity Program, training and debates were held on themes related to inclusion and valorization of diversity, thematic campaigns in Events such as International Women's Day. These events addressed gender equity and studies to verify how women are participating in corporate issues of Cemig, such as in Management Committees and in programs of expansion and technological innovation.

#### 405-2

Cemig also seeks gender equity in payments and compensation of its employees. The difference in remuneration between women and men at the technical level stems, in part, from the additional hazard, which is added to the base salary to make up the final remuneration in the cases of professionals who work in risk areas. The greater presence of men working in Cemig's risk areas therefore impacts on the difference between the average remuneration of the two genders. Regarding gender inequality in the remuneration of other levels, Cemig has been working to reduce it.

Mathematical ratio for the basic salary and the remuneration of women compared to men								
		erage of Women's Salary Average of Men's Salary	11	Average of Women's Remuneration / Average of Men's Remuneration				
Company of Cemig Group		Job Type/Level		Job Type/Level				
	Leadership	Technician	University Level	Leadership				
Cemig Holding	1	1.05	1.04	0.9	0.83	0.78		
Cemig D	0.86	0.99	0.87	0.89	0.8	0.8		
Cemig GT	0.89	0.9	1.06	0.85	0.87	0.97		

In addition to internal initiatives, Cemig supports actions of citizenship and promotion of diversity and equal rights in society. In September 2018, the Company hosted the LGBTI equal marriage (lesbian, gay, bisexual, trans and intersex), promoted by the Public Defender's Office of the State of Minas Gerais through Human Rights, Collective and Socio-Environmental Rights Defenders (DPDH) - and the notaries of Civil Registry of Belo Horizonte.

The ceremony had the participation of 25 couples, enrolled between July and August. The action sought to make it possible for citizens, especially vulnerable ones, to exercise full citizenship, by regulating their marital legal situation<sup>68</sup>.

#### 412-1 416-1 102-15

A prominent action by the Company in the protection of human rights is to have initiated a due diligence process, carried out by the application of specific methodology to identify actual and potential negative social impacts arising from the Company's activities. From this due diligence process, Cemig also has sought ways to mitigate these identified impacts.

The first step was to evaluate the impact of Cemig's activities on fundamental rights of the UN Universal Declaration of Human Rights according to its nature, positive or negative, and its relevance.

The impact assessment covered 100% of Cemig's own operations and suppliers, as well as the impact on local communities. As a result, Cemig has developed an impact matrix. The matrix displays Cemig's activities that offered a greater risk to fundamental rights and that affected stakeholders, highlighting the negative and more relevant impacts. Based on this result, stakeholders and their rights have been identified and will be treated as a priority by the Company.

#### They are as follows:

Stakeholder	Fundamental human rights
Employees	Right to life
	Right to life
Suppliers	The right not to be subjected to forced labor
	The right to decent and just working conditions

Cemig identified as the greatest risk imposed by its operations to be a risk to its employees' lives, as it threats fundamental human rights mainly due to its work with the power system.

In relation to suppliers, the following were the activities identified as having the highest risk of human rights: implementation of high-voltage distribution companies, construction of distribution networks, maintenance of distribution networks and assistance to distribution customers.

<sup>68</sup> Civil homo affective marriage was allowed in Brazil from a decision of the Federal Supreme Court in 2013.

The actions taken to mitigate these risks are being implemented in 100% of the operations and business of the company (87 hydroelectric and thermoelectric powerplants, wind power stations and photovoltaic plants, 4,930,559 km of transmission lines – 38 substations – and 532,569.18 km of extension of network distribution, besides administrative installations) that is, in all places with high risk there are mitigation initiatives led by the areas of Occupational Safety and Supplies, respectively. The actions are described in the table below.

Stakeholders	Theme	Potential guidelines on the subject	Mitigation actions	Monitoring actions
Employees	Right to life	Cemig must ensure that its employees perform their work activities with the adequate level of safety, thus avoiding accidents that can lead to deaths	Risk analysis; Program of Environmental Risks Prevention; Audits, OHSAS 18001; Inspections and audits in the supply chain made by independent teams; Presentation of the action plan for correcting failures and recurrence, and the effectiveness verified in quarterly audits.	Monitoring and Auditing System for Practical Security Analysis - SIMASP; Monitoring System for Occupational Accidents and Risk - SMART Audits of OHSAS.
Suppliers	Right to life	Cemig must ensure that its suppliers perform their work activities with the adequate level of safety, thus avoiding accidents that can lead to deaths		Technical Assessment Questionnaire; Monitoring and Auditing System for Practical Security Analysis - SIMASP; Monitoring System for Occupational Accidents and Risk - SMART.
	The right not to be subjected to forced labor	Cemig must ensure that its suppliers carry out labor activities in accordance with Brazilian Labor Law, which prohibits forced labor or analogous to that of slave condition.	Provisional contractual clauses of Human Rights; Periodic audits including visits to suppliers' facilities; Verification of working conditions: employees labor rights, legal working hours, minimum of 11 hours between each shift, hygiene and health conditions, accommodations and other items; ATI - Industrial Technical Evaluation; ATE - Contractors Technical Assessment; Procedure PE-MSQL-GDM-02 - IDENTIFICATION OF SUPPLIERS WITH HIGH RISK IN SUSTAINABILITY; IQSC - Quality Index of Contracted Services.	
	The right to decent and just working conditions	Cemig must ensure that its suppliers perform labor activities in accordance with Brazilian Labor Law, which includes, among other things, working hours, dismissal practices, compensation and practices related to compliance with Occupational Health and Safety.	Provisional contractual clauses of Human Rights; Periodic audits including visits to suppliers' facilities; ATI - Technical Evaluation; ATE - Contractors Technical Evaluation; Procedure IDENTIFICATION OF SUPPLIERS WITH HIGH RISK IN SUSTAINABILITY; Indicators: - IDF - Supplier Performance Index; - IQSC - Quality Index of Contracted Services. Inspections and audits in the supply chain made by independent teams through site visits and interviews to verify compliance with requirements; The monitoring and supervision of the agreements is carried out by the management and there may be total or partial suspension of the agreement when there is a risk to the safety of contracted employees.	QAT - Technical Evalution Questionnaire; ATI - Technical Evaluation; ATE - Contractors Technical Evaluation; Use of indicators: - IDF - Supplier Performance Index - IQSC - Quality Index of Contracted Services.

Another mitigation initiative also related to the Right to Life of the Community is the preparation of the Population Accident Reduction Plan with the Electric Network.

The Plan includes several actions: 1) identification of critical areas of greatest probability of accidents occurrence with the electric network (macro form). This identification is based on technical information and history records of such accidents; 2) use of imagery (satellite + cars) - Google Street View model - to identify potential risk points for accidents

with the population (unauthorized civil constructions) and city hall information about construction sites that are close to the distribution network, areas invaded under distribution lines, distribution networks outside standard height (low), poles in poor conditions, etc.; 3) training of 1,600 third-party meter readers of Cemig to identify, during their work routine, situations of risk of population accident with the electric network (e.g., construction near the network, need of tree pruning and eventual irregularities); 4) Communication and engagement with community aiming the reduction of accidents of the population with the electric network.

As a mitigation action related to its own staff, contractors (MOT), apprentices and trainees, Cemig adopts a procedure called Hira-Cemig Model that determines that main health and safety risks, including psychosocial risks, are identified, assessed and controls are established to mitigate them into acceptable levels.

Compliance with commitments made in areas of diversity, equal opportunities and human rights is monitored through Cemig Anonymous Complaints Channel.

#### 406-1

In 2018, the channel received 182 complaints, one of which was registered as gender discrimination by a service provider. The Ethics Committee, through its corporate duties to manage complaints filed in the Anonymous Complaint Channel, took the necessary measures of investigation, analyzed the justifications submitted by the outsourced company and considered the complaint as unfounded. It was considered that the complainant made particular and improper considerations about the general practices of hiring and managing the workforce of that company, which, as found, were not discriminatory. Thus, the need to apply corrective measures to the case was not identified.

In 2018, there were no complaints related to the issues identified in the preliminary stage already executed, due diligence, mentioned above.

# 10.4 PERFORMANCE MANAGEMENT

103-1:404 103-2:404 103-3:404

Cemig's Performance Management aims to stimulate the achievement of organizational goals and promote the development of necessary competencies for the Company. The implementation of an effective Performance Management process contributes to a better performance of Cemig through the alignment between the activities developed by the employees and the initiatives established by the Company's Strategic Planning. It also contributes to the promotion of collaborative dialogue and the planning of employee careers.

### **Performance evaluation**

404-3 103-2:404

Performance evaluation is an important part of Performance Management and, because of that, Cemig has established a People Development program as one of its strategic objectives. This program should encompass 100% of employees, include structured feedback meetings and development plans that express the continued growth of each person, enabling the achievement of agreed goals between employees and their leaders/managers.

In order to comply with this objective, Cemig has developed a People Development Program aligned with Company's strategic planning. The program arose from a need to update people management practices which promote individual development, team productivity and improve the quality of social ties between leaders and teams. In this way, the following are the objectives of the People Development Program:

- 1. Evaluate the degree of contribution of each employee to the compliance with the results, making feasible deliveries of the strategic planning;
- 2. Ensure the full knowledge of its employees through continuous feedbacks;
- 3. Ensure orderly growth through a methodology that fosters a culture driven by results and high performance.

The results of the program include:

- Improvement in the relationship of employees with the work process;
- Improvement and development of people and work teams;
- Strengthening of social bonds and self-esteem in the work environment;
- Improvement of levels of alignment and commitment, with gains in productivity;
- Evaluation of 100% of the employees who were actually working.

In 2018, Cemig conducted two cycles of Performance Evaluation as part of the People Development Program. These evaluations will serve as a subsidy for the individual development of the competencies necessary for the organization and consequent organizational learning.

## **10.5 ORGANIZATIONAL LEARNING**

ODS4

Cemig invests continuously in the construction and management of corporate knowledge. Assertive corporate knowledge depends first, on a well-executed selection process and in which the technical requirements of vacancies are clear and adequate to the needs of the Company.

Cemig performs an external recruitment of professionals to its own staff through Public Tenders Training requirements and necessary qualifications for the proper performance of the job function are established in the Public Notices. In cases which the labor market cannot attend to specific qualification that is demanded to meet the required needs of the Company, as in the positions of craftsmen (e.g., electricians, maintainers, mechanics), the Notice of the Public Job Tender includes an elimination phase of Integrated Background. This phase includes school and professional practice, aiming to ensure the qualification of the workforce. In the processes of internal movements (transfers), background and habilitation requirements necessary to perform the proposed function are also verified<sup>69</sup>.

These requirements are applied to both external provision and transfers and internal selective, and are defined in conjunction with business areas in specific documents called Job Descriptions, which are part of the Company's Job, Careers and Compensation Plan.

### 404-2

Once the professionals with appropriate job skills are hired, the Company provides a portfolio of technical, behavioral and management training, to help the employee develop their knowledge in accordance with the Description of Position established for their role. And, to correct deviations and improve performance, each employee elaborates a Development Plan together with its manager where demand of training drawn is aligned with a need's evaluation.

Cemig's corporate university (UniverCemig) is responsible for training and developing Cemig's employees, by means of the construction of educational solutions, management of its own training programs, hiring of outsourced training courses in Brazil and abroad, and management of post-graduate courses and languages. In addition, UniverCemig operates in the market offering training to other companies, mainly contractors providing services to Cemig Distribuição.

Aligned with this strategy, UniverCemig has been reformulating corporate training processes and, since its creation 10 years ago, built alliances and unified systems and training actions in favor of the Company.

Changes implemented over the last few years include demands evaluation, simplification of corporate instructions and management of critical knowledge for business sustainability.

#### 404-2

The training portfolio is aligned with corporate policies and guidelines and is certified in two international standards: ISO 9001, which certifies quality processes, and OHSAS 18001, which certifies occupational health and safety. In addition, UniverCemig adopts managing approach to its learning solutions that allows flexibility according to Cemig's scenario.

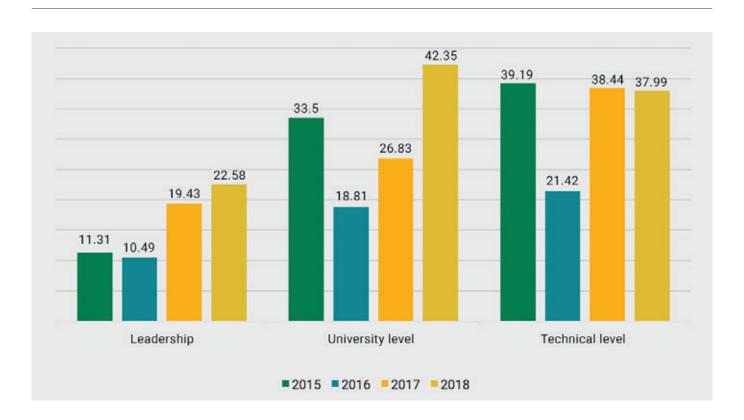
<sup>&</sup>lt;sup>69</sup> EU14-G3

404-1

In 2018, UniverCemig initiated the professional training of 121 Aerial Lines and Network Electricians, 11 Electrical Line Mounting Electricians, nine Transmission Line Electricians, 102 technicians, six engineers and has trained approximately 65 people from contractors who will perform services in energized lines. These capacities contributed significantly to an increase in the number of participations in technical training and, consequently, the man-hour indicator of training. In 2018, 7,233 participations in technical training for its own staff and 3,039 participations for employees of other companies were made possible. In total, there were 325,564 man-hours trained, of which 230,454 were from its own staff and 95,110 were from outsider companies.

Training in 2018	Number of participations	Man-hour Trained (MhT)
Cemig	7,233	230,454
Other Companies	3,039	95,110
Total	10,272	325,564

## Historical average man-hour trained by functional category



There was continuous increase in average man-hours trained at leadership and university levels in the last three years, which indicates a consistent investment by Cemig in the subject. Although the indicator is relatively stable in the last four years at the technical level - with the exception of the fall in 2015 - this is the level with the highest average annual training in Cemig's history.

The indicators show training of almost 100% of the workforce of both genders: 98.73% trained men and 99.88% trained women.

		Number of	employees	Man-hour Trained (MhT)		Average	
Company	Functional Category	Men		Men	Women	Men	
	Leadership	33	5	1,221	252	37	50.40
Holding	University level	56	18	957	152	17.09	8.44
	Technical level	28	3	120	24	4.29	8
	Leadership	67	10	890	100	13.28	10
GT	University level	363	99	22,122	4,233	60.94	42.76
	Technical level	743	81	32,171	1,176	43.30	14.52
	Leadership	90	9	2,082	287	23.13	31.89
D	University level	519	146	17,498	5,899	33.71	40.40
	Technical level	3,312	433	136,880	4,390	41.33	1.014
Total		5,211	804	213,941	16,513	41.06	20.54

In 2018, two research and development projects were launched at UniverCemig: "D0595 - Development of Tacit Knowledge and Pedagogical Alternation in Vocational Training" and "D0593 - PLAID-UNIVERCE-MIG DIGITAL: digital platform for capacity-building and training of personnel in the Operational Area of Cemig Electric System." Both projects seek to improve and accelerate training of Cemig's employees and increase the effectiveness of the application of training resources. The estimated investment for the two projects is BRL 9,200,000.00.

Another relevant contribution of UniverCemig, in compliance with directives of top management to reduce the number of accidents of the population with the electric network, was the conduction of eight lectures on safety near the networks and facilities of Cemig.

These lectures reached an audience of approximately 350 people. In addition, Cemig invested in the training of meter readers to enable them to identify critical areas, that is, areas in which the population is most susceptible to risk of an electric network accident (e.g., near-grid construction, need for pruning trees and any irregularities) during their work routine. The training, which had a workload of eight hours, was executed on December 5th. 2018 in Sete Lagoas/MG to 30 security technicians from companies contracted for the process of Reading and Delivery of Electricity Bills. These technicians will be the knowledge multipliers for 1,600-meter readers of Cemig Distribuição's entire area of expertise.

BRL 156,432.00 was invested in online courses for approximately 7,000 employees, including officers, directors, inspec-

tors, managers, contractors and trainees. Among the courses in this modality, we highlight those aimed to technical level public - Environmental Regularization of Expansion Projects MB/LV and Operational Communication for Electrical System - and those directed to all employees, such as the courses of the 2018 Declaration of Ethical Principles and Code of Professional Conduct and Safe and Efficient Use of Energy.

Finally, in 2018 UniverCemig implemented the course "TTRP-0053 - Handling, Movement and Mooring Techniques", which provides to participants material on how to handle, move and tie loads carried by Cemig vehicles, aligned with Resolution No. 552 of the National Traffic Council. In this way, the Company avoids accidents as well as penalties and sanctions imposed by the Brazilian Traffic Code.

## **10.6 LABOR AND UNION PRACTICES**

PG3

407-1

Cemig recognizes trade unions as legitimate representatives of respecting its employees' options of affiliation. The Company passes on to these entities the amounts discounted in the payroll of those who are affiliated to them. In this way, the Company complies with the labor legislation, the commitments to the UN Global Compact and the guidelines of its Human Resources Policy.

Cemig has an area that deals specifically with the relationship with trade unions and maintains constant contact with these entities, always seeking to exhaust all the business acceptable means for solutions negotiated in an ethical and respectful manner.

On the framework of the labor force and its trade union relations, in 2018, Cemig identified:

- 3,348 employees affiliated to unions, which represented 55% of the staff;
- 170 active employees who were part of the boards of representative unions;
- 113 employees with provisional stability due to union activity;
- sectoral meetings at the Company's premises, in compliance with the Convention 135 of the International Labor Organization - ILO;
- 22 full-time employees released to trade unions;
- the signing of the Technical Cooperation Agreement, which provides for the release
  of the employees that make up the union boards so that they can dedicate to union
  activities for up to two days in the month.

Every year, Cemig negotiates with unions to conclude collective bargaining agreements in order to contribute to a good organizational climate and to the achievement of the Company's strategic objectives.

#### 102-41

The negotiation of ACTs and Specific Collective Bargaining Agreements-ACE - for Profit Sharing follows the guidelines established by the Company's Board of Directors. Cemig's collective bargaining agreements are negotiated and concluded with unions of different categories, such as engineers, industrial technicians, administrators and lawyers, and with electricity unions, representing the employees of the administrative-operational technical staff.

These agreements cover 100% of the employees, who are guaranteed all the prerogatives they envisage. The entire negotiation process is communicated to the employees and the agreement, and after being signed, is published on the Company's intranet.

Cemig's collective bargaining agreements expire annually on October 31st, the date agreed between employees and their representatives, and from November 1st, negotiations to establish a new collective agreement begin.

### 403-4

The current ACT, signed in 2017 and valid until 2019, has nine clauses (that cover occupational health and safety issues), among which stand out:

- A commitment to carry out studies seeking collective protection solutions; The reaffirmation that protection must be carried out with the use of Personal Protective Equipment -
- PPE and Collective Protection Equipment CPE;
- Supervision of contractors regarding work safety;
- Issuance of a salubrity report;
- Access of union directors to the meetings of the Internal Commission for the Prevention of Accidents (CIPA).
- Send copies of the meeting minutes to the trade unions;

Transfer of information on frequency and types of diseases and accidents, the notification and summoning of union entities in the event of serious or fatal accidents to follow up the investigation of causes and the payment of the premium for dangerous work and hardship pay.

### 402-01

It is worth noting that clause 34, paragraph two, of the ACT provides for the prior disclosure of operational changes, such as the introduction of new technologies and/or auto-

mation procedures or centralization of activities, to employees and their representatives for search solutions and suggestions. Cemig does not have a determination regarding the minimum time for such communications, but the unions are notified of significant operational changes affecting Cemig's own workforce and, by legal requirement, participate in negotiations on the conditions of those changes and their communication to employees.

# 10.7 OCCUPATIONAL SAFETY, OCCUPATIONAL HEALTH AND WELL-BEING (SSO&BE)

ODS3

103-1:403 103-2:403 103-3:403 403-2

Cemig's Health and Safety Policy is one of the objectives of the Company's corporate strategic map, which is to have safety as a value in the corporate culture.

Intensely publicized, the policy shows the high relevance of the theme for the Company's business and establishes the adequate protection of its entire workforce, made up of its own staff and contractors.

Health and Safety performance directly affects organizational climate, which can also impact the company's brand and reputation, as well leading to labor and legal contingencies.

The principles of the Company's policy are the identification, evaluation and control of risks to occupational health and safety, pro activity in prevention actions, compliance with internal legislation and norms, workers' right to refuse to expose themselves to insecure situations and their accountability - regardless of hierarchical level - due to omission in the commitment to the promotion of Occupational Health and Safety.

As a policy deployment, since 2009, the Company publicizes in its intranet, a Technical Manual on Occupational Health and Safety, which contains a series of internal instructions for compliance.

It also promotes periodic audits and establishes criteria and procedures for accountability and penalties for noncompliance with the policy, standards, instructions, procedures or guidelines on the subject. In addition, Cemig publishes several campaigns and information on its website with the aim to encourage safety practices that contribute to a continuous reduction in the number of accidents, for employees and third parties, and customers.

The Health and Safety Management System of Cemig follows OHSAS 18001 standards and has as its main focus the prevention of occupational diseases and injuries. This management system covers all processes related to the generation and transmission of energy and part of the distribution processes, as well as UniverCemig and the Patrimonial and Industrial Security Management specifically.

For all areas of Cemig, including those that are not covered by the management system, there is also an internal procedure called Hira-Cemig Model, which determines that the main risks to health and safety, including psychosocial risks, are identified, assessed and controls established to mitigate them to acceptable levels.

Since 2015, the Hira-Cemig model has been adopted as a more accurate control in risk management. The table below shows the current coverage of Occupational Health and Safety controls at Cemig.

Activity	OHSAS 18001	Hira-Cemig Model
Generation <sup>70</sup>	99%	1%
Transmission <sup>71</sup>	100%	0%
Distribution <sup>72</sup>	5%	95%

It is also worth noting that in addition to the aforementioned initiatives, Cemig has other tools to assist in the management of the health and safety of employees. They are as follows:

- Risk analysis: made before each operational activity. It considers the specificities of
  each situation, including physical and mental conditions of the workers before the
  beginning of the activity;
- Monitoring and Auditing System for Practical Security Analysis- SIMASP, which standardizes and unifies work safety inspections and feeds the Practical Safety Indicator ISP. This indicator displays the compliance of the work of its own staff and contractors' employees with health and safety requirements and procedures;
- Work Accident and Risks Monitoring System SMART, which generates statistical reports
  according to the accident record by type and is used in monthly accident management;
- The Environmental Risk Prevention Program (PPRA), established in legislation, is
  developed annually in each of the Company's facilities and consists of anticipation, recognition, evaluation and control of physical, chemical and biological risks, serving as
  one of the subsidies for the preparation of Hira-Cemiq risk profiles;
- **Safety Time,** a forum for the presentation and discussion of topics related to Occupational Health, Hygiene and Safety held monthly and, eventually, used for alignment and dissemination of information;

<sup>&</sup>lt;sup>70</sup> In relation to the MW generated in the large power plants.

<sup>71</sup> Regarding the extension of the Transmission Lines of the GT.

<sup>72</sup> In relation to consumers.

- Occupational Health Control Program (PCMSO), implemented at CEMIG, has as its
  main objective the prevention, tracking and early diagnosis of work-related health problems, including subclinical nature, as well as the existence of cases of occupational
  diseases or irreversible damage to workers' health; and
- 403-1 Internal Commissions for Accident Prevention (CIPAs), has representatives of both employees and employer who act autonomously and independently in the prevention of accidents and occupational diseases. Its members have annual mandates and before each term, all "CIPA members" receive training with legally defined programmatic content, through UniverCemig. By the end of 2018, Cemig had 64 CIPAs, which represented 100% of the employees.

Other tools to monitor employee health include periodic and special medical records and examinations, certificate management, psychological assessments, and social inventories. These examinations and evaluations are carried out at employees' workplace. Considering all the periodic diagnostic procedures performed in 2018, including medical and complementary evaluations, the medical service performed a total of 42,603 exams. During these evaluations, it is possible to evaluate the work capacity of the employees, especially those who perform critical activities (work at height, with electricity and in confined space), since it is possible to track and diagnose early pathologies that could cause sudden illness and consequently, occupational accidents. The forecast for 2019 is to perform 49,504 periodic procedures.

There are also campaigns and encouragement for early detection of coronary heart disease, diabetes, dyslipidemia, breast cancer, prostate cancer, bowel cancer and influenza vaccination.

Cemig also offers the following programs of social support to employees:

Dimension	Programs	Description
	Rehabilitation Program	
	Professional	Redirects employees who have had their work capacity reduced due to accident or illness, implying a change of function. The program is developed in an integrated manner by the medical, psychological, social and occupational safety departments with the subsequent approval of the INSS (Brazilian Social-Security Institute). Currently, the program is being restructured.
People	Program for Planning Personnel and Family Budget	Through lectures, social assistance and granting loans, it aims educating employees about the importance of financial stability.
	Social intervention	It aims at guiding and covering the costs of health treatments to employees injured at work and retired due to his/her disability resulting from occupational accident or occupational disease.
	On Duty	On duty on weekends and holidays, in order to provide social services to employees victims of serious accidents and family of employees who have suffered fatal accidents, regardless whether or not they are occupational accident.

403-1

In order to technically develop the electrical sector, altogether with the consequent need to revise work methodologies, the Company maintains internal committees that discuss

technical matters directly or indirectly related to Occupational Health, Hygiene and Safety issues, as well as participate actively in various working groups in the national, international and commissions and study groups of ABNT.

In order to avoid serious and fatal accidents with its work force, the company's top management established a "Zero Tolerance with Serious and Fatal Accidents" guideline, fundamental for the definition of a package of actions to promote health and safety of all CEMIG Workforce. Among the actions developed as part of this commitment in recent years (2015 to 2018), we have:

- Agreement to join the Ibero-American Social Security League to extrapolate borders and seek the best in health and safety practices at work;
- Creation of an Integrated Group for the Prevention of Risks of Occupational Accidents to integrate and disseminate best practices in Health and Safety in the various operational areas of Cemig D and GT;
- Validation of the Work Plan prepared by technicians of 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) Evaluation and Improvement;
- Non-Programmed Educational Checks performed by Engineers and Technicians of the Specialized Services in Safety Engineering and Occupational Medicine (SESMT);
- Creation of the Electronic Management Center of Documents, Occupational Health and Safety of Its Own Staff and Contractors' Employees - GESET, which aims to ensure a trained, qualified and apt workforce, fully managing the health and safety requirements of the workforce.

### **Performance Results**

### 403-2

2018 results are the consequence of a set of actions structured and implemented throughout the year, conducted by Specialized Services in Safety Engineering and Occupational Medicine – SESMT. These actions had the engagement of the employees and contractors in all hierarchical levels. All accidents recorded in 2018 occurred in the State of Minas Gerais. Data by gender, currently, is not available. In 2019, those responsible for data collection are being asked to communicate gender information, already available on Cemig's forms.

Cemig has a computerized system to manage aspects related to Occupational Safety. In this system, Frequency and Severity Rates of accidents are monitored, according to a standard referenced in the Brazilian Standard ABNT NBR 14.280.

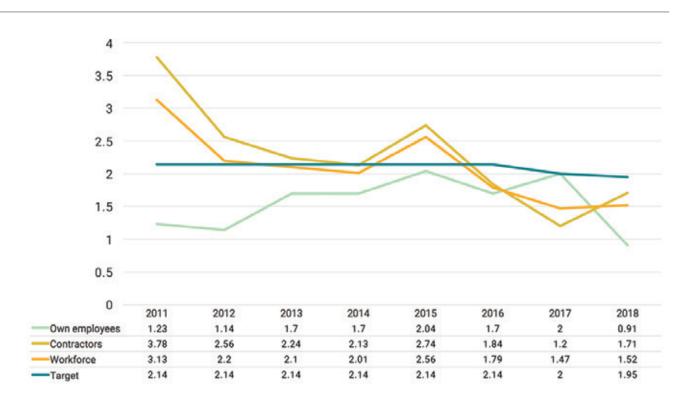
#### 403-2

In 2018, Severity Rate of Cemig's workforce was 39 days of work leave in relation to one million man-hours of risk exposure. The rate for own and contracted employees, specifically, was 21 and 44 respectively. These numbers represent a significant reduction in the severity of accidents occurring and this is the best result achieved since the beginning of the calculation of this indicator.

#### 403-2

The Frequency Rate of Accidents with Leave of Absence (TFA), relative to the workforce (its own staff and contractor's employees), is the main indicator used to monitor the strategic objective of having safety as a value in the business culture. In 2018, the TFA closed with 1.52 accidents per one million hours worked, being 22.05% below the limit of 1.95, established by the Company. Despite being below the limit, when compared to the result of 2017, the TFA showed increase of 3%. This increase was influenced by accidents with contractors, whose TFA increased by 43% in 2018. For accidents with own personnel, in turn, there was a reduction of 55% compared to 2017. Chart 20: Cemig's history of frequency of accidents with leave of absence.

### Frequency Rate of Accidents with Leave of Absence



In 2018 all of the aforementioned actions were fundamental so that Cemig did not register any occurrence of fatality with its Work Force, a fact that had not occurred 23 years ago.

### 403-2

The reduction of occupational accidents and diseases, in addition to cause impact to the TFA, can also reduce social security contribution paid by the Company, since the Accident Prevention Factor (FAP) considers, among other items, the amount of occupational accidents and diseases, as well as their severity. The data historical record is disclosed in the following table.

Type of accident	Category	2015	2016	2017	2018
	Employees	39	24	32	15
Occupational accidents without leave of absence	Contractors	175	122	76	82
	Total	214	146	108	97
	Employees	28	25	20	9
Occupational accidents with leave of absence	Contractors	106	52	36	56
	Total	134	78	56	65
	Employees	3	20		1
Occupational disease	Contractors	ND	ND	ND	ND
	Total	ND	ND	ND	ND
	Employees	398	378	529	206
Days Lost <sup>73</sup>	Contractors	2,387	1,596	680	1,275
	Total	2,785	1,974	1,209	1,481
	Employees	1.23	0.9	1.065	1.15
Absenteeism rate	Contractors	ND	ND	ND	ND
	Total	ND	ND	ND	ND
	Employees	0	1	0	0
Work Related Fatalities	Contractors	5	1	2	0
	Total	5	2	2	0

<sup>&</sup>lt;sup>73</sup> The days lost start counting from the date of the accident and are counted in calendar days.



Ivan Lucas Peixoto (Contracts, Services and Integrated Solutions)

# 11. SUPPLIERS

PG5	PG6	PG10	ODS8 OD	\$12				
103-1:	308	103-2:308	103-3:308	103-1:408	103-2:408	103-3:408	103-1:409	103-2:409
103-3:	409	103-1:414	103-2:414	103-3:414				

Cemig has a consistent supply chain management, encompassing well-defined policies, commitments, responsibilities and objectives within the Supply Chain, going beyond regulatory compliance<sup>74</sup>.

Cemig's relationship with its supply chain is guided by its Supply Policy, by its Declaration of Ethical Principles and Code of Professional Conduct and by legislation. The Company also has specific policies on social and environmental responsibility, which are also applied to its suppliers. These policies follow, strictly, the guidelines of SA 8000, ISO 14001, OHSAS 18001 and UN Global Compact standards.

Based on these policies, principles and guidelines, five priority commitments were defined as a supply chain management strategy: (1) commitment to the commonweal and respect for the principles of legality; (2) commitment to business ethics; (3) commitment to isonomy; (4) commitment to transparency; and (5) commitment to social and environmental responsibility. These commitments guide the actions of Cemig's daily supplies and are adherent to the UN Global Compact Principles, of which Cemig has been a signatory since 2009.

<sup>&</sup>lt;sup>74</sup> For more information please access http://www.cemig.com.br/pt-br/fornecedores/Paginas/cemig-pol%C3%ADticas-de-suprimentos.aspx.

### 308-1 414-1

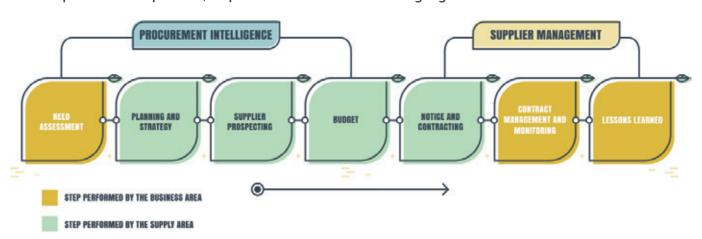
Cemig seeks to align suppliers and contractors with its vision of corporate social responsibility, its commitments and corporate values. Due to its legal nature, Cemig is subordinate to the Bidding Law, which establishes rules for bids and agreements of Direct Public Management. Therefore, Cemig cannot select suppliers exclusively based on social and environmental criteria. However, the criteria applied by Cemig in the registration and homologation of new suppliers include environmental and social aspects.

The company has procedures that verify the compliance of these aspects in the supply chain, in contracted and non-contracted suppliers, which enable a categorization of critical suppliers. In order to verify the alignment of suppliers' practices with the Company's requirements, on-site verifications are performed in all critical suppliers and sample checks in the total universe of suppliers.

Regarding social aspects, Cemig verifies legal compliance with labor and social security rules, has procedures for investigating complaints, protests and denunciations, and applies contractual clauses aimed to prevent situations of human rights risks. However, it does not yet have a structured and ongoing process of due diligence.

### 11.1 SUPPLY CHAIN MANAGEMENT

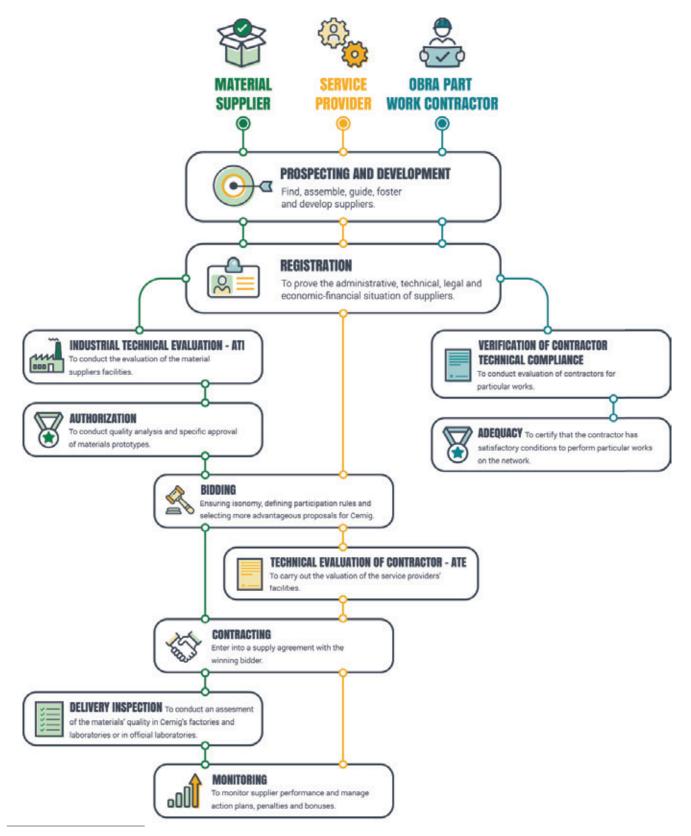
Cemig Supply process is divided into two macro-processes: (I) Planning and Strategy; and (II) Procurement, Quality and Logistics. This process, altogether with responsible areas for the steps that comprise it, is presented in the following figure:



The Procurement process initiates in Cemig with an identification of contracting needs, which can be carried out both by the business area or by the Service Planning and Material areas. Based on this identification, the supply area begins its prospecting, development and supplier registration (when necessary), budgeting, market analysis and supplier performance monitoring.

After these steps, the contracting process occurs, through the bidding modalities established by the current legislation and regulations<sup>75</sup>, meeting the requirements of Cemig's business and governance.

At the beginning of the activities foreseen in contract and throughout its term, management and monitoring occur as specified in the bidding notice. This cycle of relationship of Cemig with its suppliers is represented in the following figure:



<sup>&</sup>lt;sup>75</sup> In particular, Laws No. 8.666/1993and 13.303/2016.

The design of the Supply area, which includes processes of service planning, market analysis, prospecting, development and monitoring of supplier performance and information and of systems core, brings important gains to the supply chain, such as:

- Standardization of processes, centralizing activities that were carried out by management areas;
- Gain in scale;
- · Optimization of activities;
- · Increase in quantity and quality of facts and data supporting decision making;
- Prioritization as required by the Company;
- Isonomy with equal treatment of suppliers.

# 11.2 IDENTIFICATION AND MANAGEMENT OF ENVIRONMENTAL AND SOCIAL IMPACTS

#### 102-11

Cemig applies socio-environmental risk identification procedures to all hiring processes. These procedures encompass economic, environmental and social responsibility risks to which the company is exposed due to the performance of its suppliers. These risks can damage Cemig's brand, image and reputation before relevant stakeholders to the company. Risks also may cause market and competitiveness losses, culminating in Cemig's criminal and judicial liability for environmental and social impacts and damages.

Because of that, Cemig has a careful management of its suppliers, so that cadastral and technical evaluations of suppliers correspond to corporate policies previously defined and reviewed annually. In order to prevent and mitigate risks, the Company adopts management measures that mainly include transparency in all bidding documents (http://compras.cemig.com.br/).

Moreover, Cemig encourages improved management of their service providers through contractual clause that provides repayment of any fines, up to 50%. Repayments depend on evidence requirements, such as ISO 9001, ISO 14001 and OHSAS 18001, training proof of professional technical staff and of service managers who are enrolled, attending or have completed course of business management.

Cemig's critical suppliers are those whose goods or services have a significant impact on the competitive advantage, market success or survival of the company. Reasons may include that these suppliers provide goods or services at high volumes, that provide critical components or that are not replaceable. The following table shows mapping data of critical suppliers of the last 3 years:

Critical supplier mapping					
Year	2016	2017	2018		
Critical Suppliers with current contract	84	126	108		

The Company categorizes high-risk suppliers, considering potential negative impacts (environmental and social), arising from material non-conformities. The identification of high-risk materials, services and suppliers is reviewed annually, generating actions to monitor and control these suppliers, from registration, technical evaluation to inspection of the agreements.

The following are considered potential negative impacts of suppliers: (I) factors related to environmental license for operation, products and services; (II) waste management; (III) water concessions; (IV) human rights related to forced and child labor, freedom of association, working conditions, occupational safety and health; (V) business ethics, corruption and antitrust practices.

In 2018, 102 suppliers were defined as high risk of sustainability therefore receiving special attention from the contracting areas.

# Management of Environmental and Social Impacts in Suppliers Registration

Prospecting and registration aim to increase and improve Cemig's supplier base, growing competitiveness of its bidding processes. This step involves a selection of suppliers for the registration and not for hiring The Company conducts the prospection of new suppliers, mainly through workshops, seminars, national and international visits, research and exchange of information with other concessionaires.

Cemig pays particular attention to quality, so the performance and reputation of prospective suppliers are evaluated, dealing only with suppliers that are in accordance with social and environmental aspects. Suppliers who do not meet these requirements and that have negative media and reputation are disregarded from prospecting and development activities.

Media analysis is performed through search engines on websites that are specialized in evaluation of companies (such as Reclame Aqui, for example). CAFIMP, CEIS and CNEP websites are also verified for certification that there are no impediments by the public management to hire them. Cemig has a benchmark group among concessionaires that promotes the exchange of information about suppliers.

# Management of Environmental and Social Impacts in the Supplier Register

Supplier registry has the following objectives to: (I) ensure that bidders of Cemig's procurement processes meet the participation requirements set forth in the notices; (II) serve suppliers and internal customers with quality and punctuality; and (iii) guarantee an updated and solid base of suppliers registered at Cemig.

When making a new entry or updating an annual registration update, all Cemig suppliers should submit a statement<sup>76</sup> certifying that:

- They do not employ under the age of 18 that work during night shifts, dangerous or unhealthy work;
- They do not employ children under the age of 16, in any job, except from 14 years of age as an apprentice;
- They do not have labor relationships characterized by forced labor or labor analogous to slavery;
- They do not acquire or use ores (tantalum, tungsten, tin and gold) from armed conflict areas of the Democratic Republic of Congo and its neighbors, characterized by extreme levels of sexual and gender-based violence;
- That ensure the valuation of diversity, not adopting discriminatory practices by race, gender, age, nationality, sexual orientation, physical disability and religion;
- They meet a learning quota, established in the Article 429 of the Consolidation of Labor Laws of Brazil, aiming technical and professional training of young people, in their first experience as a worker;
- They know and comply with Cemig's "Declaration of Ethical Principles and Code of Professional Conduct" and "Cemig's Anti-Fraud Policy";
- They strictly and fully comply with the requirements on environmental legislation and personnel safety, which meet all the requirements of the official environmental control and personnel safety agencies, as well as that all Operating Licenses, for transportation and of their Sub-Suppliers are valid, and their respective environmental conditions are being fulfilled.

<sup>&</sup>lt;sup>76</sup> Avaliable at http://www.cemig.com.br/pt-br/fornecedores/Paginas/cadastro-fornecedores.aspx.

In the registration process, the standard procedure consists of a verification of all statements received, without sampling approach. Only suppliers that meet these requirements will be registered. Complementary to the registration process, for most of the items, Industrial Technical Assessment (ATI) and Verification of Technical Conformity of the Contractor (VCTE) are carried out, in which work, health and safety practices are verified (especially hazardous and unhealthy) and environmental aspects.

# Management of Environmental and Social Impacts in the Technical Evaluation of Suppliers

The Supplier Performance Monitoring process accompanies the execution of the agreements, in order to establish objective, standardized and adherent criteria to Cemig's market practices regarding the monitoring of its agreements.

Thus, the objective is to provide, through proposed tools, transparent, impartial and efficient supplier management that involves, motivates and results in improvements for stakeholders. Due to a Supplier Performance Monitoring process, Cemig is able to measure the compliance with targets and requirements by the supplier, in order to produce indicators for Health and Safety, Environment and Documentation Compliance.

The monitoring of suppliers is carried out through a system in which the supplier, the supply area and the technical area responsible for contract management interact. In this system, some suppliers are considered strategic and started a new agreement as of the second quarter of 2018 are monitored, the date on which the proposal for measuring the Supplier Performance Index (IDF) indicator was started.

The goal is to monitor the performance of the supplier individually and comparatively with other suppliers, with defined and standardized rules for indicators, penalties and bonuses.

Historical Data of the Supplier Performance Index (%)					
Year	2016	2017	2018		
IDF Materials	82	81	82		

The IDF is deployed in three aspects: Technical, Financial and Compliance, as shown in the figure below.



When the performance of the supplier is lower than what is expected and what was defined in the agreement, or when legal or contractual requirement is not conformed to the agreement, a Punitive Administrative Procedure is carried out to investigate the occurrence and, when necessary, execute the penalty defined by the competent bodies.

In 2018, Cemig filed 45 administrative proceedings, of which 26 were released due to non-compliance with deadlines, non-delivery of the subject matter, irregular service). One contract was cancelled because of unsatisfactory performance, and four because of suspected document forgery and fraud, two of them due to structure sharing. No supplier has been prosecuted for serious accidents or human rights abuses.

On the other hand, in order to recognize performance beyond expectations, several material suppliers and service providers of Cemig are honored annually at Cemig Suppliers Award event. The award recognizes suppliers who excel in performance, based on criteria such as term, quality, safety, guarantee and price, and suppliers whose practices in Social Responsibility, Environmental Responsibility and Work Safety were considered relevant for the benefit of the society.

In 2018, a universe of 1,839 suppliers purchased orders or agreements with Cemig, among which 83 suppliers were recognized for the CEMIG Award.

The winners received plaques in honor of the positive evaluation of the services rendered. Among this total, 43 suppliers went beyond the expected, achieving the degree of excellence "Assured Material Supply." These suppliers received, in addition to trophies, a certificate that allows them to deliver and invoice material without prior inspection by Cemig, for a period of one year. In addition to these awards, three suppliers whose practices in social responsibility, environmental responsibility and work safety were considered relevant for the benefit of the society were also recognized. The following table shows the awards data for the last 3 years:

Cemig Suppliers Award - 2018 Edition			
Evaluated category	2016	2017	2018
Total of Participating Suppliers	356	763	742
Recognized Suppliers for performance in quality, safety, warranty and price	70	71	83
Suppliers that have reached the level of excellence "Assured Material Supply"	39	44	43
Suppliers recognized for practices in social and environmental responsibility and work safety	3	3	3

There are measurable benefits arising from monitoring process, both for the supply chain and stakeholders in general:

 By monitoring the compliance aspect, through a specific indicator that measures integrity, Cemig seeks to combat corruption in all forms, including extortion. The Company encourages its suppliers to have a code of ethics, anti-corruption policy and also to create Complaint and Training services for its employees.

- Since 2015, Cemig included in all agreements, a text about obligations of suppliers, with the following words: "to know and comply with the rules established in Law No. 12.846/2013, of August 1, 2008," Anti-Corruption Law," refraining from committing acts that tend to injure public management, denouncing the practice of irregularities of which it has knowledge, through denunciation channels available to the contractor."
- Predictability based on historical performance and data for decision-making before an
  effective problem that may impact the continuity of the agreements.

In addition to performance monitoring, Cemig applies a due diligence process to suppliers' contractual compliance assessment, including related environmental and social aspects. This enables Cemig to implement and evaluate appropriate policies and procedures related to these aspects, identify third party errors and complaints regarding current processes and offer risk prevention to the business through the adoption of best management practices.

# 11.3 ENVIRONMENTAL AND SOCIAL PERFORMANCE OF SUPPLIERS

As an additional contribution to Sustainable Development, Cemig adopts Complementary Federal Laws 123/2006 and 147/2014, regarding national statute on Microenterprises and Small Enterprises, granting differentiated treatment to these in relation to large companies. This creates more jobs and develops local economy.

Cemig also invests in the benchmarking of other large companies in the electric sector and also in the market in general, searching best practices for its processes. Through the COGE Foundation<sup>77</sup> and a benchmarking group among Brazilian electricity concessionaires, the social and environmental aspects of suppliers, especially contractual requirements, are continually debated.

Cemig is aware of the potential negative social impacts in the supply chain, given the segment in which it operates. For this reason, the management of these risks is permanent, updated and shared in several departments of the Company.

414-2

Over the past twelve months, 200 suppliers were assessed for social impacts. As already stated, this evaluation is not carried out in a constant and coordinated way, but is based on reports of irregularities received by third parties (members of civil society) or by internal staff (employees scaled for possible technical visits and operational procedures with suppliers).

In 2018, no significant negative or actual social impacts were identified in the supply chain. Besides that, there are no records of suppliers identified as generators of significant negative social impacts. So that year, it was not necessary to come to an agree on improvements or terminate agreements with suppliers based on social performance appraisals.

<sup>77</sup> Avaliable at http://www.funcoge.org.br/

The work of organizing procedures and integrated management of suppliers contributes to the continuous improvement of the connection of processes and departments related to suppliers. The monitoring of supplier performance is also essential for this objective, since it brings monthly and targeted evaluations on social aspects involved by suppliers with labor dedicated to the Company.

407-1 408-1 409-1

Cemig also has no operations and suppliers with a significant risk of child labor, forced or slave labor, nor offer the risks of freedom of association and collective bargaining.

Aspects related to forced and child labor are continuously monitored by specific contractual rules, by process of performance monitoring and by inspections conducted inspections at the facilities of suppliers, in order to contribute to an effective abolition of these cases. With regard to risks of free choice and collective bargaining, in order to guarantee this right, Cemig counts, in its budget for new agreements, union expenses and negotiations applicable to suppliers.

308-2

Similar to social issues, Cemig also has a perception of potential negative environmental impacts in the supply chain. During the preparation of technical specifications, the environmental factor is broadly addressed, so that suppliers are duly instructed to contract execution in accordance with environmental requirements.

For example, regarding the work on dams at hydroelectric power plants, all issues involving risks to fauna and flora are previously established in the technical specifications, in the performance indicators of the supplier and in the contractual clauses. Also, in relation to this subject, Cemig's program of preservation of the ichthyofauna, it is conducted it with civil society, which it contributes and counts with supplier's participation. This program will be detailed in the Biodiversity chapter.

308-2

In 2018, 200 suppliers were evaluated for environmental impacts. There were no significant negative or significant environmental impacts identified in the supply chain. As well as there is no record of suppliers identified as generators of significant negative environmental impacts. Thus, there was no need to agree on improvements or terminate agreements with suppliers based on environmental performance assessments.

This demonstrates how Cemig is involved in addressing environmental issues, strengthening its commitment to issues related to the UN Global Compact. Once legal constraints have been met, Cemig seeks to establish partnerships and supports specific programs that promote the development of local products and suppliers, sponsored by corporate and governmental representative entities. At the same time, they also keep partnerships in Research and Development projects with suppliers, seeking innovative solutions, product improvements and technological modernization.

### 11.4 COMMUNICATION CHANNELS WITH THE SUPPLIER

Cemig makes available to its suppliers several communication channels. One of the main ones is the Electronic Procurement Portal (PEC). The PEC is an open and direct channel, where all procedures for bidding processes, published and made the contracting are presented. This allows the supplier to interact and consult processes and results, register proposals, insert qualification documents and participate in electronic trading sessions.

The website is accessible and allows stakeholders to follow the process, which contributes to greater transparency of the process.

In order to publicize its actions, Cemig uses the Official Gazette, where public notices and agreements made by the company are published. In Cemig Portal (www.cemig.com.br), there is a specific area for communication with suppliers, the Suppliers Portal, where they it is available Supply Policies, information and instructions for registration and prospection of new suppliers, technical evaluation, development of prototypes and homologation of material, supplier monitoring, recognition, etc. In the Portal, you can find the contact emails for the main areas of supplies.

In addition, a new channel of communication is being developed, a Chatbot for service clearing any doubts of supplier registration, which enables a 24-hour service for companies. Cemig's supply team also serves suppliers via telephone, email and meetings, to answer questions, guide and maintain that relationship.

# 11.5 HIGHLIGHTS AND ADVANCES IN MANAGEMENT

Some of the advances implemented in supplier management in 2018 are displayed below:

Supplier registration. Until 2017, supplier registration was done with physical documentation delivery. Due to an implementation of a computerized system in February 2018, most of the documentation is now received and analyzed electronically. As a result, a reduction cost was passed on for suppliers through elimination of documents via Post Office, the reduction of time with a real time receipt of the documentation attached to the system and the reduction of the environmental impact for the company with the elimination of document printing.

Other improvements implemented in the supplier registry were the creation of a single tele-service channel, the revision of the required registration documentation and the direct integration with a new supplier prospecting process.

Prospecting suppliers. The supply area started to play a strategic and proactive role in the companies. The search for new technologies, better trading conditions and high performance has become essential. In this context, Cemig respects the principle of isonomy and seeks partner-suppliers with high performance, qualification and compatible costs.

Also, in this context, the development of suppliers, the incentive to the local market - promotion of suppliers of Minas Gerais and the approximation of SEBRAE and FIEMG - provides several gains to Cemig, such as greater competitiveness, professionalism, solid management of processes and improvement in relations with suppliers.

**Supplier monitoring.** Cemig developed an innovative methodology that consists on an analysis of supplier performance based on three aspects: technical, financial and compliance.

**Punitive administrative process.** Instead of being a terminal procedure for suppliers, when, in most cases, only punishment and suspension of defaulting suppliers were carried out, performance monitoring has a gradual and pedagogical penalty. This provides to the supplier the chance to recover itself. If this does not happen, the supplier goes through progressive sequence of penalties.

**Quality of Materials.** Cemig's quality area began to focus on the quality of material suppliers, with inspections and ATIs. The company also recommends to approach the area of quality of materials with the engineering area, in the discussion of specifications and manufacturing processes of materials and equipment.

Similar to Quality of Materials area, a process of evaluation of service providers was developed and consolidated. Currently, Cemig has a single area responsible for the ATEs, when service providers are mobilized, as well as in the VCTEs, for the Private Works contractors (Part Works)<sup>78</sup>. The expansion of the ATE concept to other categories, such as meter readings and sub-network and substation services for sub-transmission and transmission, is another advance already implemented and will extend to all categories of service evaluated as applicable.

**Market analysis.** The process of creating market analysis, implemented along with other strategic processes, allows the development of robust mechanisms for predictive analysis of Cemig's purchases and provide consistent information to decision makers.

**Service planning.** The Planning provided a maturation of Cemig contracting. It also influenced the vision of the importance that this area has for the supply chain. Among gains emerged from Service Planning, we can mention:

- Reduction of costs (direct, less expenses incurred in bidding and scale gains, and indirect, with the operational efficiency of the teams involved), through process and contract management. Also, reduction of costs due to planning for unification of similar subjects, including scheduling the beginning of the provision of services;
- Permanent review of contracting methodologies, due to a rapid improvement, updating and automation that the technology provides, directly or indirectly linked to the subjects to be contracted;

<sup>&</sup>lt;sup>78</sup> Any interested party may opt for the execution of the network extension works, reinforcement or modification of the existing network, which will integrate the Electric Power System of Cemig. In order to do so, Cemig has a process of registration of contractors that are qualified to perform Particular Works - Part Works.

Market analysis through benchmarking and improvement of methodologies and instruments for cost composition, through the updating of normative instructions applicable to best practices in public procurement, such as IN-05/2017, which replaced IN-02/2008;

Among advances in implementation or to implement, the following stand out:

**R&D** intelligent supply chain management. Industry 4.0 will enable the creation of a digital environment in which different stakeholders will be integrated. Industry 4.0 enables connection between stakeholders, promoting an intense exchange of data and information. In this way, communication and the relationship between suppliers and the organization will gain new formats and new possibilities, much more agile and aimed to an increase of efficiency. Thanks to industry 4.0, that seeks to ensure focus on customer satisfaction, it will be necessary for companies to effectively practice the win-win relationship with their suppliers and business partners.

Cemig was selected as a pioneer in the R&D program funded by ANEEL with a project focused on intelligent supplier management. The project is run by Mackenzie University in conjunction with the European Institute of Purchasing Management (EIPM). The first stage of this project is directed to the preparation of a matrix of Kraljic, which aims to improve risk management and classification of suppliers. The deadline for completion of this project is two years.

**Chatbot.** Implementation of a Virtual Assistant for first level service to Cemig suppliers, in order to clarify their main doubts.

**Cemig Procurement Portal.** A complete version of Cemig Procurement Portal will be available in English, in order to encourage the participation of foreign suppliers and increase the competitiveness of the procurement processes.

Internal regulation of bids and agreements. Cemig's Internal Regulation of Bids and Agreements was created and made available on the Supplier Management Portal. This regulation is a consequence of compliance with Law No. 13.303/2016, known as the "State Law", which favored innovation in important aspects of the legal regime of bids and agreements, delegating to the Internal Regulation, the important function of systematizing and accommodating the new legal provisions to the specificities of each state company, which complements the regime of Law No. 8.666/1993.

Aiming to continuously improve the supply chain management process, Cemig works with internal targets projected in the medium term (2018-2021). The following are the goals:

Goals for 2021					
Indicator Category	Indicator	2018 Status	2021 Goal		
	TFTC (third-party frequency rate)	1.71	2.50		
Safety	TG (severity rate)	44	230		
	Other security indicators		94%		
Quality	Quality indicators	98.29	95%		
Time	Time indicators	90.51	89%		
Environment	Waste management quality index	95.11	98%		

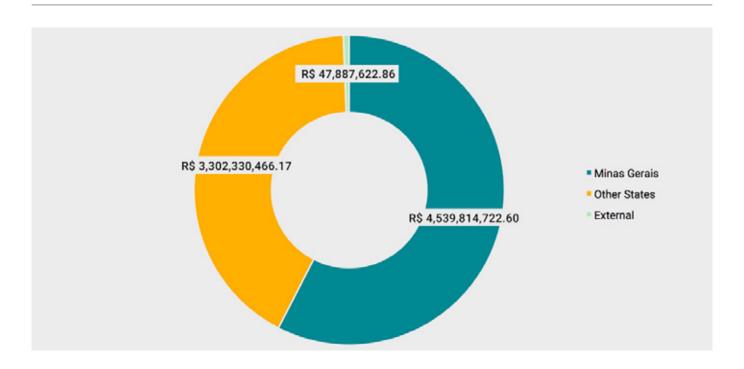
# 11.6 MAIN MONITORING ITEMS AND INDICATORS

102-9 204-1 103-1:301

Main monitoring items in Cemig Supplies area are shown in the table below, highlighting the chart and figure numbers below.



# Distribution by supplier's location (contracted value)



Description		2016 Result	2017 Result	2018 Result
Number of Issued Agreements		1,215	1,597	1,391
Amount Contracted in the Period		BRL 1,953,735,462.94	BRL 2,533,556,603.00	BRL 2,039,597,758.11
	мб	2,405	2,640	2,672
Number of suppliers with current agreements	Other States	1,193	1,240	1,211
	Abroad	10	17	26
Amount paid on existing agreements		N/A	N/A	BRL 5,609,752,060.31
	MG	N/A	N/A	757
Number of suppliers with active registration	Other States	N/A	N/A	674
	Abroad	N/A	N/A	7
Number of ATI performed		88	69	58
Number of external inspections performed		1,632	1,350	1,564
Number of inspections performed at Cemig laborator	ries	3,455	2,647	3,293
Quantity of Material Approvals carried out		62	96	72
Number of ATEs carried out		58	64	61
Number of VCTEs carried out		17	35	81
Total Number of Administrative Processes		33	27	45

Total Number of Administrative Processes	33	27	45
Number of suppliers suspended for social, health and safety issues	0	0	0
Number of suppliers suspended for environmental reasons	0	0	0
Total Number of Administrative Proceedings related to compliance and/or non-compliance with human rights	0	0	0
Total Number of Administrative Proceedings and/or Contract Cancellation due to corruption.	2*	0	0
Number of suppliers evaluated in relation to environmental and social impacts	163	168	200
Suppliers cases concerning child labor (contractors)			0
Suppliers cases concerning forced labor (contractors)			0
Number of Field Service Quality inspections performed			25,730
Number of environmental problems caused or related to suppliers			0
Number of security inspection events (SIMASP Report)	1,539	8,955	9,246
TFTC (third party frequency rate) Cemig D: with and without leave of absence	5.87	3.87	4.04
TFTC (third party frequency rate) Cemig GT: with and without leave of absence	10.63	7.37	7.41
TFA (rate of accidents with leave of absence) contracted	1.84	1.20	1.71
TG (severity rate) contracted	269	452	44
Service Quality (IQSC)	90.46%	83.61%	90.77%



Washington Barbosa (Sustainability), Cristiano Magalhães (Energy Efficiency)

# 12. COMMUNITY

# 12.1 RELATIONSHIP WITH THE COMMUNITY

Cemig's strategic positioning regarding local communities in its operating areas contemplates social, environmental and economic aspects to be considered in all Company's enterprises. The company Community Communication Policy determines that communication and engagement with stakeholders is the main route of corporate social responsibility.

This policy reiterates Cemig's commitment to its management transparency, to the co-responsibility census and to the encouragement of local economic and social development, making public the foundations and assumptions that guide the definition of communication strategies and practices. Furthermore, the policy objective is to create and improve adequate communication tools between the diverse communities' segments and the main activity areas of the Company, especially those of energy generation, transmission, distribution and development.

Cemig also has the Company Communication Plan, which, together with the Community Communication Policy, integrates the set of communication strategies adopted in the relationship with communities, and guides the Socio-Environmental Diagnostics, prepared for each project or program.

Other documents that support and guide practices in the relationship with the community are the instruction of Socio-environmental Negotiations in Cemig IS - 48 and the Code of Ethics.

In September 2017, Cemig created the Public Agents and Social Movements Relationship Management. This Management has the objective of specifically meeting the people of social movements, such as the Movement of People Affected by Dams (MAB), Landless People's Movement (MST), people resettled and communities characterized as low income. The Management activities are based on the community relationship guidelines and address several axes of action of Cemig regarding the human occupations in the Company operating areas.

Some of the tools that support this engagement includes workshops, seminars, meeting circuits, in-person visits, in-person meetings, participation in deliberative forums, visits to Company units, and direct contact with Cemig's local representatives.

### 103-3:413

The opinion polls' results allowed verifying that these tools are efficient when they propose to disseminate knowledge and offer opportunities for dialogue on operations, ventures and changes in the company that may have an impact on the communities, as well as to receive the main demands of the surrounding communities of Cemig.

# 12.2 TERRITORIAL MANAGEMENT

### 413-1 413-2

For the construction of substations, power plants and repeater stations, Cemig sometimes needs to acquire properties from community dwellers or it needs to institute administrative easement in cases of deployment of distribution and transmission lines and distribution networks.

The ANEEL Normative Resolution No. 560/2013 determines the general procedures for requesting a Public Utility Declaration (DUP) by energy distribution concessionaires, which are necessary for the implementation of electricity generation, transmission and distribution facilities in areas of social use.

Feasibility studies are prepared by internal teams, which meet for this specific purpose, whenever there is a need for a real estate acquisition or expropriation. The previously defined mapping options are compared with legal reserve, preservation areas, consolidated land subdivisions and, at the same time, with the mapping of those affected. This could indicate, for example, whether there are improvements to be suppressed in the venture implementation, or it could provide the confirmation of the number of people to be affected by the enterprises. It also provides insight into the enterprise acceptance by affected owners, indemnity amounts and other relevant factors. Only after analyzing these factors, which compose the feasibility studies, the best route is chosen.

The Company respects the individual integrity of each citizen, the history and culture of the communities affected by the ventures, as well as values amicable negotiations, seeking to indemnify at the fair market price, based on appraisal reports prepared in accordance with the Brazilian Association of Technical Standards NBR-14.653.

# **Human Occupation in high-voltage Overhead Power Lines Areas**

#### 413-2

The human occupation of the safety areas of high-voltage transmission lines is a problem that occurs with several Brazilian concessionaires, which, in addition to other factors, reflects the population socio-economic conditions. Occupations are mostly of low-income families with no housing options, which see in the safety areas a place available to settle, even in precarious conditions of life and safety.

### 103-2:413

Given this framework, and in line with its strategic planning, Cemig has identified the need to act in security solutions for the population. The goal is to reverse this critical situation of people living in areas of high-voltage transmission and distribution lines

This is accomplished through the implementation of short-, medium- and long-term measures capable of curbing the advance of occupations with continuous surveillance and reducing the number of irregular occupations that already exists. This second action front is developed in partnership with the municipalities, through the signing of agreements that allow the removal of irregular housing and the resettlement of families in decent housing.

The following Structuring Measures were maintained and implemented in 2018:

- Services for monitoring and mapping of the easement bands up to June 30th, 2019;
- Publication of the Policy for Equating and Preventing Human Occupation under Lines.

As a way of minimizing risks to the population, Cemig is carrying out the deviations of lines of 138 thousand Volts in seven agglomerates and villages in the municipalities of Belo Horizonte and Juiz de Fora. Work is under way on the new route of lines of 138 thousand Volts in the Santa Rita neighborhood, in the city of Juiz de Fora, with completion scheduled for February 2019.

Also, in 2018, there were proposed 104 repossession actions, with 61 injunctions issued for the removal of irregular buildings. Also, in view of the urgent need to address the complex issues surrounding the irregular occupations of lines, Cemig was invited to and was represented by Superintendencies of Coordination of Relationship with Public Officers in the event "Socio-Patrimonial Management in Focus - Challenges and Solutions," held in October 2018 in Rio de Janeiro and sponsored by Furnas.

On this occasion, Cemig presented its structuring measures in relation to the management of this topic issue, and was recognized by the other concessionaires in the electric sector for being at the forefront of this process.

# 12.3 CORPORATE CITIZENSHIP AND PHILANTHROPY

 ODS1
 ODS3
 ODS4
 ODS8
 ODS10
 ODS11

In line with its Vision, Mission and Values, Cemig seeks to create shared value by aligning its philanthropic and corporate citizenship strategies with the business objectives, in order to promote the economic and social development of the communities where it operates.

In the context of being part of an emerging market, Cemig's Corporate Citizenship and Philanthropy strategy has as its priorities:

- the social and educational development;
- the strengthening of the cultural sector; and
- the increase of the sports sector, strengthening the brand and the Company's image in the market and in society.

In this sense, Cemig works towards the sustainable development of communities through an articulated strategy, working in partnership with the Government (Health Secretariat, State Secretariat of Education, State Secretariat of Culture, Ministry of Sports and Ministry of Health), municipalities (Municipal Councils for the Rights of Children and Adolescents) and philanthropic institutions. In addition, Cemig also engages its employees and clients with the theme through projects and actions that are described throughout this chapter.

With regard to sponsorships, Cemig has a Sponsorship Policy that aims to highlight the commitment of the company to the reality and demands of the communities where it operates, contributing to its development and strengthening cultural, sport, educational and social sectors in alignment with the current public policies in the communities. This policy reiterates Cemig's commitment to the transparency of its management, making public the assumptions, fundamentals and origin of the resources that guide it in the definition of sponsorships, supports, partnerships and the use of incentive laws.

Cemig also has an Internal Service Instruction (IS58 - Preparation and Management of Corporate Social Responsibility Projects) that establishes responsibilities for all involved agents and the definition of impact indicators, with the objective of ensuring good project management of social projects.

203-1 103-2:203

In this context, Cemig has different programs to promote social and educational development. Some of these programs constitute indirect economic impacts of the Company, characterized by investments in infrastructure and service offerings that positively impact communities and local economies. The Donation Granting Program is highlighted, as described below.

### **Donation Granting Program:**

Through the Donation Granting Program, Cemig grants deductions on electric energy bills, up to 25%, from philanthropic institutions that promote social and health care, after applying the respective current rate and limited to a ceiling. The ceiling calculation is determined by the average consumption of electric energy (kWh) and/or demand (kW), when applicable, calculated in the last twelve months prior to the benefit concession date of the, and without taxes and charges. With the Program, it is generated an economy for the institutions, which can be used for social means. On the other hand, the Cemig reduces its losses due to non-payments, since only the institutions in compliance with the Company can receive the benefit.

Cemig's investments in this program are of commercial nature, as the Company provides the energy at lower costs. In 2018, 972 entities were benefited, totaling BRL 7.2 million in deductions in the electric energy bills of the entities that receive this benefit.

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 the direct costs of social programs, including arts and educational events. In this context, some Cemig programs should be highlighted:

### **Sponsorship Program**

The Sponsorship Program consists of collection of donations from third parties (sponsors) in favor of philanthropic institutions, through the electric energy bill, and these donations are fully transferred through a bank deposit. Sponsors who enroll in the Program can choose the registered institutions they wish to benefit and the amount to be collected in the electric energy bill.

Through this program, Cemig establishes a partnership with the society, through clients who become sponsors of the institutions to benefit the community and, consequently, strengthens its commitment to the local communities' development. Institutions, on the other hand, receive donations in a secure manner, using Cemig's infrastructure and capillarity, without the cost of issuing, paying and receiving invoices and/or slips.

Cemig's investment in this program is made available through the provision of its infrastructure and capillarity to philanthropic institutions without the cost of issuing, paying and receiving invoices and/or slips. In 2018, 416 institutions received approximately BRL 64 million in donations

### **Corporate Volunteer Program**

In August 2018, Cemig launched the Cemig - VOCÊ Corporate Volunteer Program, which encompasses several actions to encourage and support the involvement of employees in voluntary activities. VOCÊ Program aims to stimulate and disseminate solidarity and volunteer work among employees in order to promote human development and contribute to the well-being of communities where Cemig operates. The program is structured to strengthen the actions of volunteers in progress, whose path gradually migrates from welfare to participatory citizenship and social transformation. Cemig has a Business Volunteer Policy, which acts as a guiding instrument for the practice of voluntary service, and a Service Instruction, which establishes the implementation rules and the guidelines to be followed by those participating in the VOCÊ Program.

Within VOCÊ Program, different actions are developed, such as: Volunteer Day, Actions in Partnership with the Junior Achievement and the Al6% Program – Educating Citizens. In 2018, the Company provided 3,341 work hours of its employees to the VOCÊ Program, for the planning and structuring of it, as well as for technical visits and participation in courses and congresses. Within the actions of VOCÊ executed outside working hours, Cemig volunteers donated 2,518 hours of their time.

The programs and results in 2018 are detailed below.

### **V-DAY**

The Volunteer Day is celebrated on the last Sunday of August. Annually, on that date, there is the mobilization and the incentive to carry out solidarity actions in a community previously selected by the coordinating team. Cemig, under the general coordination of Cemig Saúde and jointly with Cemig - AIC Inter-managerial Association, and Gremig have been supporting this action since 2001, in order to engage its employees with volunteering. In 2018, the V-Day was celebrated in two cities of the Cemig's concession area.

Volunteer Day in Janaúba: On the V-Day of Janaúba, the families of the victims of the accident at the Gente Inocente Daycare Center were benefited, they were about 500 people. On that day, 80 volunteers and 15 partners (companies, institutions and health professionals) dedicated their time, work and donations to help the institution

chosen by the coordinating team of the event. In total, 500 kg of clothing, shoes, accessories, and toys were collected and donated, in addition to 1,500 kg of food and 150 kg of personal hygiene products, medical care, cleaning supplies and children's diapers. In addition, the volunteers provided 20 orientations regarding the Bolsa Família Program and the Social Energy Tariff, seven psychological orientations, 250 dental orientations, 50 Labor Market orientations and Curriculum Development, 130 Dental and Dermatological Care, 150 Medical Care, 40 Quick Tests of HIV and hepatitis B and C. At last, 12 people participated in the Course for Pregnant Mother's Care.

Volunteer Day in BH: On the V-day held in Belo Horizonte, the Pavonianas Social Works organization benefited seven poor communities in Santa Lucia Dam and Morro do Papagaio region, located at the Vila Paris district of Belo Horizonte. About 1,000 residents of the community participated in V-Day, where there were 35 medical and psychological consultations and 282 ophthal-mological and dental examinations and consultations. In addition to the medical appointments, a campaign collected 150 kg of food and 150 kg of personal hygiene and cleaning products for donation. There was also a bazaar with collected utensils, about 3,000 kg of clothing, footwear and accessories and toys that were sold and generated a profit of BRL 3,768.35, passed on to the beneficiaries.

### PROGRAMS IN PARTNERSHIP WITH JUNIOR ACHIEVEMENT

As part of VOCÊ Program, Cemig has collaborated with Junior Achievement, an autonomous, non-profit institution that designs education solutions for youth development and applies them through voluntary business work, strengthening the preparation of these young people for the job market and for the entrepreneurship. The Company has also formalized a partnership with Instituto BH Futuro, an institution that works with cultural, sports, education and innovation and entrepreneurship projects for children and adolescents in Aglomerado da Serra, a low-income region of Belo Horizonte.

The partnership between VOCÊ and Junior Achievement of Minas Gerais aimed at influencing the communities around Cemig, having the Company's volunteer approaching social relevant issues for the community. The actions enabled the development of both the beneficiaries and the volunteer applicants who could practice skills such as oratory, teamwork, leadership and decision-making.

The Project consisted of the following Programs: Entrepreneurial Women (Mulheres Empreendedoras), Let's Talk about Ethics (Vamos Falar de Ética), The Advantages of Staying in School and Mini-Enterprise (As Vantagens de Permanecer na Escola e Miniempresa). Information on these programs is presented in the table below.

Programs in Part	nership with Junior Achievement						
Program	Objective	Institution	City	Target Audience	Number of Classes	Benefited	Volunteer
	The "Entrepreneurial Women" program is an initiative to promote entrepreneurship, whose purpose is to develop the entrepreneurial spirit of women in situations of social		Montes Claros	Women at social risk	1	16	3
Entrepreneurial Women	vulnerability and guide them in the process of decision- making and risk analysis, stimulating the creation of their own company and their self-confidence. One of the tools used is micro-credit, as an investment financial support. As a result, women are given the necessary support to start earning money and can then contribute to family income and invest in the future of their families, thereby improving family and social well-being.	Instituto BH Futuro	Belo Horizonte	Women at social risk, aged between 19 and 60 years	1	29	3
	Mini-Enterprise provided public school students with the knowledge and practical experience in economics and business, through the organization and operation of a mini-enterprise. Students learn concepts regarding free initiative, market, marketing and production.  In this program, young people create a company, plan and act in all of its areas, produce and sell a product, determine the results and remunerate with symbolic values all those		Belo		1	14	5
Mini- Enterprise	involved. At the end of the project, students choose a social organization and donate the amount collected from minienterprise taxes.  The program was closed with a fair and a graduation ceremony of the participants.  The fair consisted of meeting the participants in an event aimed at selling the products developed by the students during the Mini-Enterprise project. This activity aimed at the	Maurício Murgel - State High School	Horizonte	Young people in high school	1	23	5
	development of young people in skills such as negotiation, oratory, public service and argumentation. In addition, the fair also had the role of presenting the results of the volunteer program and valuing the voluntary service of Cemig employees.  All those involved in the delivery of the participation certificates, in turn, attended the graduation ceremony.	Ruy Pimenta - State High School	Contagem		1	11	6
Let's talk about ethics	Program that provides young students with reflections on the benefits of ethical conduct in their personal and professional lives, contributing to a better understanding of their role as citizens. There were board games, action and consequence cards and characters. Students received a participant manual and participation certificate.	Marconi	Rela	Elementary	5	147	15
Benefits of Staying at School	Program that focuses on raising the awareness of adolescents about the importance and benefits of continuing education, by providing educational information and presenting career options. Students received a participant manual, board games, chart analysis, budget preparation, career planning and discussion.	- City Elementary School	Belo Horizonte	school adolescents	5	139	15
TOTAL					15	379	52

#### A16% PROGRAM - EDUCATING CITIZENS

In addition to the new projects, the actions of the Company, such as the AI6% Program - Educating Citizens, are also inherent to the VOCÊ Program.

The AI6% Program - Educating Citizens, implemented in 2000, is one of the corporate actions developed by Cemig and is recognized nationally for its strong social impact, especially in the smaller municipalities of the state. The AI6% is the result of a partnership between the Cemig Inter-managerial Association (AIC) and Cemig - VOCÊ Program. The Program was created to help institutions that work with children and adolescents in situations of personal or social risk and, at the same time, to support the actions of Cemig's volunteer employees who assist these entities.

Supported by Federal Law No. 8.069/1990, the Statute of the Child and Adolescent, the Program aims to encourage employees to transfer up to 6% of their income tax to support social projects of the approved institutions to raise funds with the Funds of Childhood and Adolescence (FIA). Cemig also allocates part of its income tax to the participating Municipal Councils of Children and Adolescents (CMDCAs).

Since the founding of the AI6% Program, more than BRL 20 million have been invested in the projects of the participating entities, benefiting thousands of children and adolescents, distributed by several municipalities in the area covered by Cemig.

In addition to contributing to the implementation of projects approved by the CMDCA through the allocation of financial resources to the AIF, AI6% is also concerned with assisting in the training of participating institutions. In partnership with the Inter-Sectorial Alliances Center of Minas Gerais (CeMAIS), in 2018, 64 social institutions were trained through the Shared Knowledge Journey (JCC) and 50 entities in the Pre-ENATS Workshop, which preceded the 14th National Meeting of the Third Sector - ENATS 2018, event sponsored by Cemig.

The JCC reflects the reality of the Third Sector, which aims to contribute to the technical improvement of professionals and volunteers so that they can manage their institutions with a sense of entrepreneurial opportunity. The project offers six modules of in-person training with three hours each, with a total workload of 18 hours. The modules include the following topics: Strategic Management, Legal, Administrative, Communication, People Management and Volunteering and Project Development. The Pre-ENATS Workshop is complementary to the points covered in the "Shared Knowledge Journey - JCC" and, in 2018, its theme was "Resource Mobilization Plan."

All the AI6% Program actions strengthen Cemig as a socially responsible company. In addition, it contributes to the development of the interpersonal relationship of employees and the maintenance of Cemig in sustainability indexes, such as the Dow Jones Index.

In 2018, the AI6% Program had the participation of 149 volunteers (sponsors of the entities) and 1,788 employees (30.3% of the effective) allocated part of their income tax due, amounting a total of BRL 1,296,488.00. Cemig, as legal entity, allocated BRL 1,748,460. In total, BRL 3,044,948 was allocated to support projects of 169 charitable institutions, assisting approximately 25,000 children and adolescents from 89 municipalities.

	RESOURCES DESTINED TO THE AI6% PROGRAM						
Year	Destination 6% Income Tax of Employees	Destination 1% Income Tax of CEMIG	Total Amount Invested				
2014	BRL 1,353,389.00	BRL 2,500,000.00	BRL 3,853,389.00				
2015	BRL 1,207,957.00	BRL 1,263,657.00	BRL 2,471,614.00				
2016	BRL 1,311,157.00	BRL 249,600.00	BRL 1,560,757.00				
2017	BRL 1,126,058.00	BRL 938,100.00	BRL 2,064,158.00				
2018	BRL 1,296,488.00	BRL 1,748,460.00	BRL 3,044,948.00				

Year	Number of Cemig Employees	Participants of AI6%	Participation % in relation to the number of employees
2014	7.922	2.158	27.2
2015	7,860	1,782	22.7
2016	7,119	2,133	30.1
2017	5,864	1,757	29.8
2018	5,900	1,788	30.3

It is also worth noting the participation of Cemig in volunteering promoting associations.

- CBVE Brazilian Council of Business Volunteers: a network that brings together companies, confederations, institutes and business foundations, and develops activities for the promotion and the development of corporate volunteering. The purpose of CBVE is to be a network for the promotion and development of corporate volunteering, both inside and outside the country, providing to its members a space for collective construction and dialogue.
- CMVC Corporate Volunteer Committee of Minas Gerais, an organization that emerged from the interest of several companies in creating a space for sharing experiences aimed at volunteering in the corporate field. The member companies have the challenge of disseminating and improving the culture of corporate volunteering and social responsibility, and of contributing to making these practices a local and human development tool, aligned with the strategies of each organization.

Other programs with actions that strengthen Cemig's corporate citizenship in progress in 2018 are:

#### TAQUARIL PROGRAM

In 2018, Cemig resumed the Taquaril Substation Environmental Project. Elementary school children from six schools located near the transmission lines complex, which make up the Taquaril substation in Sabará, had the opportunity to get to know environmental preservation areas of and the dangers of electricity in the daily life. In total, 270 children participated in the visit.

The purpose of the initiative was to raise awareness among the community about the prevention of fires under the transmission lines and in the area around the Taquaril Substation. At the end of the project, which began in May of this year, no occurrence was detected due to illegal fires near the lines. This substation is of fundamental importance in the supply of energy, since it is responsible for much of the supply of the Metropolitan Region of Belo Horizonte (RMBH) and of the East Region of the State.

Students received information about the risks of causing fires near the substation transmission lines, the ways of treating and recycling waste, rational and safe use of energy,

and participating in a seed planting workshop. During the visit, students were also advised on the proper use of kites. The project has the initiative of contributing to the awareness of elementary school children about the importance of preserving the environment and of the safe and rational use of electric energy.

By working on this project, the company aims to promote integration with the community, through the awareness of children and young people who can be multipliers of the project, a fundamental factor so that there are no fires that could compromise the energy supply.

#### LIGHT FIELDS PROGRAM

The program began in 2005, reaching, since then, approximately 900 amateur fields for sports practices. In the current edition, the novelty is the inclusion of the multi-sport courts in the project. There are 250 amateur soccer fields and 50 multi-sport courts that will receive electric lighting, aiming to improve the quality of life and the social inclusion of needy communities with sports, leisure and cultural activities, especially at night time.

In addition, as a result, the image of Cemig, as a company committed to acting with social responsibility, is expected to improve. In order to participate in the Program, the City Hall must be in compliance with Cemig, taking responsibility for the management of the sport field /multi-sport court, including security, maintenance of facilities and payment of electric bills. The fields/courts that receive the lighting must belong to the municipalities and be within the Cemig's concession area.

The programmed investment for the program is of the order of BRL 15 million, and will be used for the elaboration of lighting projects, the acquisition of materials and the execution of the works. Out of 300 fields/courts to be illuminated, forecasted in the project, 244 were completed and 22 are being implemented. In 2018, BRL 8.2 million were invested.

## 12.4 SOCIAL INVESTMENTS

In 2018, the company presented a better scenario from the economic point of view, although a year also marked by great challenges as a result of the financial crisis that Brazil is going through. In order to maintain its sponsorship projects, Cemig has collaborated with other companies in the group - Taesa, Light and Aliança Energia, and thus maintained its investment in the projects with the State and re-invested in other Tax Incentive Notices. It also sponsored sports and culture projects through state incentive laws, which leveraged the Company's participation in projects in these areas.

#### 201-1

Projects sponsored by Cemig on different axes (Health, Social, Culture, Education, Sports) stood out in 2018. There was a 22% increase in social investments compared to 2017. Some of them are already finalized (executed status), others are in progress or due to occur in 2019 (under execution status) and, finally, there are those whose sponsorship has been approved and are in the process of being initiated (released status). These projects are presented in the table below.

	PROJECTS SPONSORED BY CEMIG						
Investment	area	Project	Description	Status			
	Cemig allocated almost	National Program of Support to Oncologic Attention - PRONON, Ministry of Health: Bom Samaritano Social Welfare	Cemig has contributed to the acquisition of high-performance, full- body magnetic resonance imaging equipment for the oncology imaging industry. The institution assists Governador Valadares and its neighboring region and, with this, it managed to increase its service capacity, to reduce costs and the displacement of patients.	Executed			
Health	BRL 2 million to improve the service to the communities assisted by the institutions, in different regions of Minas Gerais.	PRONON: São Francisco de Assis Hospital Foundation	The Foundation, located in Belo Horizonte, needs assistance to expand and qualify diagnostic care services, increase the number of oncological consultations, implant the palliative care service with a multidisciplinary team, qualify the chemotherapy service, expand the capacity for performed examinations and reduce the time for issuing reports. With the investment of Cemig, it is expected that the implementation of some of these improvements will be made feasible.	Under execution			
		Vila Musical	Project that offers children and adolescents from high social vulnerability communities access to the learning, practice and enjoyment of music as an instrument of human development, social integration, work and income, and socioeconomic inclusion. Violin, viola, violoncello, acoustic bass, percussion, transverse flute, sax and clarinet lessons are taught to youngsters from 4 to 20 years of age.	Released			
Social	This area counted with the support to 185 diverse programs and projects, totaling a value of more than BRL 5 million, which focused on improving the quality of life of those assisted.	Fund for the Elderly	The Institutions "Lar dos Idosos Padre João de Oliveira Lima" and "Lar dos Idosos Padre Vicente Cornélio Borges" were hit by heavy rains in 2017 and needed help to recover the damaged structural part and to acquire a new car. To this end, donations were collected through the Elderly Fund, with the objective of improving the conditions for the 95 elderly people living in these institutions in the cities of Caeté and Ribeirão das Neves, in Minas Gerais.	Under execution			
		Hahaha Institute	The Hahaha Institute aims to promote access to culture and citizenship for elderly people hospitalized in long-term care in Ozanam City, in Lar Dona Paula of the São Vicente de Paulo Society, in the Elderly Institute Afonso Pena and Hospital Paulo de Tarsus. For this purpose, periodic artistic interventions, continuous training of project professionals and equipment acquisition are carried out.	Under execution			

			1st ECOART - Culture and Environmental Preservation for Everyone	This event covered multicultural actions accessible to the general public and featured concerts of instrumental music from Minas Gerais, presentations of dance groups, socioeducative and theatrical actions. This event focused on the moderate and responsible use of water, planting seedlings, workshops with recyclable materials and various leisure activities for an audience of approximately five thousand people.	Executed			
		Urban Circuit Cura	Painting Festival in Belo Horizonte. The Urban Circuit of Arts left as legacy for the capital of Minas Gerais the first Overlook of Urban Art worldwide, in which the public can follow, live, the accomplishment of the works. This observation point is open throughout the year, making it a charming public balcony of the city.	Executed				
		Grupo Corpo	Grupo Corpo is an internationally renowned contemporary dance company, established in 1975 in Belo Horizonte, Minas Gerais. The project sponsored by Cemig enabled the rehearsals and re-assembly of two shows in the group's repertoire in a special season and at popular prices.	Executed				
		FETO - Festival Estudantii de Teatro – Culture ICMS	The festival has been held since 1999, bringing together hundreds of students, teachers, artists, masters, doctors and those interested in theater and formation. Its main objective is the artistic and social development of students, through the incentive to the organization and presentation of artistic productions.	Executed				
Culture	The strengthening of this sector continues to be one of the Company's priorities in Corporate Citizenship. Cemig has directed about BRL 18 million for cultural projects, as the company believes they generate opportunities for leisure, help in critical composition and provide human development.	sector continues to be one of the Company's priorities in Corporate Citizenship. Cemig has directed about BRL 18 million for cultural projects, as the company believes they generate opportunities for leisure, help in critical composition and provide	sector continues to be one of the Company's priorities in Corporate Citizenship. Cemig has directed about BRL 18 million for cultural projects, as the company	sector continues to be one of the Company's priorities in Corporate Citizenship. Cemig has directed about BRL 18 million for cultural projects, as the company	sector continues to be one of the Company's priorities in Corporate Citizenship. Cemig has directed about BRL 18 million for cultural projects, as the company	Inhotim Institute - Activities and Maintenance	The Inhotim Institute, located in Brumadinho, Minas Gerais, houses a museum complex with a series of pavilions and galleries with works of art and sculptures. In 2018, Cemig approved the sponsorship of the project for the maintenance of this important open sky museum, whose botanical garden has international relevance and the institute has become a national and international reference in contemporary art.	Executed
			21st Tiradentes Cinema Show	It is an avant-garde audiovisual program that brings together all the artistic expression in a comprehensive cultural program offered free of charge to the public in the city of Tiradentes, Minas Gerais. The Show exhibits Brazilian films in national previews, the Brazilian Cinema Seminar, a meeting between critics, directors and publics, workshops that certify more than 200 students, a Film Show for the children and youth audience and exhibitions, reaching an estimated audience of more than 35 thousand people.	Executed			
		Bituca: University of Popular Music	The resources of Cemig were intended to maintain, expand and consolidate Bituca as a reference of excellence in professional training for popular music, instrumentalists and Brazilian instrumental music production and its interfaces, aimed at the underprivileged youth.	Executed				
		10th FIQ - International Comic Book Festival of Belo Horizonte	FIQ is the largest Latin American meeting point for Comic Books. FIQ-BH is an ideal place to meet professionals and exchange artistic and pedagogical experiences related to the language of sequential art. In addition to the various activities offered, invited academic artists stimulate the professionals training and encourage the qualification of young comic artists.	Executed				
		FIT 2018 - International Festival of Stage and Street Theater of Belo Horizonte	Cemig sponsored the International Festival of Stage and Street Theater of Belo Horizonte (FIT-BH), which is considered one of the largest international theater festivals in Brazil, and one of the top five in Latin America. Held every two years, FIT offers plays in theaters, with popular prices, and in parks and squares, free of charge. Several nationalities shows are presented to the public, drawing a diversified schedule.	Executed				

	In 2018, Cemig invested	Instituto BH Futuro	Cemig supports the Institute aiming at contributing to the education and training of children and young people through culture, sports and technical training, stimulating the skills and competences needed for future professionals and entrepreneurship.	Under execution
more than BRL 2 million in educational projects aimed at young people, focusing on training and entrepreneurship as a means to promote autonomy and citizenship.	in educational projects aimed at young people, focusing on training and entrepreneurship as a	De Olho no Futuro (Looking to the future)	The program offers physical education classes, Jiu Jitsu, school reinforcement, crafts, capoeira and recycling to 100 young people from the city of Belo Vale and its neighboring region.	Under execution
	Corpo Cidadão	This project proposes to offer arts and education workshops (dance, music, visual arts) to approximately 120 children and adolescents of municipal schools in the city of Lagoa Santa. In addition, the project engages the families of the participants and the community in the activities.	Under execution	
Developing and promoting the practice of sports is also a responsibility of Cemig. Thus, in 2018, more than BRL 4 million were invested in the sports segment.	Copa Fecemg – ICMS Sport	Through the Copa Fecemg, more than 1,000 athletes from all age groups participated in sports competitions that covered ten modalities, providing access to sport, leisure, integration and the collective interest of the community of Minas Gerais.	Executed	
	the practice of sports is	Wheelchair basketball	Cemig sponsors the formation and maintenance of a wheelchair basketball team, aiming at the participation of the athletes in championships organized by the Federation of Wheelchair Basketball of Minas Gerais and/or Brazilian Confederation of Basketball. This sponsorship is part of a social inclusion policy, which is one of the guiding principles of the Accessibility Law followed by Cemig.	Executed
	Favelas Cup	The Favelas Cup is a project of social inclusion through sport. The project involves young people in integration tournament of between several communities, carrying out productive activities and football matches. The 2018 edition was held at the Multi-sport Complex of Vale do Jatobá and included 32 national teams (male and female), reaching a total of 12,650 young people.	Executed	
		Avança Esporte II Project	The purpose of this Cemig sponsorship is to continue and provide improvements to the process of trainning and development of Mackenzie athletes, especially in basketball. With this support, 70 athletes were able to have greater experience in high-performance sports and were able to take part in at state, national and international level competitions.	Under execution

### 203-1

The detail of the values of social investment is described in the following tables.

Resource Origin	Value (BRL)
Own	10,749,005
Granting of Donations	7,200,000
Energy Efficiency Program	30,584,076
Tax Waiver	20,839,711
Total	69,372,792

Investment area	Value (BRL)
Culture	18,021,714
Education	11,245,443
Sport	4,311,474
Social Actions	12,403,831
Energy efficiency	21,481,236
Health	1,909,093
Total	69,372,791



Adriana Duarte (Sustainability)

# 13. ENVIRONMENTAL RESPONSABILITY

103-2:307

Cemig recognizes its responsibility to the environment and is committed to the adoption and dissemination of good environmental management practices. It has an Environmental Policy, whose establishment has contributed to formalize the integration of environmental issues in Cemig's decision-making process, in all its projects, processes and activities related to the expansion, deployment, operation and maintenance of assets, service realization and partnerships.

Cemig's Environmental Policy establishes 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 six principles: (i) strategy, (ii) management, (iii) compliance with legal requirements, (iv) pollution prevention, (v) commitment to continuous improvement and (vi) environmental education and communication, processes and Cemig's management routine.

## **13.1 ENVIRONMENTAL STRATEGY**

ODS7 ODS13 ODS15

Cemig seeks to balance the Company's economic and social development with environmental responsibility, biodiversity conservation, sustainable use of natural resources, waste management and mitigation and adaptation to climate changes. It considers the current environmental legislation, the guidelines of the Environmental Policy, as well as other internal policies related to the theme, such as the Biodiversity Policy and the Water Resources Policy, in addition to Cemig Commitment to Climate Change.

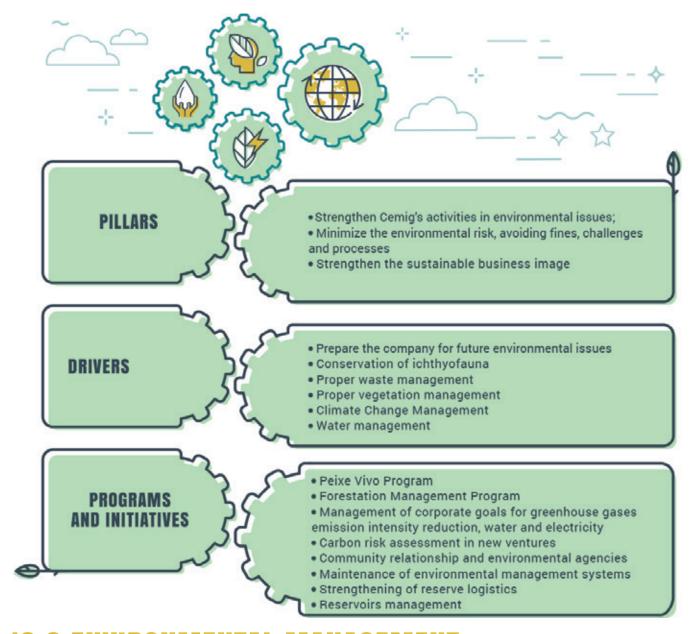
Cemig's environmental strategy is contained in the Company's Strategic Planning and its formulation considers current and future risks and opportunities, challenges and medium-and long-term scenarios and the expectations of stakeholders with whom Cemig relates, besides contributing to the ODS.

Cemig Environmental and Social Sustainability Program is the instrument that details the environmental strategy at the tactical level, in which priority environmental issues are identified and prioritization for action plans (with goals and targets, as well as an indication of responsibilities, programs, initiatives and their respective objectives, indicators, allocation of resources, etc.). Periodically, a committee composed of representatives of the Company's boards accompanies this program.

The Prioritization Matrix covers general environmental aspects, Biodiversity, Water, Wastes and Climate Change.

The involvement of Cemig's various stakeholders is considered fundamental, through networking and building partnerships in the design and implementation of all programs.

The Company continuously invests in R&D and new technologies to mitigate the impacts and reduce the environmental risks of its operations, the results of which are demonstrated throughout the items in this chapter. The figure below presents the environmental strategy and its tactical and operational deployment.



### **13.2 ENVIRONMENTAL MANAGEMENT**

#### 103-2:301

Cemig's environmental management encompasses all operational and support processes, from the planning, construction, and operation to the decommissioning phases. The structuring of the Management Systems ensures that the assumptions are assumed and applied by Cemig's entire workforce.

#### 103-1:307

The Environmental Management System (EMS) allows the adoption of best practices for minimizing environmental risks and optimizing operating costs. Acting in a preventive manner, the EMS aims at minimizing possible environmental impacts, reducing occurrences, adequately preparing employees for emergency response, as well as obtaining greater assertiveness in the conduct of the environmental strategy and the commitments made with the competent agencies.

Then, when building the prioritization matrix and defining the work programs and initiatives, it is necessary to conduct and manage the actions and results of those efforts.

103-3:301 103-3:307

By adopting the ISO 14001:2015 NBR standard or an Internal Management System called EMS Level 1, developed based on the principles of ISO 14001:2015, the areas will conduct their activities in a controlled manner, focusing on the compliance with legal requirements applicable to environmental management. In order to ensure control, both systems are verified by internal audits, carried out by their own priority teams and external audits, which are conducted by an external and independent certification agency accredited by the General Coordination of Accreditation of Inmetro (Cgcre).

With the transition from environmental certifications to the new version of ISO 14001 standard, the environmental scopes were revised in scope and direction considering the benefits of the new version.

These benefits include better understanding of stakeholder needs and expectations, a broader understanding of the processes in which they are embedded, a greater alignment of environmental projects with organizational strategy and process risk management. In this way, it is possible to have an integrated view of the service life cycle developed by Cemig, understanding the environmental impacts of the enterprises from the beginning to the end of their value chain.

#### 103-2:307

the accuracy of the SGA Level 1 practices.

The regulatory requirements are applicable and complied with by Cemig, as stipulated by the Quality Manual. This manual is published corporately as an Organization Instruction that specifies the most relevant topics for the Systems and guides the fulfillment of the requirements required by the standards through Cemig's practices. In a complementary way, online training is carried out in order to clearly and objectively present the contents of the Quality Manual and enable all employees to comply with the normative requirements of NBR ISO 9001:2015, NBR ISO 14001:2015 and OHSAS 18001:2007, increasing, thus, the commitment of everybody with the Management Systems and certified processes of the organization.79,80

<sup>79</sup> Note 1: The Certification of Environmental Management System in NBR ISO 14001 is only possible for areas that have an environmental license and, since many facilities were built before the environmental legislation, currently they are in corrective licensing process with environmental agencies. These facilities had good Environmental Management practices, but were prevented from getting certified. Thus, Cemig developed the SGA Level 1 as a step towards certification in ISO 14001. In fact, over time, the facilities that have been obtaining the Environmental Operating License, after the first external audit, were recommended for ISO 14001 certification, showing

<sup>&</sup>lt;sup>80</sup> Note 2: The General Accreditation Coordination of Inmetro (Cgcre) is the accreditation agency of conformity assessment agencies recognized by the Brazilian Government. Cgcre is therefore within the organizational structure of Inmetro, the main organizational unit that has full responsibility and authority over all aspects of accreditation, including accreditation decisions.

	Coverage of the Environmental Management System at Cemig							
Activity	ISO 14001	SGA Level 1	Minimum Requirements <sup>4</sup>					
Generation <sup>1</sup>	65%	20%	15%					
Transmission <sup>2</sup>	72%	28%	0%					
Distribution <sup>3</sup>	2%	10%	88%					

Activity	OHSAS 18001	Hira-Cemig Model
Generation <sup>1</sup>	84%	16%
Transmission <sup>2</sup>	100%	0%
Distribution <sup>3</sup>	1%	99%

<sup>1</sup> In relation to MW generated in large power plants

## **13.3 ENVIRONMENTAL COMPLIANCE**



In addition to being a legal obligation, the environmental licensing of Cemig's activities aims to ensure that its expansion and operation take place in compliance with environmental and sustainability criteria and in line with the Company's Environmental Policy to support impact prevention and guide environmental management of Cemig's projects.

307-1

Environmental licensing may be preventive (in the case of new developments) or corrective (undertakings installed before environmental licensing is mandatory). For the environmental licensing of the projects installed prior to 2007, Cemig Distribuição organized a grouping by region, dividing the system into seven regional meshes: Center, East, West, North, South, Mantiqueira and Triângulo. With the entry into force of Normative Resolution 217/17 of the Government of Minas Gerais, which excluded the substation code of the projects subject to licensing and changed the transmission line concept, Cemig Distribuição's developments were not subject to licensing, therefore, all of them are now regular with respect to environmental legislation.

<sup>2</sup> Regarding the extension of the Transmission Lines of the GT

<sup>3</sup> In relation to consumers4 The Minimum Requirements only exist where the EMS is not implemented, either based on ISO 14001 or based on EMS Level 1

<sup>4</sup> The Minimum Requirements only exist where the EMS is not implemented, either based on ISO 14001 or based on EMS Level 1

#### 103-3:307

Cemig GT, in turn, has 79% of its duly licensed ventures and 21% in the process of obtaining the respective environmental licenses. As Cemig GT's ventures were built prior to the mandatory environmental licensing, they all fall into the category of corrective licensing. All processes are monitored in terms of deadline compliance, which guides the submission of license renewal applications, since the deadlines for submitting requests for the removal of environmental licenses are prescribed by law.

The risk to Cemig's business related to environmental licensing processes is relevant to the Company's business since nonconformities (whether with deadlines, obtaining licenses or imposing restrictions) may have an impact on reputation and results. These risks are described and discussed in Cemig's Reference Form and Form 20-F.

#### 307-1

Receipt of notifications of significant environmental assessments and infractions<sup>81</sup> by Cemig recorded only one lawsuit in 2018, totaling BRL 227,000. This demand has already been addressed by the Company, which has already sent a response to the Public and Environmental Agencies.

### 13.4 FUNDS INVESTED

In 2018, Cemig totaled BRL 47.4 million in resources invested in the environment. Environmental investments were subdivided into capital investment, expenditures and R&D projects, as shown in the table below.

		Resources Allocated to the Environment (BRL)				
	2016	2017	2018			
Capital Investment	8,177,000	4,048,000	13,351,000			
Expenses	41,628,515	32,268,421	30,228,938			
R&D	2,856,000	1,138,257	3,886,744			
Total	52,661,515	37,454,678	47,466,682			

Among the three investment fronts, it is worth mentioning the resources destined to waste management, BRL 755 thousand; to R&D projects, BRL 3.8 million; and investments and expenses related to compliance with conditions and environmental improvements, BRL 43 million. The Socio-Environmental Adequacy Committee periodically reviews prioritization and allocation of these resources.

<sup>&</sup>lt;sup>81</sup> Note: Environmental notices and infractions are considered significant if the fine is greater than US\$ 10,000. Definition suggested by the Dow Jones Sustainability Index.

### 13.5 ECO-EFFICIENCY

ODS12

Cemig makes its contribution to the conservation of environmental resources through proper environmental management in its operations, since it has significant consumption of inputs and materials, with consequent generation of waste. The type and quantity of materials used and their disposal after and / or at the end of their useful life can cause significant impacts.

The environmental management approach defined and implemented by the company converges with its environmental commitments and with sustainable development.

#### **Materials**

301-1

Cemig's non-renewable source materials of greater use and operational relevance, as well as the quantities consumed, are described in the table below.

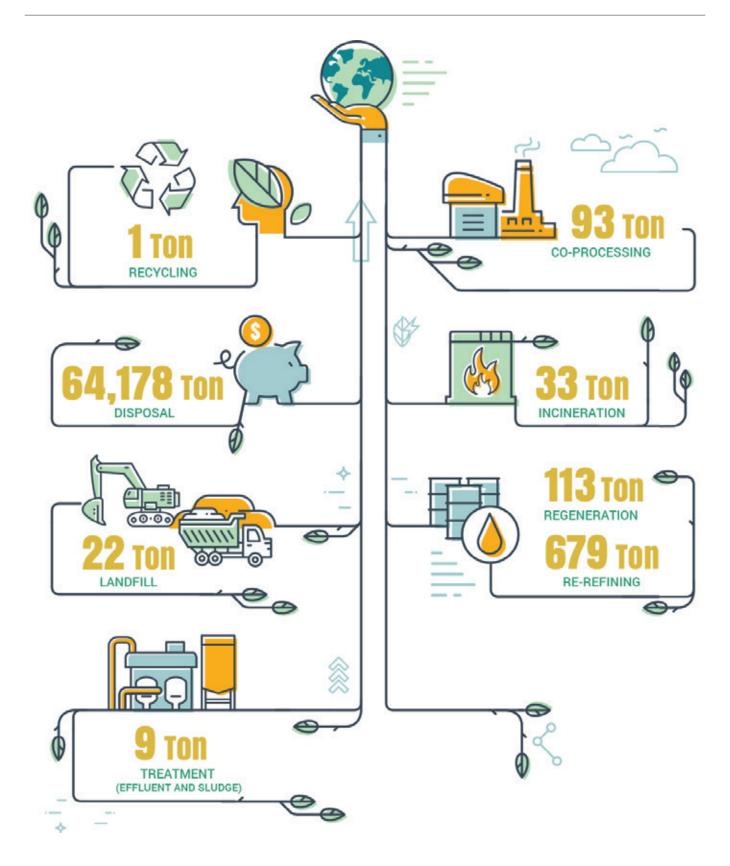
Maria	Transformers for		Cables	Cables	Meters (unit)	Public lighting (bulbs, relays, reactors,
Year	Distribution (unit)	Concrete Poles (unit)	(m)	(kg)		luminaires, arm, socket-outlet, ignitor harness and etc.) (unit)
2013	14,209	52,243	10,795,817	2,684,791	843,185	734,429
2014	11,938	38,598	8,901,101	1,453,548	480,704	698,406
2015	16,237	39,530	8,927,891	1,316,413	555,390	42,107
2016	19,688	47,163	8,560,534	1,000,324	529,088	70,652
2017	28,116	42,057	7,853,443	1,155,093	545,560	49,986
2018	28,488	39,231	7,406,782	1,308,120	441,605	*

In 2018, the responsibility for the monitoring and maintenance of public lighting was transferred to municipalities. Thus, Cemig no longer manages this aspect and, therefore, no longer accompanies the data related to it.

301-2

Alternative options from recycled materials are not yet available on the market for materials most used by the company in the generation, transmission and distribution of energy. Cemig remains attentive to new solutions, seeking alternatives that bring components or inputs fully recycled for the products consumed.

#### Waste



Currently under review, the Waste Management Plan (PGR) presents a forecast of qualification and quantification of the waste generated and establishes criteria for the PGR to be applied, monitored and updated continuously for its adequate performance. The PGR aims at legal compliance and support the implementation of the Company's Environmental Policy.

The generating units are responsible for the proper segregation of waste, identification, packaging and transportation from the generation point to the CDA-IG. In some cases, there are outsourced contractors to carry out part of the process<sup>82</sup>. The Igarapé Advanced Distribution Center (CDA-IG) is responsible for the temporary storage of corporate waste generated by Cemig D and Cemig GT. The management of these processes and the final disposal is the responsibility of the Management of Supply of Material and Service.

The Environmental Management System - EMS Level 1 and ISO: 9001:2015, certifies waste management processes.

The destination process is monitored and, in 2017, Cemig implemented waste control via SAP-R3 in order to ensure greater traceability and availability of waste generation and disposal data. The final disposal processes used by Cemig are presented in the table below.

	FINAL DISPOSAL PROCESSES OF WASTE OF CEMIG
Final disposal	Description
Disposal	Consists of conducting in-person auctions/bids, establishing procedures consistent with Cemig's environmental management, aiming at directing reusable waste to recycling companies.
Sanitary Landfill	Non-hazardous wastes that are not recoverable/recyclable are sent to the Sanitary Landfill of Juatuba City Hall.
Co-processing	Technique for the use of industrial solid waste by processing it as partial substitute of raw material or as fuel for the kiln of clinker production, in the cement manufacture.
Incineration	Thermal destruction process carried out under high temperature - 900 to 1200 °C, with controlled residence time - and used for the treatment of hazardous waste or wastes that require complete and safe destruction.
Recycling	Process of solid wastes transforming, which involves the alteration of its physical, physical-chemical or biological properties, with the objective of changing it into inputs or new products.
Oil Regeneration	Industrial process carried out by the company to reestablish the physical and chemical properties of the insulating mineral oil, returning the oil to the process and avoiding its premature disposal.
Reuse	Process for the use of solid waste without its biological, physical or physico-chemical transformation.
Re-refining	Industrial process for the removal of contaminants, degradation products and additives, providing the product obtained in this process with the same characteristics of basic lubricating oil. The main steps in the oil recovery process are decantation, neutralization, distillation, clarification and filtration.

#### 306-2

The final disposal of Cemig waste is in compliance with the National Solid Waste Policy - PNRS, established by Law No. 12.305/10.

In the period from January to December 2018, 64.3 thousand tons of industrial waste were sent to final destination: 99.58% of these wastes were disposed of or recycled; 0.17% regenerated, reused or decontaminated; and 0.24% co-processed, incinerated, sent for treatment (effluent and sludge) or disposed in an industrial landfill. Compared to 2017, when

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<sup>&</sup>lt;sup>82</sup> Since 2014, for example, the Apoteose Transport Company has taken over Cemig's logistics operation at CDA-IG and Jatobá Advanced Distribution Center. These suppliers of transport services or final disposal of waste should have environmental licenses, permits for the movement of waste and Certificates of Regularity of Potentially Pollution Activities with the Federal Technical Cadastre / IBAMA, being periodically audited.

39,800 tons of waste were generated, Cemig increased its disposal of industrial waste by 62%. It should be noted that waste destined for 2018 was not necessarily generated in 2018. This is due to temporary storage where waste is characterized, segregated, packaged, identified and subsequently destined. Since in 2018 Cemig closed a five-year cycle of investments in infrastructure maintenance, the observed increase in waste disposal is justified.

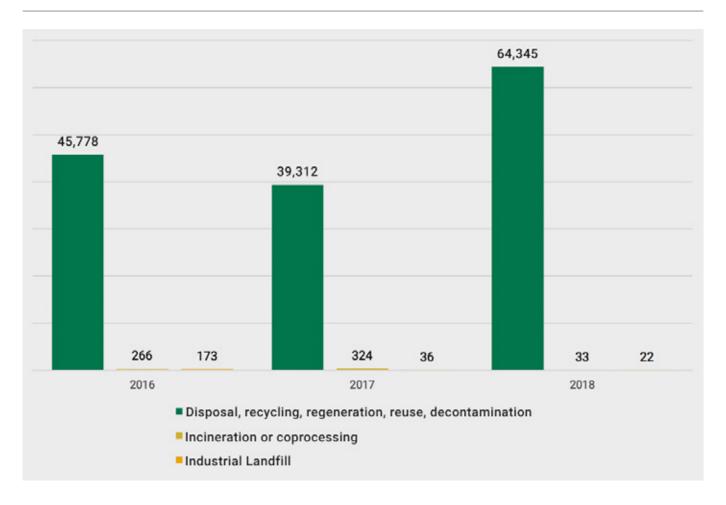
The disposed waste consists mainly of cables and wires, transformer scrap, metal scrap, meter scrap, poles, crosses, trimmings and waste wood. Revenue from the sale of these 64 thousand tons of waste reached BRL 44.6 million in 2018, an increase of approximately 316% over the previous year's revenue. This increase is largely due to the divestiture of distribution transformers.

In 2018, nearly BRL 232 thousand was spent on the disposal of 112 tons of solid waste impregnated with oil, solvents, PPE, glass fiber and wool waste, septic tank sludge, asbestos waste and contaminated with PCBs and insulating mineral oil, representing a decrease of 76% in mass in relation to the previous year, mainly due to the decrease in the generation of waste contaminated by PCBs and insulating mineral oil. Thirty-three tons of contaminated waste and equipment containing PCBs were disposed in 2018. Such materials were sent for thermal destruction in a licensed company to perform this service.

From the total oil waste disposed, 112.5 tons of insulating mineral oil were regenerated and reused by the Company. This measure, in addition to providing environmental benefits, such as the non-generation of hazardous waste, avoided a cost to Cemig of approximately BRL 12,300, considering only the acquisition values of the new oil, without considering the costs for the disposal of waste.

All waste disposal processes are supported by certificates of final disposal of waste.

### Final disposal of Cemig's waste, in tons and by disposal method

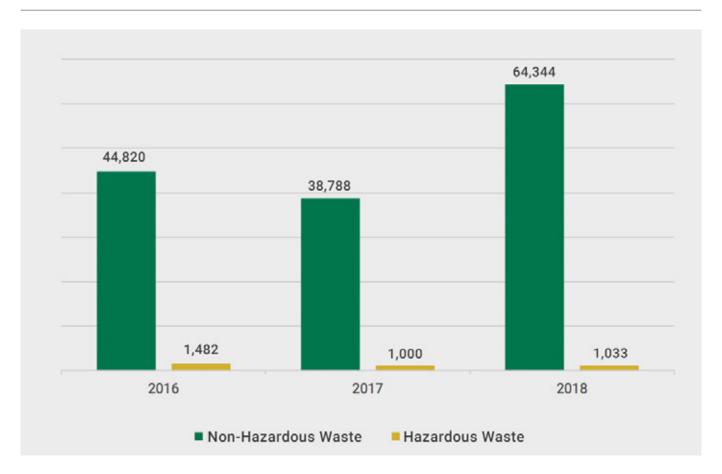


306-4

The graph below shows the proportion of hazardous and non-hazardous waste disposed of by Cemig over the last three years. From the hazardous waste, 799.5 t were transported and 233.9 t were treated<sup>83</sup>. Cemig does not export or import hazardous waste.

<sup>83</sup> Waste was considered as treated with the following final destinations: co-processing, decontamination and recycling, incineration and CTO regeneration.

# Weight of hazardous and non-hazardous waste disposed by Cemig



### **Effluents**

306-1 306-2

The impacts of disposals of liquid effluents vary according to the quantity, quality and fate given to the effluent. The main effluents generated by Cemig come from the sanitary facilities of its infrastructures, from the use of water to the cooling of equipment in the generating plants and to the actual generation in hydroelectric turbines. In relation to effluents from sanitary facilities, 100% of the effluent is fed to conventional treatment systems, offered by local concessionaires and does not represent a risk to water bodies.

Regarding effluents from the generation and cooling of equipment in hydroelectric power plants, for most installations, the water used is withdrawn into the water outlet and discharged into the leakage channel system, with a bypass, but no measurement. These uses are non-consumptive and the disposal of water is together, directly into the water body. Any degradation of the water quality may occur in an insignificant volume when compared to the river flow.

Cemig also monitors the water quality upstream and downstream of the dams, so that the Company can identify if there is any impact being caused to the watercourses. This monitoring acts as an evaluation of the quality of the Company's effluent management, aiming at the adaptation of effluent parameters to those defined by the legislation. The analyzes and respective periodicities are shown below.

Analysis	Periodicity
Groundwater analysis	Semiannually
Effluent analysis - effluent grease trap	Semiannually
Effluent analysis - oil-water separator box	Monthly
Analysis of water potability	Semiannually
Soil analysis in contaminated area	When it is suspected of contamination

Monitoring also consists of audits three times a year: an external audit performed by the certifying agency ABNT and two internal audits performed by auditors prepared and trained to do so.

#### 306-1

Regarding the Igarapé Thermal Power Plant, part of its effluent is treated as an industrial effluent. In this venture, there is an internal effluent treatment process, which performs pH adjustment, removal of suspended solids and oils and greases - before being released into the receiving body. The water quality of the receiving body - Paraopeba River - downstream of the launch is monitored to ensure compliance with legislation<sup>84</sup>. In 2018, the volume of effluent released by Igarapé Thermal Power Plant was 4,321.42 m<sup>3 85</sup>.

#### 306-3

It is important to highlight that the main risk of negative impact due to the emission of effluents from Cemig is the presence of oil in the waters of the Thermal Power Plants. Any type of incident relating to contamination or leakage is recorded and consolidated in an Environmental Occurrence Report (ROA). In 2018, there were two recorded episodes, whose details are in the following table.

#### 306-3

	LEAKING CASES IN 2018	
Power plant	Pai Joaquim SHP (MG/TR)	SE Várzea da Palma (MT/CN)
Leakage location	Circuit Breaker 6J4	Autotransformer T5
Leakage volume (liters)	1,000	7,000
Leak Material	Oil spill on floor	Oil spill in gravel and porcelain and in the oil- water separator box

<sup>84</sup> The following are the parameters accepted by the legislation: pH 6 to 9, turbidity < 100, COD 180, oils and greases 20.

<sup>&</sup>lt;sup>85</sup> For the calculation, it was adopted the estimate that the volume of industrial effluent generated corresponds to two thirds of the production of demineralized water.

In both cases, it was possible to remedy the leakage and the oil did not come into contact with soil or liquid surface, not setting a contamination. Moreover, all contaminated solid waste was disposed of and disposed of as required by legislation.

306-5

No body of water was significantly affected by disposals or drainage of water resulting from Cemig operations in 2018.

### **Energy**

302-1 103-1:30

In the development of its operations, Cemig consumes energy in the form of fuel and electricity. The energy consumption data in the organization are shown in the table below<sup>86</sup>.

Energy o	onsumption in the organization
Precursor	Total
	ewable fuel consumption (GJ)
Diesel - Brazil	107,750.66
Gasoline - Brazil	22,868.04
Liquefied Petroleum Gas	20.81
Natural Gas	196.24
Vehicular natural gas	1,273.70
Aviation kerosene	4,524.22
Fuel oil	273,266.67
Rene	rable fuel consumption (GJ)
Hydrous ethanol	5,665.54
Total fuel consumption (GJ)	415,565.88
Electricity consumption (GJ)	149,234.83
Total energy consumption (GJ)	564,800.71

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<sup>&</sup>lt;sup>86</sup> Although conservatively categorized as non-renewable fuels, "Gasoline - Brazil" and "Diesel - Brazil" contain addition of renewable fuels (i.e., ethanol and biodiesel respectively). Electricity consumption is also conservatively categorized as non-renewable, due to the impossibility of estimating the accurate share of renewable energy on the National Interconnected System.

302-4

For comparative purpose, Cemig's energy consumption in the last five years is grouped into the main types of consumption: electricity, fuels for emergency generators, fleet, machinery and equipment, and fuel for generation in the thermoelectric plant.

				Tot	al Power Consum	ption (GJ)				
Year	Electric power	Variation with respect to the previous period (%)	Fuel for Electric Generators	Variation with respect to the previous period (%)	Fuel for the fleet, equipment and machinery	Variation with respect to the previous period (%)	Fuels for thermo- electric power plants	Variation with respect to the previous period (%)	TOTAL	Variation with respect to the previous period (%)
2014	158,993	+0.96	314	-36.18	173,493	-1.49	8,054,794	+318.66	8,387,593	+271.46
2015	160,042	+0.66	214	-31.85	164,680	-5.08	1,965,111	-75.60	2,290,047	-72.70
2016	156,373	-2.29	356	+66.36	161,674	-1.83	1,709	-99.91	320,111	-86.02
2017	156,773	+0.26	350	-1.68	154,796	-4.25	450,154	+26,240.03	762,074	+138.07
2018	149,235	-4.81	331	-5.43	139,131	-10.12	276,104	-38.66	564,801	-25.89

#### 302-2

Cemig also accounts for energy consumption in its value chain in the following GHG Protocol categories: stationary combustion, mobile combustion, electric power procurement, employee displacement (commuting), transportation and distribution (upstream and downstream) and use of goods and services sold. Energy consumption data outside the organization are shown in the table below.

Energy co	onsumption outside the organization
Precursor	Total
Non-r	renewable fuel consumption (GJ)
Diesel - Brazil	192,039.07
Gasoline - Brazil	22,376.42
Liquefied Petroleum Gas	1,100.15
Natural Gas	37,730,196.65
Vehicular natural gas	1,510,389.48
Aviation kerosene	9,542.97
	newable fuel consumption (GJ)
Hydrous ethanol	5,148.63
Total fuel consumption (GJ)	39,470,793.37
Electricity consupmtion (GJ)	263,914,199.57
Total energy consumption (GJ)	303,384,992.94

302-1 302-2

Energy consumption inside and outside the organization was calculated from the categorization proposed by the GHG Protocol methodology. The conversion factors used are provided by the National Council of Energy Policy (CNPE), Intergovernmental Panel - IPCC, Brazilian Program GHG Protocol and in the National Energy Balance.



Sandro Garzon (Environment)

# 14. WATER RESOURCES

#### ODS6 103-1

Water is the strategic resource on which Cemig's business depends, as 96.6% of the energy generated by the Company comes from hydroelectric power plants and small hydroelectric plants. The company recognizes its role in conserving this resource and the potential impacts of its activities on water availability.

#### 103-2:303

Therefore, the Company published its Water Resources Policy<sup>87</sup> in 2016. Its principles are outlined below.

#### COMMITMENTS

Adoption of practices for rational, integrated and sustainable use of water resources. Prevention and protection against critical hydrological events, both of natural origin and arising from the inappropriate use of natural resources.

#### GOALS

Water conservation and spring preservation, through the creation of partnerships with public agencies and society, aiming at the best use of this natural resource.

<sup>87</sup> Cemig's Water Resources Policy is available on its website: http://www.cemig.com.br/pt-br/A\_Cemig\_e\_o\_Futuro/sustentabilidade/Paginas/sustentabilidade.aspx

#### RESPONSABILITIES

Participation in Public Management and compliance with the Water Resources Legislation Secure Management of Reservoirs
Climatological Monitoring
Qualitative and Quantitative Water Monitoring
Stakeholder Relationships
Research and Development

## **14.1 WATER RESOURCES MANAGEMENT**

The use of water for electricity generation purposes is subject to the regulatory environment, and the hydroelectric matrix of the National Interconnected System (SIN) is responsibility of the National Electric System Operator (ONS)<sup>88</sup>.

Consideration must be given to the multiple uses of water by other users of the river basins, in the operation and management of the reservoirs used by Cemig for energy generation, which implies several environmental and safety restrictions.

In periods of severe drought, such as occurred from 2013 to 2018<sup>89</sup>, monitoring and fore-casting of reservoir levels, as well as constant engagement with the Government, civil society and users, are paramount to guarantee the energy generation while securing water for other users.

### Rio de Pedras SHP

Partnership for Water Security and guaranteed water Supply for the Metropolitan Region of Belo Horizonte (rmBH)

In previous reports (RAS 2017, RAS 2016), the successful cases of reservoir management presented were Três Marias and Irapé, especially regarding the guarantee of multiple uses of water in the basin.

The 2018 Report contains information on the creation of an unprecedented partnership in the Rio das Velhas River Basin Committee - CBH (Rio das Velhas, São Francisco basin), involving the Rio de Pedras SHP - Cemig GT reservoir and other water users in the region.

<sup>88</sup> ONS is a private legal entity, in the form of a non-profit civil association, responsible for coordinating and controlling the operation of electricity generation and transmission facilities in the SIN, under the supervision and regulation of ANEEL.

<sup>&</sup>lt;sup>89</sup> Due to the water crisis installed in the country since 2013 and observed in most of the hydrographic basins located in the central-south region of the country, the flows in the watercourses reached well below the historical average, especially in the period between May and October.

<sup>90</sup> Capture method that takes advantage of the flow of rivers for power generation, without the need to store water.

The severe crisis due to prolonged droughts was not different in Velhas river, used for public supply of about 2.4 million people, representing around 50% of the Metropolitan Region of Belo Horizonte (RMBH). By using the run-of-river method<sup>90</sup> at Bela Fama Water Treatment Plant (ETA Bela Fama), water scarcity in the course of the river eventually led to operational difficulties.

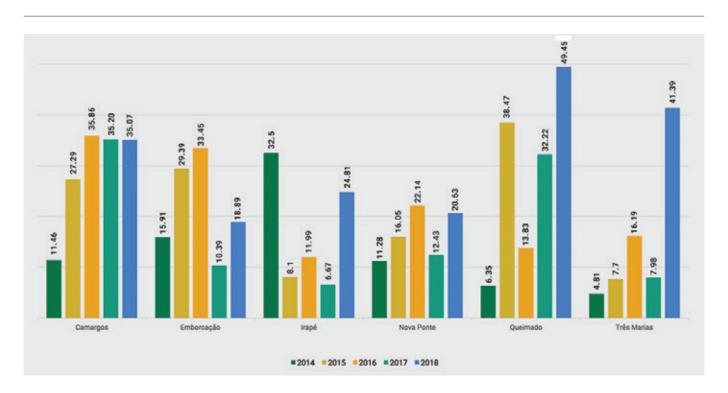
In this context, the Flow Management Group - Alto Rio das Velhas was set up, being led by CBH Velhas, formed by the participating users of CBH - Cemig, COPASA, and Anglo Gold Ashanti, and with support from the Water Management Institute of Minas Gerais (IGAM). The group proposed and executed an integrated management and operation of the upper Rio das Velhas reservoirs, Rio de Pedras SHP and Rio do Peixe Generating Complex reservoirs, located upstream of ETA Bela Fama's water withdrawals.

With the purpose of preserving water reservoirs, in order to be used in critical moments of low flows for water withdrawals at ETA Bela Fama, the group proposed an alteration of the Hydroelectric Use grant for the Rio de Pedras SHP. Both alteration of the grant and integrated operation enabled the mitigation of the long dry season effects, avoiding a water supply crisis at the RMBH.

Cemig provides daily data of several of its reservoirs levels on its website. Data for water availability in Cemig's reservoirs in the last six years is shown in the following chart.

### Water availability

**Useful Volume (% of total)** 



103-2:303 103-3:303

Cemig has indicators for water resources management, which are periodically analyzed, showing the tendency to meet targets and enabling any interventions that may prove necessary.

Among the indicators, the Power Plant Planning Efficiency Index (IEPE) stands out. The IEPE measures the efficiency of the energy operation of Cemig's hydroelectric power plants by comparing verified power generation to optimum generation, taking into account the observed water flows, the maintenance of generating facilities and compliance with operational restrictions.

The higher the result, the better the planning of water use to generate electricity. As in recent years, due to the low inflows in the period, there were virtually no spillage at the power plants. This eventually contributed to the IEPE result once again exceeding the target of 93% for 2018. The 2018 IEPE result was 93.23%.

In order to fully comply with the guarantee of the multiple uses of water resources, the concessions related to energy generation are tied to the technical studies of the project, taking into account the regularized flow, characteristics of the reservoir and of the dam.

Cemig manages 152 processes for water resources use, that are related to all of the Company activities, 28 of which are registration processes of insignificant use and 124 granting processes<sup>91</sup>.

### **14.2 RISK MANAGEMENT**

Currently, the following risks related to water resources management are monitored: sedimentation and collapse of reservoirs, deviations in meteorological forecast, loss of physical guarantee of SHPs as a consequence of decreased water availability, regulatory and price changes, and potential conflicts with stakeholders, which may result from both prolonged droughts and the occurrence of flood events due to excessive rainfall<sup>92</sup>.

### **DAM Safety**

In order to address one of its main water risks and ensure the safety of the dams operated and maintained by Cemig, the company uses a methodology based on national and international best practices, also in accordance with Federal Law No. 12.334/2010, which establishes the National Dams Safety Policy, and its associated regulation (Normative Resolution No. 696/2015 of ANEEL)<sup>93</sup>.

Detailed information on the management approaches to this risk and all actions carried out by Cemig within the dam safety strategy are described in Corporate Governance - Risk Management.

<sup>&</sup>lt;sup>92</sup> More details on the water risks facedby the company are available in other Cemig publications, namely: Form 20-F,CDP Climate Change Report (2018) and CDP Water Security Report (2018).

<sup>&</sup>lt;sup>93</sup> By virtue of Law No. 12.364/2010 and Resolution No. 696 of the National Electric Energy Agency - Aneel, any entrepreneur, understood as a private or governmental agent, with real right over the lands where the dam and reservoir is located or that exploits the dam for its own benefit or the community, should prepare an Emergency Action Plan (EAP).

### 14.3 HYDROMETEOROLOGICAL MONITORING

Cemig performs actions that enable the management and prevention of possible impacts related to water availability on its business and invests in practices that position it in a situation of greater security due to the various possible scenarios, through the use of modern techniques and equipment, such as the Storm Location System, Telemetry and Hydrometeorological Monitoring System, mathematical models of hydrological simulation, and weather and climate prediction.

Currently, Cemig operates a hydrometeorological network that generates 381 data series, 147 of rainfall, 104 of waterways flows, 56 of reservoirs and rivers, 36 weather stations which monitor temperature, humidity, speed and direction of wind, solar radiation and atmospheric pressure, and 38 of water quality of the reservoirs.

These stations are distributed in strategic locations in the States of Minas Gerais, Goiás, Rio de Janeiro, Espírito Santo and Santa Catarina, and their data is received in real time at the Company's headquarters in Belo Horizonte.

The Meteorological Radar, acquired by Cemig in 2011, is the main instrument to increase assertiveness in hydrological forecasts, allowing greater security for the operation of hydroelectric ventures and for society.

The Radar is also strategic for the control and operation of hydroelectric power plants reservoirs. With anticipated information about shifting direction and rain intensity, one can estimate the volume of water that will reach the reservoir and adjust its hydraulic operation to minimize the effects of floods for the local population and the enterprise. In addition, the Company can issue warnings to the Civil Defenses on storms that can have serious consequences for the population, allowing for preventive action.

## **14.4 WATER QUALITY MONITORING**

The Brazilian electricity sector faces several environmental issues during planning, implementation and operation of its projects. Implementation of dams has considerable impacts on rivers and these changes can influence directly the balance of the ecosystem, which might generate physical and chemical changes. It may also cause biotic components of the change system.

In accordance with the guidelines of Cemig's Biodiversity Policy, which are designed to create more efficient strategies for biodiversity conservation and meet state and federal resolutions, Cemig performs Water Quality Monitoring. This monitoring is an essential tool in the identification and collection of information for assessment and control of environmental impacts on aquatic ecosystems in all phases of their projects - from project design to operation.

Water quality of Cemig reservoirs is monitored regularly in a network that includes 47 reservoirs and more than 200 physical, chemical and biological data collection stations in the main hydrographic basins of Minas Gerais.

It is important to emphasize that the scope of objectives is gradual. The continuity and standardization of monitoring can contribute to the articulation of management agencies and users.

### Siságua and Database

The collections for water quality monitoring generate a volume of information that is analyzed and stored, structuring an extensive database, named Siságua. Siságua allows the analysis of temporal and spatial evolution of reservoirs and their surroundings, and its improvement provides a differentiated management structure. The systems corroborates a more efficient management of water reservoirs due to rapid, accurate and useful information generation.

Because of the demand for environmental information from society and, above all, from environmental agencies, Cemig disclosures data from Siságua on the Internet. The objective is to share the information acquired about aquatic ecosystems where the company has ventures.

It is important to highlight that a geographic filter was incorporated into the system, obtaining an area of geographic interaction, with the intention of improving user interface and facilitating queries.

### **Water Quality Index**

(IQA, Índice de Qualidade da Água) 2018 for reservoirs

In order to evaluate the condition of degradation of water resources, water quality indexes are applied, which aim to simplify, quantify, analyze, synthesize and communicate data generated in monitoring.

Cemig applies and publishes the Water Quality Index - IQA (CETESB, 2019<sup>94</sup>) in order to translate and facilitate communication with lay public. The additional objective is to feed the environmental management of 47 monitored plants. IQA data is available in the Siságua System.

The table below displays the average IQA results for 2018 for some of Cemig's power plants located in several river basins. Note that most power plants have a good quality level, with only one having an average water quality.

Power Plant	Water Body	IQA	
Cajuru	Pará	81.75	
Emborcação	Paranaíba	89	
Nova Ponte	Araguari	88	
São Bernardo	Ribeirão São Bernardo	80	
rapé Jequitinhonha		87	

Quality Level	Range
Excellent	90 < IQA ≤ 100
Good	70 < IQA ≤ 90
Medium	50 < IQA ≤ 70
Poor	25 < IQA ≤ 50
Very Poor	0 < IQA ≤ 25

## 14.5 RESEARCH AND DEVELOPMENT (R&D) HIGHLIGHTS

Cemig performs actions that enable the management and prevention of possible impacts related to water availability on its business and invests in practices that position it in a situation of greater security due to the various possible scenarios, through the use of modern techniques and equipment, such as the Storm Location System, Telemetry and Hydrometeorological Monitoring System, mathematical models of hydrological simulation, and weather and climate prediction.

Currently, Cemig operates a hydrometeorological network that generates 381 data series, 147 of rainfall, 104 of waterways flows, 56 of reservoirs and rivers, 36 weather stations which monitor temperature, humidity, speed and direction of wind, solar radiation and atmospheric pressure, and 38 of water quality of the reservoirs.

<sup>&</sup>lt;sup>94</sup> Based on a study carried out in 1970 by the National Sanitation Foundation of the United States, CETESB adapted and developed the IQA - Water Quality Index, which incorporates nine variables relevant for the evaluation of water quality. The creation of the IQA was based on an opinion survey with specialists in water quality, which indicated variables to be evaluated, the relative weight and the condition with which each parameter is presented, according to a rating scale. Out of the 35 water quality indicators initially proposed, only nine were selected (pH, BOD, thermotolerant coliforms, total nitrogen, total phosphorus, temperature, turbidity, total residue, dissolved oxygen). Variation curves were synthesized in a set of mean curves for each parameter, as well as their corresponding relative weight. The IQA is calculated by the weighted output of the water qualities corresponding to the variables that make up the index.

## 14.6 PARTICIPATION IN COMMITTEES

Due to the nature of its business, Cemig is a major user of water and therefore has an active participation in decision-making agencies and forums dedicated to tackling water-related issues. The Company participates in all national and state councils of water resources, river basin committees, technical chambers and working groups in its field, monitoring and proposing decisions that are more appropriate to the electric sector, taking the multiple uses of the river basins into account.

With a focus on Minas Gerais, Cemig is a member of 20 river basin committees and five federal committees. The company is also a member of the Brazilian Association of Electricity Generating Companies (Abrage), acting as coordinator of the Working Group on Water Resources (GTRH) in 2018.

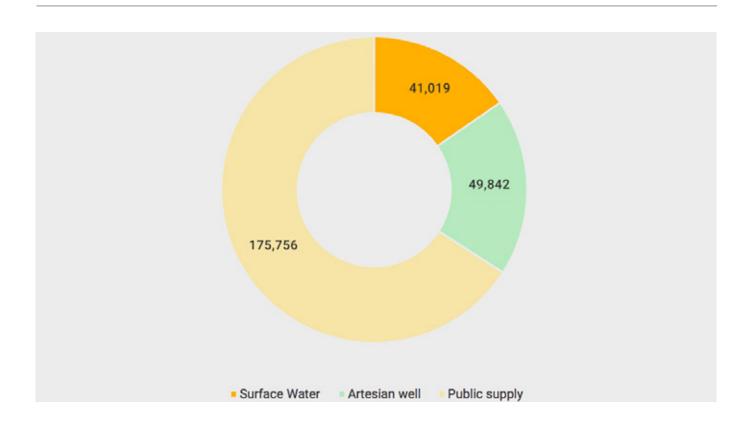
For further details on Cemig's institutional holdings, click here.

## **14.7 WATER CONSUMPTION**

303-1

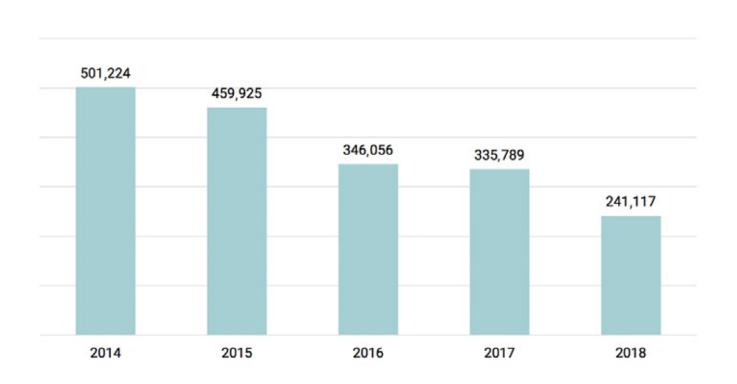
In 2018, the total water consumption at Cemig amounted to 266,548.87 m³. This sum represents 73.2% of the 2017 consumption, which totaled 363,756 m³. Regarding the comparison between total water consumption in 2018 and 2011 (baseline year in which 2,393,934 m³ were consumed), there was a reduction of 88.9%, confirming target achievement, which was to reduce total water consumption by 4% by 2018. The breakdown of total water consumption by source of withdrawal is presented below.

## Total water Consumption (m³)



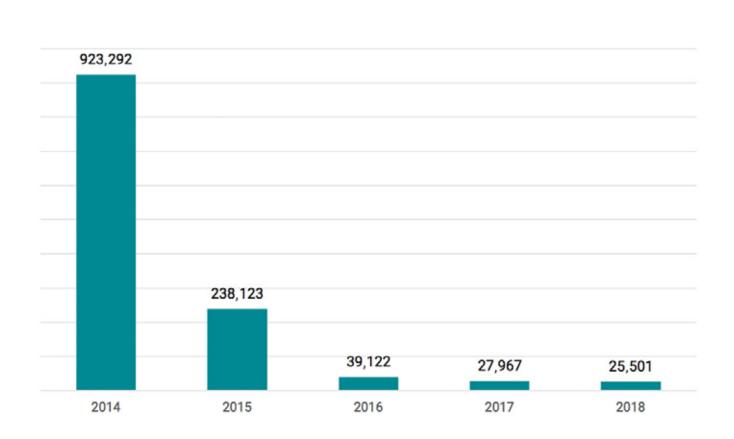
Administrative water consumption data for the last five years is shown in the chart below.

## Water administrative consumption (m³)



In 2018, industrial water consumption totaled 25,501 m³, presenting a decrease of 8.8% when compared to that of 2017. This result is due to reduced operation of Igarapé Thermal Power Plant, as the use of cooling water in the thermal power plant represents the totality of industrial water consumption by Cemig. The water used for the purpose of hydroelectric power generation is fully returned to the watercourses, not being classified as consumptive use. Industrial water consumption data for the last five years is shown in the chart below.

### Industrial water consumption (m³)



303-2

As the water used by Cemig for energy generation is integrally returned to the watercourses, this activity does not significantly affect any water sources.

303-3

Cemig does not make use of recycled or reused water nor does it adopt procedures for reusing or recycling water.



Igor Messias (Environment)

# 15. BIODIVERSITY

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Because of its predominantly renewable generating matrix, Cemig devotes special attention to the conservation of biodiversity of the environments where it was inserted, since water and biodiversity are closely related. There is a legal commitment to recover, protect and conserve forests, rivers and fauna surrounding its operating areas.

Cemig's Biodiversity Policy<sup>95</sup> formalizes its commitment to the conservation of fauna and flora. Cemig's area of activity has two terrestrial hotspots<sup>96</sup>, Cerrado and Atlantic Forest, being the Company responsible for the management of more than 3,500 km<sup>2</sup> of freshwater reservoirs.

For each project and operating area, specialized studies are developed that characterize, evaluate and establish environmental programs to control, mitigate and compensate negative impacts and optimize positive ones, according to their nature. The studies are in compliance with general legal framework on environmental impacts. There is synergy between research, innovation and practice of solutions that, aligned with their competence, generate value to society and the biomes where it operates.

Cemig manages a large number of hydroelectric power plants. Because of that, the impacts on ichthyofauna have great breadth and environmental relevance and are therefore a matter of significant attention and control in the Company.

<sup>95</sup> Cemig's Biodiversity Policy is publicly available on its website. To access it, just click here.

<sup>&</sup>lt;sup>96</sup> Highly threatened areas of high biological relevance to the entire planet.

In addition to the hydroelectric power plants Cemig operates a thermoelectric plant, which generates different impacts, such as emission of atmospheric pollutants like NOx, SOx and particulate matter and greenhouse gases. Emissions caused by fuel combustion in the boilers, characterize the main impacts of this venture on biodiversity.

Likewise, since it is the largest electricity distributor in Brazil in the extension of transmission lines and networks, Cemig understands that the interference of the electric networks in the environment is critical and prioritizes actions to minimize the risks of disconnections and interruptions of energy, making a sustainable management of vegetation terrestrial habitats.

### **15.1 CARING FOR THE ICHTHYOFAUNA**

304-2 102-15

The construction and operation of a hydroelectric power plant causes impacts on aquatic fauna, related to reservoir formation (river damming), such as impediment of the free transit of migratory fish between their spawning, early development and feeding sites, among other effects on other elements of aquatic fauna and flora. Due to river damming, fish can concentrate on the foothills of the dams and access the suction pipe of the generating units. The operation of power plants exposes them to risk of injury and death.

The construction of the reservoir changes hydrological dynamics of the river, transforming an environment of bustling waters (lotic state) in an environment of calm waters (lentic state). This change favors the establishment of some species while it hinders the existence of others. The fauna to be settled is primarily dependent on preexisting species in the flooded region. The adaptations and particularities of each species will determine the level of success in adapting to modified habitats.

The areas affected by these occurrences are usually either downstream from the generating units or downstream from the spillway. In general, the impact is of short duration, but as it causes mortality, it could be irreversible.

As a way of managing this impact, Cemig has as practice the implementation of a transposition system for fish through studies to monitor the transposition of the dam.

Peixe Vivo Program was created in 2007 in order to minimize the impact on the icthyofauna, seeking solutions and management technologies that integrate Cemig's electricity generation with the conservation of native fish species and promote community involvement.

The positive impacts of the program are reflected in significant reduction of fish death and, consequently, of environmental fines. It is also reflected in improved management and conservation programs, which are based on solid scientific bases, and finally, in participation in the sustainability indexes of the company.

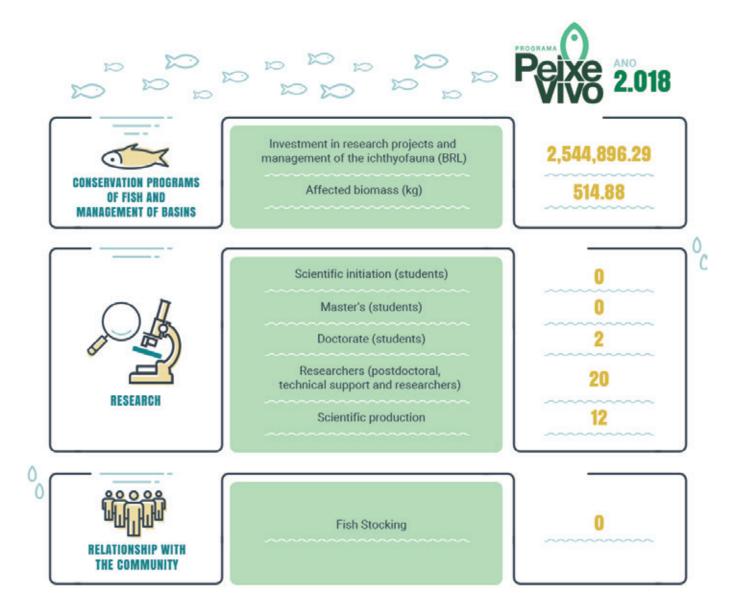
The actions of Peixe Vivo are based on three pillars:

- 1. Conservation and Management Programs, which aim to adopt the best practices for conservation of fish;
- 2. Research and Development, which broaden scientific knowledge on the icthyofauna and provide subsidies for more efficient conservation strategies; and
- 3. Relationship with the community, which disseminates actions and results of the program to society, seeking their involvement in the construction of a strategic planning.

In search of the continuous improvement of Cemig's environmental activities, Peixe Vivo Program carries out several research projects. Some of the projects are developed together with R&D Program of ANEEL. The remaining projects are carried out with the Company's own resources. During 2018, five research projects were executed, with own and R&D resources<sup>97</sup>. 12 works related to projects or actions of Peixe Vivo Program were published, presenting results of ongoing projects and projects that have already been concluded.

<sup>97</sup> R&D resources include those from ANEEL programs.

In 2018, research projects coordinated by Peixe Vivo team involved a total of 32 people from teaching and research institutions. Data on investment, number of surveys involved, among others, are detailed in the table below.



The human resources training is an important pillar of Peixe Vivo Program since these students will eventually develop scientific projects in the area, working in environmental agencies, NGOs and companies. With well-trained professionals, preservation of fish species will certainly be more effective over time.

This data display of scientific production considers all the results of the projects, presented in scientific congresses, papers published in national and international scientific journals, as well as monographs, dissertations and theses. In recent years, this production has increased as scientific projects progress in their development.

These works are bringing important new information to the scientific community on topics such as behavior, physiology, reproduction and ecology of native fish species. The partnerships developed with several national and foreign research institutions and universities are extremely important, since they make it possible to develop projects that are currently underway.

Peixe Vivo Program team evaluates the potential risks to the hydroelectric power plant operation through periodic monitoring and pre-maneuver monitoring to assess fish density and environmental conditions downstream of hydroelectric power plants.

A survey carried out by Cemig indicates that 83 species of fish were removed alive during the maintenance of generating units. The orders with the greatest number of species were Characiformes, Siluriformes and Perciformes. Within these three orders, the Anostomidae, Characidae, Cichlidae and Pimelodidae families accounted together for over 60% of the rescued species. Characidae had higher frequency of species rescued alive, while Pimelodidae, dead. Pimelodus maculatus was the species that occurred in the largest number of maneuvers, being considered one of the species most impacted by the operation and maintenance of Brazilian power plants.

Regarding perished species during the operation of Cemig Group's power plants from 2016 to 2018, the most impacted species is Pimelodus maculatus (mandi). In smaller quantity, the following species are mentioned: Loricariidae (cascudo), Serrasalmus brandtii (piranha), Trachelyopterus striatulus (maria-mole); Leporinus spp. (piau); Prochilodus spp. (curimba), as well as some piabas and mandizinhos / catfish.

This information, in addition to forma database, subsidizes corrective and operational actions related to environmental safety of the procedures performed. Aspects of the biology of fish species most affected by the procedures of maintenance of generating units are also evaluated, to better understand the relation between biological factors and the presence of these species downstream of the power plants.

In order to measure and monitor the impact caused on the fish fauna, Peixe Vivo Program created an Affected Biomass indicator, which sums up all biomass of dead fish (in kilograms) due to direct impacts caused by hydroelectric power plants during operation and maintenance of generating units. The annual limits for this indicator are established as a result of the historical analysis, seeking a continuous reduction.

The development and use of the methodology for assessing the risk of ichthyofauna ensured a 72% reduction in the monthly average of Affected Biomass, considering the current scenario of the power plant in operation, and also ensured a 97.7% reduction in the value of environmental fines charged due to the occurrence of fish deaths.

In 2018, the established limit of the Affected Biomass indicator was 859 kg, and the occurrences in the year totaled 515 kg, which was below the limit. In 2017, the Affected Biomass was 996.78 kg, 44% below the established limit. In 2016, the number calculated for this indicator was 1,771.25 kg, and the limit established for that year was 1,577 kg.

In addition to monitoring the impact on biodiversity, in 2018 a study was carried out to measure and evaluate the socio-environmental and economic impacts generated by the fish mortality in the rivers where Cemig operates.

It was concluded that a negative externality for the society is the reduction of fish volume, with consequent reduction in local income, as well a reduction of fishermen income. It is

also worth noting that there is a greater socioeconomic impact related to the amount of resources that do not enter the local economy in communities whose aquaculture activity is more relevant and are more socially vulnerable.

The amount withdrawn from the economy was calculated for the last three years of activity of the Peixe Vivo Program. The reflections of the reduction in the amount of Affected Biomass in the value withdrawn from the local economy were evident, as shown below:

	2016	2017	2018
Affected biomass (kg)	1,771.25	996.78	515.00
Value withdrawn from the economy (BRL)	13,558.49	7,646.07	3,950.05

In addition to efforts to reduce the amount of Biomass Affected, Cemig works to replenish the populations of the affected species through environmental breeding stations for native fish. Juvenile fishes (the name given to fish in the early stage of life) produced in these seasons are released in the basins where Cemig has ventures, performing "fish stocking" activities. Currently, "fish stocking" activities are carried out in two environmental stations, Itutinga and Machado Mineiro.

In 2018, 198,956 juvenile fishes were produced and released. During last year, a total of 26 "fish stocking" occurred in 16 municipalities of Minas Gerais.

Performance Indicators	2018	2017	2016	2015	2014	Purpose of the indicator
Rescue of fish in turbines (kg of fish rescued alive during generator unit drainage).	515	108	1,928.98	251.17	2.895.18	Measure the number of fish rescued in generator unit drainage
Repopulation of fish (Quantity of juvenile fishes released in reservoirs per year).	198,956	259,134	159,725	662,961	748,833	To measure the amount of juvenile fishes released in reservoirs.

### 15.2 CARE OF TERRESTRIAL HABITATS

Through its different subsidiaries, Cemig has programs to preserve fauna and flora of terrestrial habitats impacted by its generation, transmission and distribution activities. The Company develops specific initiatives to address the impacts inherent in the nature of these activities.

### **Management of vegetation**

The Vegetation Management Process has its activities developed in all phases of Cemig D's projects and installations - design, implementation, maintenance and deactivation of ventures. The objective is to reduce or eliminate negative impacts on plant formations, or even to enhance the positive impacts of the Electric Power System on the forest formations and biodiversity of Cemig's concession area.

The approach given to the Vegetation Management Process is that of a Preventive Maintenance, carried out with the intention to reduce the probability of failure (or interruption) of the service provided. In this process, periodic inspections are carried out in the electrical system and the necessary maintenance services are listed, including vegetation interventions.

Preventively, scheduled interventions are performed before the probable date of a failure to avoid occurrences. Interventions are carried out at predetermined intervals. based on knowledge about tree behavior and its response to interventions, both in urban and rural environments.

Another preventive and mitigating aspect of the process is the use of distribution network engineering to reduce interruptions caused by trees, especially in urban environments. The increasing use of protected and isolated networks seeks this reduction. At urban environments, the Company use for these networks a minimum standard of service with Protected Medium Voltage Networks and Isolated Low Voltage Networks. The search for technological improvement for this purpose is continuous, and should include in the network modalities for urban environments medium voltage networks with double layer of protection, whose tolerance to contact with grounded objects (such as trees) is greater, attenuating the effects of interaction.

Regarding the remediation of impacts caused by trees, the Company is prepared to deal with more severe climatic events, when the degree of risk presented by the vegetation is high. Through weather forecasting and monitoring systems, it is possible to allocate repair teams to the electrical system in order to quickly respond to failure events in order to reduce

the duration by which consumers remain without provision of electricity.

All information demands received by communication channels is analyzed and forwarded to the most appropriate treatment.

Mobile Laboratory of Tree Analysis (Lamanar, Laboratório Móvel de Análise de Árvores)

The main objective of this Laboratory is the development and calibration of a methodology of evaluation of tree health, having as support the instruments that compose it. Lamanar can be used by city halls and research institutions to improve the evaluation methodology developed by the R&D project 364 that inaugurated the Laboratory in 2015.

The laboratory operates inside a trailer equipped with devices that allow analysis of trunks and branches, internal visualization of tree trunks by mechanical waves, analysis of mechanical stress supported by trees affected by winds and visualization of its roots through electromagnetic radar. Also has devices for measuring distances, heights and log diameters. Through Lamanar, it is possible to better analyze the health of trees and monitor them over time, reducing the risks of occurrences in Cemig's electrical system caused by tree falls, as well as contributing to the improvement of professionals in research, teaching and management of urban trees.

### **Conservation Units**

304-1 304-3

Cemig, aiming to ensure conservation of biodiversity, maintains some areas of forest remnants of high conservation status and relevance to the biomes where they are inserted. In none of the areas maintained by Cemig was there, in 2018, any partnership with other groups or organizations in the protection or restoration of the areas.

Of these areas, there is a Private Natural Heritage Reserve (RPPN<sup>98</sup>), RPPN Galheiro, which has 2,695 hectares and is located in Perdizes (MG), near Nova Ponte HPP venture. The RPPN Galheiro has dense and well conserved native vegetation, composed of a mosaic of physiognomies, among them, semideciduous seasonal forest, gallery forest and Cerrado (savannah), besides small plots of anthropic areas, with remnants of exotic grassland. The latter, currently in the process of natural regeneration, account for only 1.04% of total reserve area. All actions carried out at RPPN Galheiro followed the Management Plan of the unit.

There was also a forest compensation process in Rio de Pedras SHP, covering an area of 4.0456 hectares, defined in accordance with IEF Ordinance No. 30, dated February 3rd, 2015. Compensation areas have a Phyto-physiognomy defined as Semidecidual Seasonal Forest and their vegetation is well conserved, with fragments in the middle stage of secondary succession, presenting two well-defined strata: canopy and understory. The average height of the canopy is approximately 11 meters and is represented by tree species of moderate amplitude.

At Irapé HPP, located in Capelinha (MG) - about 10 km from the power plant, a Recovery Plan for Degraded Areas (PRAD) was followed, maintaining 175 hectares out of 1,455 total hectares and planting 55,000 seedlings. The restoration of the area complies with the Technical Specification - ET-MG / CT-2017/008 and 100% of what was predicted was performed.

As of March 2019, there will be only maintenance activity of the areas (channel cleaning, fire maintenance, fence maintenance, ant and termite control, cover fertilization, replanting and irrigation).

### **Environmental guidelines and controls**

Measures to reduce the impacts of transmission and distribution networks

304-2

Cemig has developed an internal procedure of Environmental Guidelines and Controls that determines care and methods to be adopted when Transmission Lines and Networks are being build. The Company changes the layout of existing networks to avoid interference in areas of high tree density, or even reform electrical circuits in those areas, adopting higher technological standards.

In network projects or distribution lines in rural areas, Route Engineering privileges those routes that interfere as little as possible in forest fragments, but also adopts higher structures to minimize vegetation removal in the deployment of distribution lines.

<sup>98</sup> According to Federal Law No. 9985/2000, which establishes the National System of Conservation Units - SNUC.

In projects of transmission lines, networks and substations that compromise tourist, cultural or speleological heritage, there must be measures to eliminate impacts, such as alternative route, underground networks, isolated, higher structures, among others. If these measures cannot be taken over, other measures should be used to minimize impacts. For wildlife impacts, specific care is taken to remove bird nests in distribution networks and at substations, and other preventive actions are carried out to avoid the proximity of birds and small animals to the equipment.

### **Ciliar Reforestation Program**

304-1 304-4

Due to formation of large reservoirs of hydroelectric power plants, a large perimeter, usually devoid of forest formations, is created along its banks. When these formations exist, they consist of species adapted to a drier environment, therefore being poorly adapted to high soil moisture due to the elevation of the water table level and fluctuations of the reservoir level.

This new environment conformation creates the need for deployment, recovery and conservation of riparian forests surrounding the reservoirs to maintain ecological processes.

For almost 30 years, Cemig has been developing, in partnership with universities, several researches that support programs for the development of riparian forests around its reservoirs. Through the R&D Programs, the Company has sought to study and propose innovations in face of technological challenges of the electric sector. The partnership with rural producers around their reservoirs has been fundamental to the success of these actions.

In 2018, 31.96 hectares were reforested on the banks of Cemig reservoirs, with 19.24 hectares in the riparian forest of the São Simão HPP and 12.72 hectares in the riparian forest of Emborcação HPP. In addition to planting, Cemig carried out maintenance activities on 314.91 hectares of the riparian forests of the reservoirs of Rosal HPP and São Simão HPP - 221.59 hectares and 93.32 hectares, respectively.

#### 304-3

Cemig has worked to recover the riparian forest near Emborcação HPP, in accordance with the PRAD. In August 2018, Cemig started the Cemig - Aneel Research and Technological Development Project - R&D 602 entitled "Strategies to accelerate ecological succession in degraded areas around Emborcação HPP. Ecological services implemented by animals in favor of environmental restoration "

This project develops studies in the degraded areas of Emborcação HPP and aims to propose and test new techniques for the recovery of these areas, through the adoption of new technologies and installation of islands of ecological succession using fauna as a source of colonizing species.

The area is mostly characterized by low vegetation composed of exotic species of grass due to chemical and structural characteristics of the local soil, extremely depleted due to

intensive use at the time of dam's construction. In all, 92 containment basins have already been implanted for greater retention of rainwater and, consequently, feeding of the water table. Work is also continuously carried out to recover concrete channels installed in the area, in order to prevent new erosion gullies resulting from damage to these structures. About 10% of the area is reforested with dense arboreal vegetation.

The Company deactivated forest nurseries and forest seed laboratory. The acquisition of seedlings currently occurs to meet specific internal demands of projects in conjunction with municipal governments and other institutions.

Ecological integrity of surface waters undefined

Cemig is advancing the identification of opportunities and improvements by always developing environmental studies in partnerships with educational institutions and specialized companies that contribute to implement innovations.

In 2018, a study of the ecological integrity of surface waters was one of the main biodiversity initiatives carried out by Cemig, a component study of Cemig's 2018 Biodiversity Report. The study aims to implement the decision to establish a new methodology for water quality monitoring, seeking an integrative view of the lotic and dammed environments in the context of the river basin. In addition, this work presents the results of some impacts studied in Cemig, such as the presence of invasive species. The work is based on three pillars: (i) the ecohidromorphological conditions of the habitat; (ii) the physical and chemical conditions of the water; and (iii) characterization of the aquatic community structure.

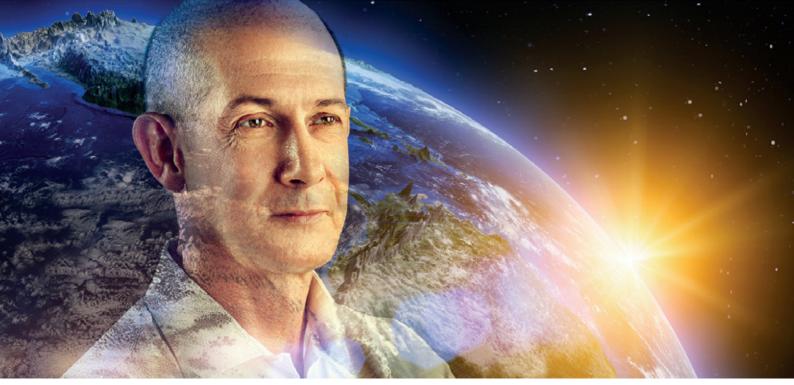
The hydrographic basins of Pará river, Santa Bárbara river and Velhas river, basins of Cajuru, Peti and Rio das Pedras SHPs, respectively, were the subject of the mentioned 2018 study. In summary, the following are the characteristics that best define the three areas: (i) the contribution basin of Peti SHP is the best preserved, but it suffers occasional pressures from mining activity and urban areas of the municipalities of Santa Bárbara and Barão de Cocais; (ii) the contribution basin of Rio de Pedras SHP is in an intermediate condition being less preserved than Peti but in a conservation state superior to Cajuru; (iii) the basin of Cajuru SHP, compared to others, is the more anthropized, with pasture being the predominant use (80%).

Also as a result of the study mentioned above, the number of species found in these regions and the list of those in the "Red List of the International Union for Conservation of Nature and Natural Resources" are presented below.

Hydrographic Basin	SHP	Number of species	Species and their respective categories in the Red List
		238 in the contribution basin	Aechmea bromeliifolia (Least Concern - LC)
		29 in the reservoir of Cajuru	Aeschynomene denticulata (LC)
			Alternanthera tenella (LC)
			Cuphea melvilla (LC)
			Dendropanax cuneatus (LC)
			Eugenia florida (LC)
Pará River	Cajuru		Hymenachne pernambucensis (LC)
Pala nivel	Cajulu		Mandevilla hirsuta (LC)
			Maytenus aquifolia (LC)
			Pfaffia glabrata (LC)
			Plantago Australis (LC)
			Tibouchina candolleana (LC)
			Xylopia Aromatica (LC)
			Xylopia brasiliensis (Near Threatened - NT)
		195 in the contribution basin	Alternanthera tenella (LC)
		26 in the Peti reservoir	Aspidosperma macrocarpon (LC)
			Dendropanax cuneatus (LC)
			Bowdichia virgilioides (NT)
			Eriope crassipes (LC)
			Eriope macrostachya (LC)
Santa Bárbara	Peti		Hymenachne pernambucensis (LC)
River			Lepidapioa chamissonis (NT)
			Oxalis cytisoides (LC)
			Panicum condensatum (LC)
			Pfaffia glabrata (LC)
			Piptadenia gonoacantha (LC)
			Siphoneugena densiflora (LC)
			Tibouchina candolleana (LC)

		212 in the contribution basin	Aechmea bromeliifolia (LC)
		22 in the Rio das Pedras reservoir	Alternanthera tenella (LC)
			Dendropanax cuneatus (LC)
			Dicliptera squarrosa (LC)
			Eriope macrostachya (LC)
Rio das Velhas	Rio das		Eugenia florida (LC)
nio das veinas	Pedras		Lavoisiera imbricata (LC)
			Lepidaploa chamissonis (NT)
			Maytenus rupestris (Vulnerable – VU)
			Pfaffia glabrata (LC)
			Piptadenia gonoacantha (LC)
			Tibouchina candolleana (LC)

Further details of the study are in the 2018 Biodiversity Report, Cemig's biannual publication, available here.



Marcelo de Deus Melo (Strategic Planning)

# **16. CLIMATE CHANGE**

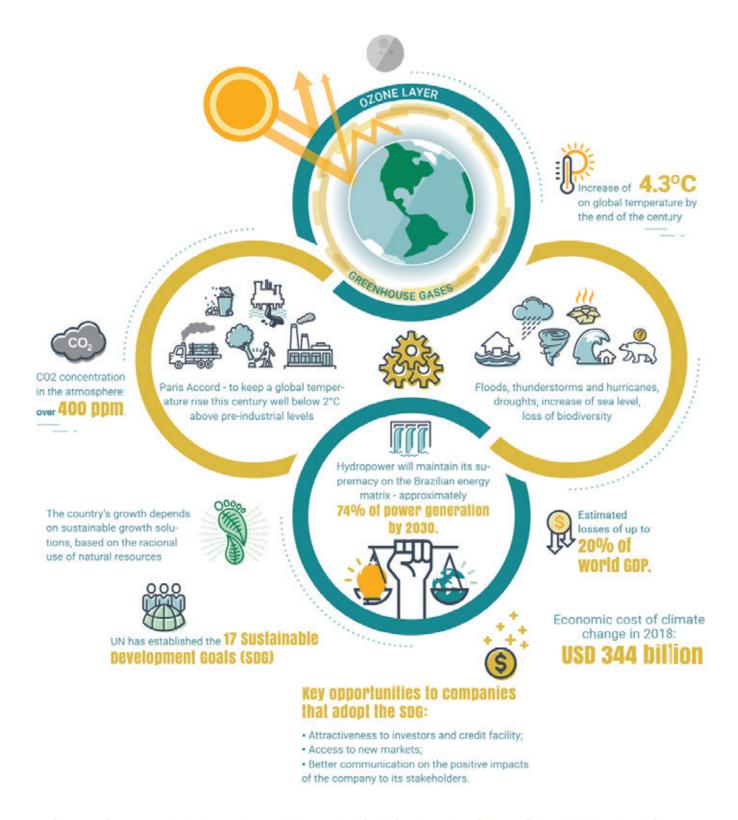
#### 103-1:305

The global relevance of discussions on the effects of climate change strengthens Cemig's approach to identifying business risks and opportunities, and intensifies the search for mitigation and adaptation solutions, avoiding risks and impacts to the Company's businesses.

Even though the Company has low GHG emissions, there is high-level leadership involvement in climate-related discussions, focusing on a more effective performance, as evidenced by the establishment of voluntary targets for (i) emissions reduction; (ii) electricity consumption; and (iii) energy losses.

Cemig identifies climate-related risks and opportunities that could potentially have a substantive impact on its business and seeks solutions to mitigate and adapt to the potential effects of climate change on its operations.

Corporate risk management is an integral process of Cemig's Corporate Governance practices, as presented in this Report. From 2019, risks became additionally classified by nature, one of which is Socio-environmental (associated with lack or inadequate environmental and social management, leading to impacts on the environment and society). This process also considers the potential effects of climate change on the business, which may hinder new ventures or expansion of productive capacity.



### 16. 1 CLIMATE-RELATED RISKS AND OPPORTUNITIES

201-2

In order to analyze the financial implications of climate-related risks and opportunities, Cemig defines timeframes to identify and assess strategic risks/opportunities - including those related to climate change. The table below shows the time horizons considered by Cemig to categorize its risks as short, medium or long-term.

Short-term risks: 0 to 2 years	It considers the risks that would already be occurring and/or those most likely to occur within 2 years.
	• Example: Risks of increase in average temperature.
	It considers the risks that can occur in up to 10 years.
	• Examples:
Medium-term risks: 2 to 10 years	i) Risk of changes in precipitation patterns and extreme variability in climatic patterns
	ii) Risk of increased severity of extreme weather events, such as floods
	iii) Carbon taxes
Long-term risks: 10 to 30 years	It considers risks pointed out by studies that can happen from 10 years in the future and onwards, based on the scenarios of changes in the climate.

Cemig considers a financial impact arising from climate-related risks to be substantial if there is a loss in the Company's net operating revenue of more than 1%. This metric is valid throughout the Company.

The following are the climate-related risk types identified by Cemig.

### **Regulatory Risks**

#### **CHANGES IN REGULATION**

In 2009, the National Climate Change Policy set a voluntary target to reduce Brazilian GHG emissions between 36.1% and 38.9% of the projected domestic GHG emissions for 2020.

Moreover, the Brazilian government ratified its participation in the Paris Agreement in 2016 by submitting its Nationally Determined Contribution (NDC), which outlined a commitment to reduce greenhouse gas emissions by 37% below 2005 levels by 2025, with a subsequent indicative contribution of reducing GHG emissions by 43% below 2005 levels by 2030.

The Company considers the increase in operating costs to be the main potential impact of this risk type and seeks to implement mitigation measures, attempting to find opportunities to expand its energy generation through low carbon renewable sources. Another way to mitigate this risk is through participation in sectorial associations such as the Brazilian Business Council for Sustainable Development (CEBDS), which promotes discussions on the risks associated with emerging regulations in Brazil.

#### **CARBON TAXES**

Cemig has a low-carbon energy matrix, however, it operates a fossil fuel-fired thermal plant, which could have its operations impacted in the event of the establishment of a carbon tax in Brazil. As a measure to mitigate this risk, the Company promotes initiatives to reduce Scope 1 emissions, since it evaluates that the tax would affect these emissions. The expenses resulting from a carbon tax could amount to BRL 20.2 million per year (worst case scenario).

#### **CAP-AND-TRADE SCHEMES**

The establishment of a cap-and-trade scheme in Brazil may require greater corporate planning by Cemig, regarding compliance with specific market regulations, especially in relation to emissions monitoring and verification. To mitigate this risk, Cemig seeks to identify projects that generate carbon credits and long-term contracts with verification and certification companies, thus reducing the likelihood of materialization of this risk for the Company.

Observing the economic risks linked to the Company's GHG emissions, a study was carried out in 2018 with the purpose of measuring and evaluating the impacts generated by the Company's GHG emitting activities. Based on the Environmental Priority Strategies (EPS) guidelines, developed by the Swedish Institute of Environmental Research IVL, the social cost of Cemig's GHG emissions were derived in the last two years, as follows:

**2017:** BRL 6,583,868.22 **2018:** BRL 4,793,910.30

### **Physical risks**

These phenomena are increasingly associated with the effects of unfavorable microclimate conditions, typical of large urban centers. Management methods aim to reduce the magnitude of this risk in the medium term by means of preventive adaptation measures such as urban forestation management via pruning, the operation of weather stations and the meteorological radar, which accurately predicts the occurrence and intensity of storms, and an emergency plan that allocates maintenance teams for the rapid restoration of energy supply.

The occurrence of intense rainfall in a short period of time, accompanied by wind and lightning, can cause physical damages to power transmission and distribution facilities, leading to service interruptions and increase in Cemig's costs, due to consumer reimbursement (DEC and FEC indicators).

#### CHANGE IN PRECIPITATION PATTERNS

Climate change may alter seasonal precipitation patterns, with extreme rainfall events and more pronounced drought, as well as changes in their geographical distribution. In addition, there may be alterations in the average amount of rainfall, changing the amount of water that reaches the hydroelectric power plants reservoirs. Since Cemig's power generation is mainly hydraulic, these changes may reduce generation capacity.

Hydrological risks are managed considering the randomness of climatic phenomena without taking the effects of climate change into account. In order to do so, Cemig has a specific organizational structure that is fully dedicated to the subject and supports the decisions of the Company's risk management committees, whose purpose is to efficiently handle corporate risks involving operational, commercial, financial and regulatory aspects of the Company, particularly in the sectoral scenario of tariff adjustment and hydrological restrictions.

#### **CHANGES IN AVERAGE TEMPERATURE**

Climate change may cause an increase in average temperatures and changes in rainfall and drought regimes and, indirectly, lead to some risks to the power transmission system, as prolonged drought conditions increase the risk of fire.

Fires, within or next to easement ranges, may lead to unavailability of transmission lines. To mitigate this risk, Cemig regularly inspects and cleans its transmission lines to maximize its safety and availability of the transmission functions (always limited to minimal removal of vegetation, avoiding pruning in places where there is no interference with the transmission lines).

### **Other Risks**

#### CHANGE IN CONSUMER BEHAVIOR

Higher temperatures can cause an increase in electricity consumption and overload the electricity distribution system in the most critical regions of the State of Minas Gerais, and could lead to lower availability of energy supply to consumers in these regions. This risk is managed by carrying out electrical system diagnosis to identify the need for expansion works, monitoring operational conditions, and prioritizing works.

### **16.2 CLIMATE STRATEGY**

#### 103-2:305

Cemig's strategy for mitigating, adapting and disseminating the topic to society and its investors is made clear in its Commitment to Climate Change (10 Climate Initiatives), stated on 12/01/2011 by the Board.

Following the strategic principles outlined in Cemig's Environmental Policy, presented in the chapter on Environmental Responsibility, the document lists the efforts and lines of action adopted by the Company:

- generation of energy from renewable sources;
- creation of the first Brazilian ESCO (Energy Service Company) certified by ISO 9001 and linked to an energy concessionaire;
- implementation of energy saving and energy efficiency projects;
- operating in the natural gas sector;
- investment in new energy sources;

- integration of carbon risk into the technical-economic viability of new projects and in the merger & acquisition of assets;
- assessing climate-related risks and opportunities;
- improved process efficiency;
- reduction of emissions from transport;
- technology and innovation program.

The aim of the lines of action established in the Company's Commitment to Climate Change is to prepare Cemig for a low carbon economy by promoting an alignment of its business based on the assessment of climate risks and opportunities. The most important climate initiatives adopted in 2018 were within the scope of the Energy Efficiency Program, and the creation of the subsidiary Cemig GD.

The projects within the Intelligent Energy Program result in reductions in electricity consumption by end consumers due to the replacement of obsolete high consumption electrical equipment and to environmental education initiatives. In this way, the Program is a relevant tool for reducing GHG emissions in Cemig's value chain. In 2018, these projects avoided the emission of 95,571 tCO2e.

### **Cemig GD**

Cemig GD aims to implement, in the short term and through partnerships with the private sector, distributed generation power plants in Minas Gerais to serve consumers in the industrial and commercial segments that do not yet have the option of acquiring energy in the free energy market.

Cemig GD projects combine the development of clean and renewable energy generation with economic benefits for consumers who will have access to electricity at competitive prices compared to the tariffs they pay today. Energy generation from alternative sources such as wind power, small hydroelectric generating plants, solar, cogeneration, among others, is a worldwide trend and showcase society's commitment with GHG emissions reduction.

### **CDM Projects**

Concerning the Clean Development Mechanism (CDM) projects, Cemig has projects in different stages to obtain Certified Emissions Reduction (CERs) for hydroelectric power plants (HPPs and SHPs) and solar power plants, as shown in the table below.

Reference	Project	Status	Estimation of annual CO2eq reduction (t)	Credit Period	Credits Issued	Traceability
3898	SPE Guanhães, 4 SHPs, 44 MW	Registered	62,949	Jan/13 to Jan/20 (Renewable)	-	Link
3922	Baguari HPP, 140 MW	Registered	65,532	Apr/11 to Apr/18 (Renewable)	176,971	Link
4788	Cachoeirão SHP, 27 MW	Registered	23,444	Feb/12 to Feb/19 (Renewable)	167,097	Link
9056	Solar Settesolar, 3 MW	Registered	942	Feb/13 to Feb/20 (Renewable)		Link
6382	Pipoca SHP. 20 MW	Registered	17,051	Dec/12 to Dec/19 (Renewable)		Link
9893	Paracambi SHP, 25 MW	Registered	33,993	Jul/14 to Jul/21 (Renewable)	2	Link
9282	Santo Antônio HPP, 3,568 MW	Registered	4,015,196	Jan/13 to Dec/22 (Fixed)	1,057,929	Link

For more details on the projects please access: https://cdm.unfccc.int/

### 16.3 EXTERNAL INITIATIVES AND ACKNOWLEDGMENTS

In order to strengthen its action on climate issues and promote its reputation as a responsible company, and following its strategic pillars, Cemig participates in external initiatives that address the issue of climate change. The most relevant initiatives are outlined below.

### **CDP**

Since 2007, Cemig responds to CDP, an international non-profit organization that provides a global environmental disclosure system. In its response, Cemig makes a rigorous assessment of climate-related risks and opportunities for its businesses. CDP is accounted as a management tool for the Company, considering a scenario of growth in the quality of information provided and initiatives consistent with carbon management.

In 2018, Cemig was listed among leading companies in climate change management and water security in Latin America, in the Climate Change and Water Security Programs, for the quality of information disclosed to investors and the global market. The recognition was granted by CDP Latin America.

This was the seventh consecutive year that CDP rewards the Company. The selection considered the level of detail of the responses based on criteria such as risk management, commitment to risk mitigation and initiatives to reduce greenhouse gas emissions. The better results indicate a high level of transparency in the disclosure of information related to the topics, providing investors with consistent content on climate change management and water security.

Cemig's response to CDP 2018 can be accessed on the CDP website.

### Simulation of an Emissions Trading scheme

In 2018, Cemig participated in the fifth operational cycle of the Emissions Trading Scheme Simulation project, an initiative of the Center for Sustainability Studies (GVces), of the São Paulo School of Business Administration of Fundação Getúlio Vargas (EAESP/FGV).

The purpose of this project is to generate knowledge from the business sector about the operation of an emissions trading system, one of the main economic instruments of greenhouse gas emission mitigation policies already implemented in several countries. With this project, Cemig is having the opportunity to:

- Participate in training, meetings, and debates relating the agenda to business strategy, in addition to exchanging experience with other companies on lessons learned, challenges and opportunities;
- Operate on the emission permits trading platform learning to reconcile emissions management and market strategy;
- Participate in exercises to define sectorial benchmarks based on carbon intensity indicators; and
- Receive support for the internalization of the topic in the Company's business agenda and for involvement of the financial area.

Thus, Cemig is preparing to comply with a possible future carbon pricing system in Brazil.

Brazilian Business Council for Sustainable Development (CEBDS)
In line with Cemig's position on climate issues, the Company is affiliated with CEBDS, a non-profit civil society association that promoted initiatives based on the principles of sustainable development, having a seat in the Energy and Climate Change Chamber (CTClima) and composing the institution's Board of Leaders.

At CTClima, Cemig participates in meetings, discussions and debates aimed at the development and implementation of corporate climate change mitigation and adaptation solutions. The Chamber also promotes a dialogue between the public and private sectors in order to contribute to the preparation and improvement of public policies on climate change, energy efficiency and renewable energy.

In the Board of Leaders, Cemig is represented by its Vice President, who shares the Company's vision with other leaders of large Brazilian corporations, with different spheres of government and with society. The issues dealt with in the Board are directly related to climate change and the low carbon economy. In 2018, carbon pricing was one of the most discussed topics in CEBDS.

### **Direct Engagement with Policy Makers**

Cemig has also been engaging directly with policy makers through participation in legal discussion forums. At city level, the Company participates in the Municipal Committees on Climate Change and Eco-efficiency (CMMCE) of the cites of Belo Horizonte and Betim. In these committees, public and private initiative meet to discuss and propose local climate change mitigation and adaptation policies.

### **16.4 EMISSIONS**

On an annual basis, Cemig publishes its Greenhouse Gas (GHG) inventory, which enables the Company to identify its emission sources, quantify its total emissions and monitor the evolution of emissions over time.

The GHG inventory serves as a management tool that allows the evaluation of the organization's impact on the global climate system. The information presented in the annual inventory is key to (i) effective management of the company's emissions, being the basis for the evaluation of climate-related risks and opportunities; (ii) setting emission reduction targets; (iii) prioritization and monitoring of mitigation activities; and (iv) participation in programs to communicate climate risk management and to compare the Company's performance against peers.

When preparing the inventory, the Company identifies direct and indirect GHG emission sources and sinks associated to its operations, listing them under specific categories organized by scopes. Below, each of the three scopes defined by the GHG Protocol is outlined and the emissions accounted for in the Company's 2018 inventory are indicated.

- Scope 1: Direct GHG emissions from sources that are owned or controlled by the organization
- **Scope 2:** Indirect GHG emissions from the generation of purchased electricity that is consumed by the organization.
- **Scope 3:** Optional reporting category that includes all other indirect emissions not included in Scope 2. These emissions are a consequence of the organization's activities, but occur from sources that do not belong or are not controlled by the Company.

OCemig's 2018 inventory included CO2, CH4, N2O and SF6 emissions, according to the emission sources identified and data availability. Additionally, the inventory also accounted for CO2 emissions from renewable sources.

At Cemig, CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O e SF<sub>6</sub> emissions are generated by the following activities:

 CO<sub>2</sub>: generated by fossil fuel (such as diesel, natural gas, kerosene and liquefied petroleum gas) burning at mobile and stationary sources. In addition, there are CO2 emissions related to waste processing and use of agricultural fertilizers;

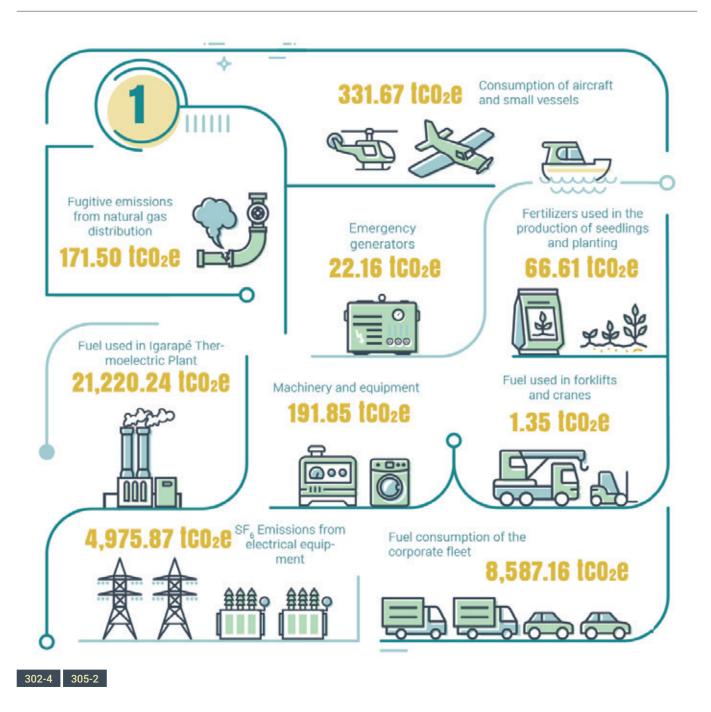
- CH<sub>4</sub>: generated by fuel burning at mobile and stationary sources, fugitive emissions from natural gas distribution lines, and decomposition of organic matter in solid waste treatment processes;
- N<sub>2</sub>O: generated by fossil fuel (such as diesel, natural gas, kerosene and liquefied petroleum gas) burning at mobile and stationary sources. In addition, there are emissions of N2O related to the treatment of residues and the use of agricultural fertilizers; and
- **SF**<sub>6</sub>: generated by maintenance activities of energy transmission and distribution equipment, which use this gas as an insulator or to extinguish electric arcs. In these maintenance activities, the gas that was lost by fugitive emissions is replaced.

305-1

In 2018, Cemig's operations were responsible for direct emission (Scope 1) of 35,568.41  $tCO_2e$ , representing a 27.1% reduction compared to the previous year (2017 = 48,849  $tCO_2e$ ) and a reduction of 94.2% compared to the base year (2014 = 617,717  $tCO_2e$ ).

The Company's GHG emission sources (Scope 1) are presented in the infographic below.

### **Scope 1: Emission Sources**



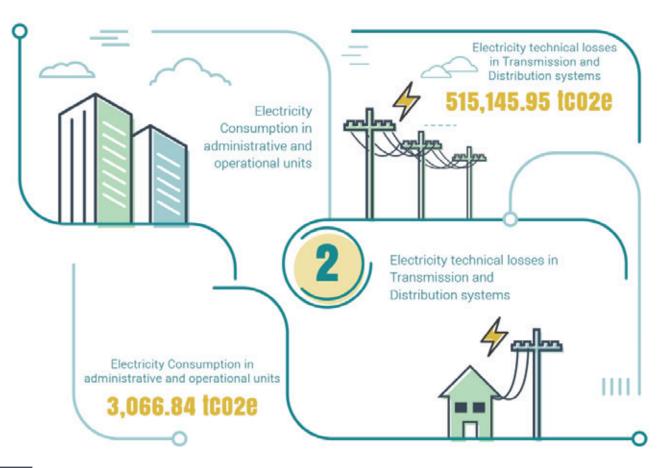
Indirect emissions related to energy acquisition (Scope 2, location-based) in 2018 totaled  $518,212.79~\rm tCO_2$ e, representing a 22.0% decrease in relation to the previous year (664,413 tCO2e in 2017) and a 39.6% decrease compared to the base year (858,014 tCO2e in 2014).

Regarding the total Scope 2 emissions, 99.4% refers to the total energy losses in the electricity transmission and distribution systems. There was an approximate reduction of 2.2% of these emissions in 2018 in relation to 2017. Also, in 2018, there was a 20% reduction in the average grid emission factor compared to the previous year (0.0927 tCO $_2$ e/MWh in 2017 vs 0.0742 tCO2e/MWh in 2018). These two factors explain the 22% reduction in Scope 2 GHG emissions (comparing 2018 and 2017 figures).

<sup>99</sup> National Interconnected System's annual average factor (tCO2/MWh): 0,1355 (2014), 0,1244 (2015), 0,0817 (2016), 0,927 (2017) e 0,0742 (2018).

The Company's GHG emission sources (Scope 2) are presented in the infographic below.

### **Scope 2: Emission sources**



305-4

Cemig uses two emissions intensity figures to assess its greenhouse gas emissions. The first relates scope 1 and 2 total emissions to the Company's total revenue ( $tCO_2e/BRL$ ) and the second relates scope 1 and 2 total emissions to the generated energy ( $tCO_2e/MWh$ ) in the reporting the year.

Regarding the first intensity figure, in 2018, Cemig's emissions intensity was 0.000025 tCO<sub>2</sub>e/BRL. This figure represents a reduction of 24% compared to 2017, when the emission intensity was 0.000033 tCO<sub>2</sub>e/BRL. This reduction is linked to an increase in gross operating revenue and Scope 1 and 2 emission reductions.

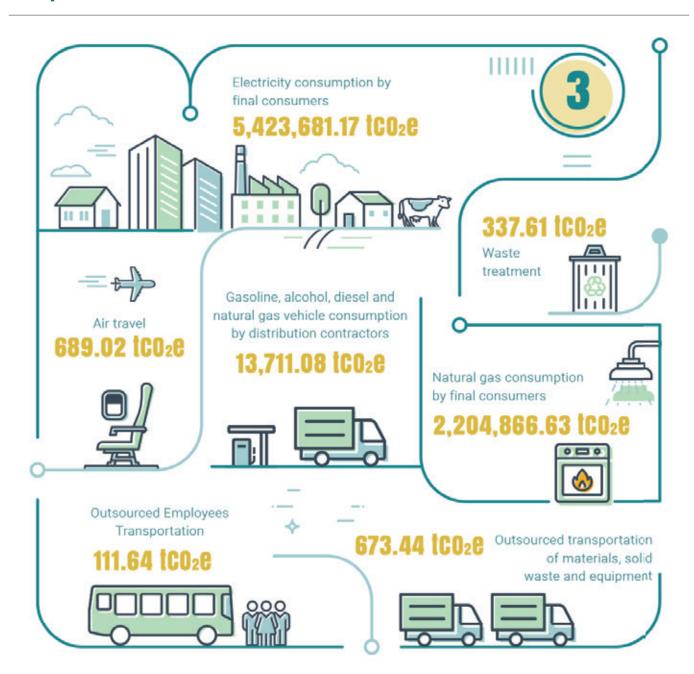
Regarding the second intensity figure, in 2018, Cemig's emissions intensity was 0.038 tCO<sub>2</sub>e/MWh. Compared to 2017, there was a 4.2% increase in this intensity figure, which was 0.036 tCO<sub>2</sub>e/MWh in 2017. This increase is due to a reduction in energy generation, since Cemig did not generate energy from the São Simão, Jaguara, Miranda and Volta Grande power plants, which had their concessions closed.

305-3

Other indirect emissions, which occurred in Cemig's value chain (Scope 3), totaled 7,644.130 tCO2e in 2018, representing a 9.1% reduction compared to the previous year (7,007,448 tCO2e in 2017) and a reduction of 32.5% comparted to the base year (11,332,770 tCO2e in 2014).

The Company's GHG emission sources (Scope 3) are presented in the infographic below.

### **Scope 3: Emission Sources**



Moreover, 3,326.23 tons of  $CO_2$  from biologically sequestered carbon were emitted (1,409.27  $tCO_2$  from biologically sequestered carbon in Scope 1, and 1,916.97  $tCO_2$  from biologically sequestered carbon in Scope 3).

Cemig's operations are also responsible for the emission of atmospheric pollutants such as sulfur dioxide (SO2), nitrogen oxides (NOx), and particulate matter (PM). The total emissions for each of these pollutants are shown in the table below.

	Total emiss	ions (t)*	
Year	SO <sub>2</sub>	NO <sub>x</sub>	MP
2014	3,048.71	251.08	386.77
2015	635.75	32.38	89.87
2016	56.37	7.33	0.29
2017	157.38	43.49	3.43
2018	112.69	28.62	2.18

<sup>\*</sup> Environmental measurement data for October/2017, operational data for 2018, calculated through the mass and energy balance

Sulfur dioxide ( $SO_2$ ) and nitrogen oxide ( $NO_x$ ) emissions come from the burning of fuels at Igarapé thermal power plant and in the Company's vehicles. The reduction of 28% in  $SO_2$  emissions and 34% in NOx compared to 2017 is due to the normalization of Igarapé's operations<sup>100</sup>, which, after stabilizing its reservoirs volumes, operates in a more controlled and efficient manner.

Particulate matter emissions are also generated from fossil fuel consumption at Igarapé thermal power plant and vehicle sources. In 2018, Igarapé's operations emitted only 1.92 tons of particulate matter due to the successful operation of the Electrostatic Precipitator. Regarding vehicular sources, PM emissions totaled 0.26 tons.

305-6

Emissions of ozone-depleting substances (ODS) are not relevant to the Company.

305-1 305-2 305-3 305-7

The ISO 14064 standard and specifications of GHG Protocol were used in the development of Cemig's 2018 GHG inventory. Emission factors and Global Warming Potential (GWP) values were taken from the IPCC (Intergovernmental Panel on Climate Change) assessment reports. Finally, the Company's operational control was chosen as the approach for emission consolidation.

<sup>&</sup>lt;sup>100</sup> Normalization occurred in 2018, after a year of emergency maneuvers and operation outside optimal efficiency ranges to meet demands not met by the hydroelectric facilities alone.

#### 103-3:305

The GHG inventory is subject to independent verification. Referenced data for the calculation of Scopes 1, 2 and 3 were collected through a centralized approach along with those responsible for its management, using the following means of collection:

- Existing records in the CEMIG ERP1 system;
- Records in corporate operating and control systems;
- Invoices;
- Contracts;
- Registration Worksheets.

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, that Cemig developed for units whose license has not yet been issued by the environmental agency. All these certifications are audited internally and by a third-party certifying organization. Cemig's 2018 GHG Inventory was prepared via CLIMAS, a calculation software developed by WayCarbon.

For more information on Cemig's GHG emissions, please see the GHG Inventory for 2018 and previous years here.



Valquiria Gonçalves (Corporate Services)

# 17. OTHER DATA

## 17.1 CONSOLIDATED SOCIAL STATEMENT

1 - Basis of calculations	2	018			2017	
1 - Basis of Calculations	Amoun	t (R\$ '000)		Am	ount (R\$ '000)	
Net revenue (NR)		22,2	56,217		21,7	11,690
Operational profit (OP)		2,8	74,213		2,6	42,407
Gross payroll (GP)		1,4	10,491		1,6	27,026
Internal social indicators	Amount	% of GP	% of	Amount	% of GP	% of
2) Internal social indicators	R\$ '000	* 01 GP	NR NR	R\$ '000	# 01 GP	NR
Food	84,075	5.96	0.38	90,99	5.59	0.42
Mandatory charges/costs on payroll	300,009	21.27	1.35	318,975	19.60	1.47
Private pension plan	80,314	5.69	0.36	85,178	5.24	0.39
Health	48,105	3.41	0.22	52,59	3.23	0.24
Safety and medicine in the workplace	22,986	1.63	0.10	24,87	1.53	0.11
Education	1,186	0.08	0.01	87	0.01	0.00

Training and professional development	21,538	1.53	0.10	21,847	1.34	0.10
Provision of or assistance for day-care centers	3,371	0.24	0.02	3,272	0.20	0.02
Profit sharing	3,569	0.25	0.02	8,281	0.51	0.04
Other expenses	14,433	1.02	0.06	15,27	0.94	0.07
Internal social indicators – Total	579,586	41.09	2.60	621,36	38.19	2.86
	Amount		Ŋ.	Amount		4
3) External social indicators	R\$ '000	% of OP	of NR	R\$ '000	% of OP	of NR
Education	1,37	0.05	0.01	1,176	0.04	0.01
Culture	10,57	0.37	0.05	16,369	0.62	0.08
Health and water infrastructure	1,838	0.07	0.01	416	0.02	0.00
Sport	4,035	0.14	0.02	3,313	0.13	0.02
Other donations/subsidies / ASIN project / Sport	25,999	0.92	0.12	2,063	0.08	0.01
Total contributions to society	43,812	1.55	0.20	23,337	0.89	0.12
Taxes (excluding obligatory charges on payroll)	11,663,617	413.26	52.38	9,920,165	375.42	45.69
Internal social indicators - Total	11,707,429	414.81	52.58	9,943,502	376.31	45.81
A Facility and the distance	Amount	% of OP	*	Amount	* -100	*
4) Environmental indicators	R\$ '000	* 01 OP	of NR	R\$ '000	% of OP	of NR
Related to the company's operations	86,245	3.06	0.39	38,311	1.45	0.18
Total investment in the environment	86,245	3.06	0.39	38,311	1.45	0.18
As to setting of annual targets to minimize toxic	(X) has no targets	( ) n 51-7: targ	5% of	(X) has no targets	( ) meets 51-75 targets	% of
waste and consumption in general during operations, and increase efficacy of use of natural resources, the company:						
	( ) meets 0-50% of targets	( ) n 76-10 targ	10% of	( ) meets 0-50% of targets	( ) meets 76-100 targets	)% of
5) Workforce indicators	201	8		20	017	
Number of employees at end of period			6,083			5,864
Number of hirings during period			332			27
Number of outsourced employees			316			333
Number of interns			242			227
Employees' levels of schooling						

- University and university extension	1,352	1,352
- Secondary	4,371	4,371
- Primary	141	141
Number of employees over 45 years old	3,232	3,027
Number of women employed	805	752
% of supervisory positions held by women	39.06%	39.66%
Number of African-Brazilian employees	302	290
% of supervisory positions held by African- Brazilians	4.11%	3.68%
Number of employees with disabilities	188	74

# **17.2 GRI CONTENT INDEX**

Disclosure GRI	Description	URL	Reasons for oimission
GRI 101: FOUNDAT			
GRI 203: INDIRECT			
GRI 305: EMISSION			
GRI 102; GENERAL	DISCLOSURES, 2016		
1. Organizational p	rofile, 2016		
		Introduction	
102-1	Name of the organization	Profile	
102-2	Activities, brands, products, and services	Profile	
102-3	Location of headquarters	Profile	
102-4	Location of operations	Profile   Location of operations	
102-5	Ownership and legal form	Profile	
		Costumers and consumers	
102-6	Markets served	Market evolution	

		Profile   Main business segments
		Profile   Main business segments
102-7	Scale of the organization	Operating income
		Workforce profile
		Workforce profile
102-8	Information on employees and other workers	Workforce profile
102-9	Supply chain	Main monitoring items and indicators
102-10	Significant changes to the organization and its supply chain	Investments in generation transmission and distribution and disinvestment program
102-10	Significant changes to the organization and its supply chann	Investments in generation, transmission and distribution and disinvestment program
		Risk management (corporate and socio- environmental risks and opportunities)
102-11	Precautionary Principle or approach	Identification and management of environmental and social impacts
102-12	External initiatives	Introduction
102-13	Membership of associations	Participation in associations
2. Strategy, 2016		
102-14	Statement from senior decision-maker	Message from Management
102-14	Statement from senior decision-maker	Message from Management  Risk management (corporate and socio- environmental risks and opportunities)
102-14	Statement from senior decision-maker	Risk management (corporate and socio-
102-14	Statement from senior decision-maker  Key impacts, risks, and opportunities	Risk management (corporate and socio- environmental risks and opportunities)  Risk management (corporate and socio- environmental risks and opportunities)
		Risk management (corporate and socio- environmental risks and opportunities)  Risk management (corporate and socio- environmental risks and opportunities) l Cemig's risk management process
		Risk management (corporate and socio- environmental risks and opportunities)  Risk management (corporate and socio- environmental risks and opportunities) I Cemig's risk management process  Technology and innovation (R&D, Energy, Alternatives, Open Innovation)
	Key impacts, risks, and opportunities	Risk management (corporate and socio- environmental risks and opportunities)  Risk management (corporate and socio- environmental risks and opportunities)   Cemig's risk management process  Technology and innovation (R&D Energy Alternatives, Open Innovation)  Diversity, Equal Opportunities and Human Rights
102-15	Key impacts, risks, and opportunities	Risk management (corporate and socio- environmental risks and opportunities)  Risk management (corporate and socio- environmental risks and opportunities)   Cemig's risk management process  Technology and innovation (R&D Energy Alternatives, Open Innovation)  Diversity, Equal Opportunities and Human Rights
102-15 3. Ethics and Integ	Key impacts, risks, and opportunities	Risk management (corporate and socio- environmental risks and opportunities)  Risk management (corporate and socio- environmental risks and opportunities)   Cemig's risk management process  Technology and innovation (R&D, Energy Alternatives, Open Innovation)  Diversity, Equal Opportunities and Human Rights  Caring for the Ichthyofauna
3. Ethics and Integ	rity, 2016, 2016  Values, principles, standards, and norms of behavior  Mechanisms for advice and concerns about ethics	Risk management (corporate and socio- environmental risks and opportunities)  Risk management (corporate and socio- environmental risks and opportunities) I Cemig's risk management process  Technology and innovation (R&D. Energy, Alternatives, Open Innovation).  Diversity, Equal Opportunities and Human Rights  Caring for the Ichthyofauna
3. Ethics and Integ 102-16 102-17	rity, 2016, 2016  Values, principles, standards, and norms of behavior  Mechanisms for advice and concerns about ethics	Risk management (corporate and socio- environmental risks and opportunities)  Risk management (corporate and socio- environmental risks and opportunities) I Cemig's risk management process  Technology and innovation (R&D. Energy, Alternatives, Open Innovation).  Diversity, Equal Opportunities and Human Rights  Caring for the Ichthyofauna

102-20	Executive-level responsibility for economic, environmental, and social topics	Management   Board of Executive Officers	
102-22	Composition of the highest governance body and its committees	Governance model and key practices	
		Workforce profile	
102-23	Chair of the highest governance body	Governance model and key practices	
102-24	Nominating and selecting the highest governance body	Management I Board of Directors	
102-25	Conflicts of interest	Management I Board of Directors	
102-26	Role of highest governance body in setting purpose, values, and strategy	Cemig's Strategy	
102-27	Collective knowledge of highest governance body	Management I Board of Directors	Until 2018, Cemig had no work in place to improve the collective knowledge of the Board of Directors on environmental, economic and social topics. The Company plans to verify the suitability of this initiative and submit to the approval of the Board of Directors, for implementation in up to 5 years.
102-28	Evaluating the highest governance body's performance	Management J Board of Directors  Management J Board of Directors	
102-29	Identifying and managing economic, environmental, and social impacts	Risk Management (corporate and socio- environmental risks and opportunities), l Cemig's risk management process	
102-30	Effectiveness of risk management processes	Risk Management (corporate and socio- environmental risks and opportunities) L Cemig's risk management process	
102-31	Review of economic, environmental, and social topics	Risk Management Risk Management (corporate and socio-environmental risks and opportunities)   Cemig's risk management process	
102-33	Communicating critical concerns	Management J Board of Directors	
102-35	Remuneration policies	Management	
5. Stakeholder enga	agement, 2016		
102-40	List of stakeholder groups	Boundaries of the report and materiality	
102-41	Collective bargaining agreements	Labor and Union practices	
102-42	Identifying and selecting stakeholders	Boundaries of the report and materiality	
102-43	Approach to stakeholder engagement	Boundaries of the report and materiality  Relationship with consumers	
100.41			
102-44	Key topics and concerns raised	Boundaries of the report and materiality	

102-22	Composition of the highest governance body and its committees	Governance model and key practices  Workforce profile	
102-23	Chair of the highest governance body	Governance model and key practices	
102-24	Nominating and selecting the highest governance body	Management   Board of Directors	
102-25	Conflicts of interest	Management I Board of Directors	
102-26	Role of highest governance body in setting purpose, values, and strategy	Cemig's Strategy	
102-27	Collective knowledge of highest governance body	Management   Board of Directors	Until 2018, Cemig had no work in place to improve the collective knowledge of the Board of Directors on environmental, economic and social topics. The Company plans to verify the suitability of this initiative and submit to the approval of the Board of Directors, for implementation in up to 5 years.
102-28	Evaluating the highest governance body's performance	Management   Board of Directors  Management   Board of Directors	
102-29	Identifying and managing economic, environmental, and social impacts	Risk Management (corporate and socio- environmental risks and opportunities). L Cemig's risk management process	
102-30	Effectiveness of risk management processes	Risk Management (corporate and socio- environmental risks and opportunities). L Cemig's risk management process	
102-31	Review of economic, environmental, and social topics	Risk Management Risk Management (corporate and socio-environmental risks and opportunities) I Cemig's risk management process	
102-33	Communicating critical concerns	Management I Board of Directors	
102-35	Remuneration policies	Management	
5. Stakeholder eng	agement, 2016		
102-40	List of stakeholder groups	Boundaries of the report and materiality	
102-41	Collective bargaining agreements	Labor and Union practices	
102-42	Identifying and selecting stakeholders	Boundaries of the report and materiality	
102-43	Approach to stakeholder engagement	Boundaries of the report and materiality	
		Relationship with consumers	
102-44	Key topics and concerns raised	Boundaries of the report and materiality	

6. Reporting pra	ctice, 2016	
02-45	Entities included in the consolidated financial statements	Boundaries of the report and materiality
102-46	Defining report content and topic Boundaries	Boundaries of the report and materiality
02-47	List of material topics	Boundaries of the report and materiality
02-48	Restatements of information	Introduction
02-49	Changes in reporting	Boundaries of the report and materiality
		Boundaries of the report and materiality
02-50	Reporting period	Introduction
02-51	Date of most recent report	Introduction
02-52	Reporting cycle	Introduction
02-53	Contact point for questions regarding the report	Introduction
102-54	Claims of reporting in accordance with the GRI Standards	Introduction
02-55	GRI content index	GRI Content Index
02-56	External assurance	Introduction
200 SERIES: ECONOMIC TOPICS, 2016		
3RI 201: ECONO	MIC PERFORMANCE , 2016	
03-1:201	Explanation of the material topic and its Boundary	Remuneration, Benefits and Preparation for Retirement
03-2:201	The management approach and its components	Management   Board of Executive Officers
03-3:201	Evaluation of the management approach	Management   Board of Executive Officers
		Distribution of value added
		Corporate citizenship and philanthropy
201-1	Direct economic value generated and distributed	Corporate citizenship and philanthropy
		Social Investments
		Social Investments
201-2	Financial implications and other risks and opportunities due to climate change	Climate-related risks and opportunities
201-3	Defined benefit plan obligations and other retirement plans	Remuneration, benefits and preparation for retirement

GRI 202: MARKET	F PRESENCE, 2016	
103-1:202	Explanation of the material topic and its Boundary	Boundaries of the report and materiality
		Remuneration, benefits and preparation for retirement
103-2:202	The management approach and its components	Remuneration, benefits and preparation for retirement
103-3:202	Evaluation of the management approach	Remuneration, benefits and preparation for retirement
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	Remuneration, benefits and preparation for retirement
103-1:203	Explanation of the material topic and its Boundary	Boundaries of the report and materiality
		Technology and innovation (R&D. Energy, Alternatives, Open Innovation).
103-2:203	The management approach and its components	Technology and innovation (R&D, Energy Alternatives, Open Innovation)
Technology and Alternatives. Op	Technology and innovation (R&D. Energy. Alternatives, Open Innovation)	
103-3:203	Evaluation of the management approach	Technology and innovation (R&D. Energy Alternatives, Open Innovation)
		Investments in generation, transmission and distribution and disinvestment program
203-1	Infrastructure investments and services supported	Corporate citizenship and philanthropy
	DEMENT DEACTIONS 2016 (4)	Social Investments
	REMENT PRACTICES, 2016 (*)	
204-1	Proportion of spending on local suppliers	Main monitoring items and indicators
GRI 205: ANTI-CO	PARUPTION, 2016	
		Boundaries of the report and materiality
103-1:205	Explanation of the material topic and its Boundary	Ethics and Transparency
		Ethics and Transparency
103-2:205	The management approach and its components	Ethics and Transparency
103-3:205	Evaluation of the management approach	Ethics and Transparency
205-1	Operations assessed for risks related to corruption	Ethics and Transparency

205-2	Communication and training about anti-corruption policies and procedures	Ethics and Transparency	Information not available. Cemig has data available on the number of employees trained and total training hours on anti-corruption by its employees and third parties. The breakdown of these data by functional category is not available in the company yet. Cemig has been working on including this breakdown in its monitoring processes and the forecast is that the data will be available in two years.
205-3	Confirmed incidents of corruption and actions taken	Ethics and Transparency	
GRI 206: ANTI-COM	MPETITIVE BEHAVIOR, 2016 (*)		
300 SERIES: ENVIR	CONMENTAL TOPICS, 2016		
GRI 301: MATERIA	LS, 2016		
103-1:301	Explanation of the material topic and its Boundary	Main monitoring items and indicators	
103-2:301	The management approach and its components	Environmental management	
102-3:301	Evaluation of the management approach	Environmental management	
301-1	Materials used by weight or volume	Ecoefficiency   Materials	
301-2	Recycled input materials used	Ecoefficiency   Materials	Not applicable to Cemig. There are still no alternatives available in the market for recycled materials, considering the most used materials by the company in the generation, transmission and distribution of energy. Cemig remains attentive to new solutions, seeking alternatives of components or fully recycled materials to use in its operations.
GRI 302: ENERGY, 2016			
103-1:302	Explanation of the material topic and its Boundary	Eco-efficiency   Energy	
103-2:302	The management approach and its components	Environmental strategy	

302-1	Energy consumption within the organization	Ecoefficiency   Energy
		Market evolution
302-2	Energy consumption outside of the organization	Ecoefficiency   Energy
202.4	Reduction of account of the control	Ecoefficiency   Energy
302-4	Reduction of energy consumption	Emissions
302-5	Reductions in contract contracts of available and contract	Energy Loss Management
302-5	Reductions in energy requirements of products and services	Balance of electric energy,
GRI 303: WATER AN	ND EFFLUENTS, 2016	
102 1-202	Evaluation of the metalic law is and its Baradan	Boundaries of the report and materiality
103-1:303	Explanation of the material topic and its Boundary	Environmental strategy
		Environmental strategy
103-2:303	The management approach and its components	Water resources management i Water Availability
103-3:303	Evaluation of the management approach	Water resources management   Water Availability
303-1	Water withdrawal by source	Water Consumption
303-2	Water sources significantly affected by withdrawal of water	Water Consumption
303-3	Water recycled and reused	Water Consumption
GRI 304: BIODIVER	SITY, 2016	
103-1:304	Evaluation of the manufal tonic and its Boundary	Boundaries of the report and materiality
103-1:304	Explanation of the material topic and its Boundary	Environmental strategy
103-2:304	The management approach and its components	Environmental strategy
103-3:304	Evaluation of the management approach	Environmental strategy
304-1	Operational sites owned, leased, managed in, or adjacent to, protected	Care of terrestrial habitats
304-1	areas and areas of high biodiversity value outside protected areas	Conservation Units
		Caring for the Ichthyofauna
304-2	Significant impacts of activities, products, and services on biodiversity	Care of terrestrial habitats
	30300000000	Environmental guidelines and controls - measures to reduce the impacts of transmission and distribution networks

		Care of terrestrial habitats
304-3	Habitats protected or restored	Ciliar reforestation program
304-3		Care of terrestrial habitats
		Ciliar reforestation program
304-4	IUCN Red List species and national conservation list species with	Care of terrestrial habitats
	habitats in areas affected by operations	Ciliar reforestation program
		Boundaries of the report and materiality
103-1:305	Explanation of the material topic and its Boundary	Environmental strategy.
		Climate change
103-2:305	The management approach and its components	Environmental strategy
		Environmental strategy
103-3:305	Evaluation of the management approach	Environmental strategy
		Emissions
305-1	Direct (Scope 1) GHG emissions	Emissions
		Emissions
305-2	Energy indirect (Scope 2) GHG emissions	Emissions
		Emissions
305-3	Other indirect (Scope 3) GHG emissions	Emissions
		Emissions
305-4	GHG emissions intensity	Emissions
305-5	Reduction of GHG emissions	Access to energy LEnergy Efficiency
305-6	Emissions of ozone-depleting substances (ODS)	Emissions
305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	Emissions
		Emissions
GRI 306: EFFLUENT	S AND WASTE, 2016 (*)	
306-1	Water discharge by quality and destination	Ecoefficiency_L Effluents
		Ecoefficiency_L Effluents
306-2	Waste by type and disposal method	Ecoefficiency_L Effluents
		Ecoefficiency   Effluents

306-3	Significant spills	Ecoefficiency   Effluents
		Ecoefficiency   Effluents
306-4	Transport of hazardous waste	Ecoefficiency   Effluents
306-5	Water bodies affected by water discharges and/or runof	Ecoefficiency   Effluents
GRI 307: ENVIRON	MENTAL COMPLIANCE, 2016	
103-1:307	Explanation of the material topic and its Boundary	Environmental Management
		Environmental responsibility
103-2:307	The management approach and its components	Environmental management
		Environmental management
103-3:307	Evaluation of the management approach	Environmental Compliance
007.1		Environmental Compliance
307-1	Non-compliance with environmental laws and regulations	Environmental Compliance
GRI 308: SUPPLIER	ENVIRONMENTAL ASSESSMENT, 2016	
103-1:308	Explanation of the material topic and its Boundary	Boundaries of the report and materiality
103-1.308		Suppliers
103-2:308	The management approach and its components	Suppliers
103-3:308	Evaluation of the management approach	Suppliers
308-1	New suppliers that were screened using environmental criteria	Suppliers
308-2	Negative environmental impacts in the supply chain and actions taken	Environmental and social performance of suppliers
	regulite cirricimental impacts in the supply circin and actions taken	Environmental and social performance of suppliers
400 SERIES: SOCIA	L TOPICS, 2016	
GRI 401: EMPLOYM	ENT, 2016	
		Boundaries of the report and materiality
103-1:401	Explanation of the material topic and its Boundary	Remuneration, benefits and preparation for retirement
103-2:401	The management approach and its components	Remuneration, benefits and preparation for retirement
103-3:402	Evaluation of the management approach	Remuneration, benefits and preparation for retirement
		Workforce profile
401-1	New employee hires and employee turnover	Workforce profile

401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Remuneration, benefits and preparation for retirement  Remuneration, benefits and preparation for retirement
		Remuneration, benefits and preparation for retirement  Remuneration, benefits and preparation
401-3	Parental leave	for retirement
GRI 402:LABOR/MA	NAGEMENT RELATIONS, 2016 (*)	
402-1	Minimum notice periods regarding operational changes	Labor and Union practices
GRI 403: OCCUPAT	IONAL HEALTH AND SAFETY, 2016	
100 1.400		Boundaries of the report and materiality
103-1:403	Explanation of the material topic and its Boundary	Occupational safety, occupational health and well-being (SSO&BE)
103-2:403	The management approach and its components	Occupational safety, occupational health and well-being (SSO&BE)
103-3:403	Evaluation of the management approach	Occupational safety, occupational health and well-being (SSO&BE)
403-1	Workers representation in formal joint management—worker health and safety committees	Occupational safety, occupational health and well-being (SSO&BE)
		Occupational safety, occupational health and well-being (SSO&BE)
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Occupational safety, occupational health and well-being (SSORBE)
		Occupational safety, occupational health and well-being (SSO&BE)
403-4	Health and safety topics covered in formal agreements with trade unions	Labor and Union practices
GRI 404: TRAINING	AND EDUCATION, 2016	
		Boundaries of the report and materiality
103-1:404	Explanation of the material topic and its Boundary	Remuneration, benefits and preparation for retirement
		Perfomance Management
		Remuneration, benefits and preparation for retirement
103-2:404	The management approach and its components	Perfomance Management
		Perfomance Management   Perfomance Evaluation
103-3:404	Evaluation of the management approach	Remuneration, benefits and preparation for retirement
		Perfomance Management

404-1	Average hours of training per year per employee	Organizational learning	
404-1	Average nours of training per year per employee	Organizational learning	
		Remuneration, benefits and preparation for retirement	
404-2	Programs for upgrading employee skills and transition assistance programs	Organizational learning	
		Organizational learning	
404-3	Percentage of employees receiving regular performance and career development reviews	Perfomance Management   Perfomance Evaluation	
GRI 405: DIVERSITY	Y AND EQUAL OPPORTUNITY, 2016 (*)		
		Workforce profile	
		Workforce profile	
405-1	Diversity of governance bodies and employees	Workforce profile	
		Workforce profile	
		Workforce profile	
405-2	Ratio of basic salary and remuneration of women to men	Remuneration, benefits and preparation for retirement	
GRI 406: NON-DISCRIMINATION (*)			
406-1	Incidents of discrimination and corrective actions taken	Diversity, Equal Opportunities and Human Rights	
GRI 407: FREEDOM	OF ASSOCIATION AND COLLECTIVE BARGAINING, 2016 (*)		
		Labor and Union practices	
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Environmental and social performance of suppliers	
GRI 408: CHILD LAE	BOR, 2016		
102.1.409	Contenting of the material tonic and its Coundary	Boundaries of the report and materiality.	
103-1:408	Explanation of the material topic and its Boundary	Suppliers	
103-2:408	The management approach and its components	Suppliers	
103-3:408	Evaluation of the management approach	Suppliers	
408-1	Operations and suppliers at significant risk for incidents of child labor	Environmental and social performance of suppliers	
GRI 409: FORCED OR COMPULSORY LABOR, 2016			
103-1:409	Explanation of the material topic and its Boundary	Boundaries of the report and materiality	
.00-1.403	expension of the material topic and its boundary	Suppliers	

103-2:409	The management approach and its components	Suppliers	
103-3:409	Evaluation of the management approach	Suppliers	
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Environmental and social performance of suppliers	
GRI 410: SECURIT	Y PRACTICES, 2016		
		Boundaries of the report and materiality	
103-1:410	Explanation of the material topic and its Boundary	Diversity, Equal Opportunities and Human Rights	
103-2:410	The management approach and its components	Diversity, Equal Opportunities and Human Rights	
103-3:410	Evaluation of the management approach	Diversity, Equal Opportunities and Human Rights	
410-1	Security personnel trained in human rights policies or procedures	Diversity. Equal Opportunities and Human Rights	Currently, Cemig does not have consolidated practices, and, therefore, has not yet defined or implemented these training for a lits security staff (third-parties and own employees). The Company is working to improve its policies and procedures, as well as monitoring processes. The forecast for its fully implementation is two years.
GRI 411: RIGHTS	OF INDIGENOUS PEOPLES , 2016 (*)		
GRI 412: HUMAN	RIGHTS ASSESSMENT, 2016		
100 1.410		Boundaries of the report and materiality	
103-1:412	Explanation of the material topic and its Boundary	<u>Diversity. Equal Opportunities and</u> Human Rights	
103-2:412	The management approach and its components	Diversity, Equal Opportunities and Human Rights	
103-3:412	Evaluation of the management approach	Diversity, Equal Opportunities and Human Rights	
412-1	Operations that have been subject to human rights reviews or impact assessments	Diversity, Equal Opportunities and Human Rights	
412-2	Employee training on human rights policies or procedures	Diversity, Equal Opportunities and Human Rights	

GRI 413: LOCAL CO	MMUNITIES, 2016	
103-1:413	Explanation of the material topic and its Boundary	Boundaries of the report and materiality
		Relationship with the Community
103-2:413	The management approach and its components	Territorial management I Human occupation in high-voltage overhead power lines areas
103-3:413	Evaluation of the management approach	Relationship with the Community
413-1	Operations with local community engagement, impact assessments, and development programs	Territorial management
		Territorial management
413-2	Operations with significant actual and potential negative impacts on local communities	Territorial management I Human occupation in high-voltage overhead power lines areas
GRI 414: SUPPLIER	SOCIAL ASSESSMENT, 2016	
103-1:414	Explanation of the material topic and its Boundary	Boundaries of the report and materiality
103-1,414		Suppliers
103-2:414	The management approach and its components	Suppliers
103-3:414	Evaluation of the management approach	Suppliers
414-1	New suppliers that were screened using social criteria	Suppliers
414-2	Negative social impacts in the supply chain and actions taken	Environmental and social performance of suppliers
GRI 415: PUBLIC P	DLICY, 2016 (*)	
415-1	Political contributions	Participation in associations
415-1		Ethics and Transparency
GRI 416: CUSTOME	R HEALTH AND SAFETY, 2016	
103-1:416	Explanation of the material topic and its Boundary	Boundaries of the report and materiality
	Expension of the material topic and its boundary	Safe use of Energy
103-2:416	The management approach and its components	Safe use of Energy
103-3:416	Evaluation of the management approach	Safe use of Energy
416-1	Assessment of the health and safety impacts of product and service	Safe use of Energy
	categories	Diversity, Equal Opportunities and Human Rights
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	Safe use of Energy

17-1	Requirements for product and service information and labeling	Safe use of Energy
17-2	Incidents of non-compliance concerning product and service information and labeling	Safe use of Energy
17-3	Incidents of non-compliance concerning marketing communications	Safe use of Energy
RI 418: CUST	OMER PRIVACY, 2016 (*)	
18-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Information Security

<sup>\*</sup> Non-material topic for 2018

### 17.3 GLOBAL COMPACT PRINCIPLES

#### GLOBAL COMPACT PRINCIPLES



FIGHT

corruption in all of its

bribery

forms, including

extorsion and



### 17\_4 SUSTAINABLE DEVELOPMENT GOALS





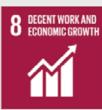
































### 17.5 ASSURANCE STATEMENT



#### ASSURANCE STATEMENT

## STATEMENT BY SGS ICS CERTIFICADORA LTDA. (SGS) REGARDING THE SUSTAINABILITY ACTIVITIES PROVIDED IN "SUSTAINABILITY REPORT 2018" GIVEN TO CEMIG

#### ASSURANCE NATURE AND SCOPE

SGS was hired by CEMIG. to render independent assurance of its Sustainability Report 2018. Based on assurance methodology of SGS Sustainability report, the certification scope includes the text and data related to GRI guidelines standard for sustainability report, including the disclosures.

The responsibility for information of "SUSTAINABILITY REPORT 2018" and its presentation lies on board and management of CEMIG. SGS does not take part of presentation in any material provided in said report. We are responsible for giving our opinion of the text, data, charts and statement within the certification scope, detailing the intention of informing the stakeholders of CEMIG.

The SGS group has developed a set of Assurance protocols for communicating the sustainability based on the best practices provided in GRI Sustainability Reporting Standards guide and the ISAE3000 assurance standard and sustainability report. These protocols give different options of assurance level depending on context and capacity of applicant organization – the CEMIG.

This report was assured through our protocol for assessing the content legitimacy and its alignment with aspects of requirements of *GRI Sustainability Reporting Standards*, according to the subject matters identified by CEMIG, through the process detailed in the said report. Based on such context, "THE SUSTAINABILITY REPORT 2018" is deemed as Core Option.

The assurance process has comprised (i) disclosure review, information and data provided in sustainability report draft, (ii) interview with key personnel both to both to understand data from report and to understand the pertinent management process to subject matters and (iii) review of supplementary documents submitted by CEMIG to SGS. The CEMIG accounting information and/or information provided in "SUSTAINABILITY REPORT 2018" was not assessed as part of this assurance process. The information is assessed in different audit processes.

#### INDEPENDENCE AND COMPETENCE STATEMENT

The SGS group is a worldwide leader in inspections, analysis and verifications which operates in 140 countries rendering services that includes management system certification, audits and training on quality, environment, social and ethic areas, as well as assurance of sustainability reports and verification of greenhouse gases. SGS reinforce its Independence from CEMIG becoming cleared from any interest conflict against the organization, its subsidiaries and stakeholders.

The assurance team was nominated based on knowledge, expertise and skills for this service and was composed of:

- An Auditor on Assurance of Sustainability Report, Lead Assessor of Greenhouse Gases (GHG), Lead Auditor on Socioenvironmental programs, Lead Auditor on Environmental Management System
- · An Audit Lead on Assurance of Sustainability Report, a Lead Assessor of Greenhouse Gases (GHG), Lead Auditor on Socioenvironmental Programs, Lead Auditor on ISO 26.001, Lead Auditor on Ecuador Principles.
- An Auditor on Assurance of Sustainability Report, Lead Assessor of Greenhouse Gases (GHG), Lead Auditor on Socioenvironmental programs, Lead Auditor on Environmental Management System

#### ASSURANCE OPINION

A wide assurance was applied for and the work performed was enough and adequate for a solid assurance. Regarding the verification performed against the methodology, process and data provided by CEMIG, we attest the information and data provided in SUSTAINABILITY REPORT 2018" are reliable and a true and balanced representation of the sustainability activities performed by CEMIG in 2018. The assurance team has the opinion the report can be used by stakeholders of company as part of its assessment processes. The organization has elected the core option, which meets its needs.

In our opinion, based on what was found in company office in Belo Horizonte and on documents provided by CEMIG, the report content meets fully the GRI standard requirements, including the one in Sectorial Appendix for Electric Utilities

#### RECOMMENDATIONS, FINDINGS AND CONCLUSIONS OF ASSURANCE

The CEMIG, "SUSTAINABILITY REPORT 2018" is aligned with the GRI Standard Guidelines for Sustainability Report, Core Option. It is important to highlight the material matters and their limits were properly set according to Reporting Principles upon review by materiality exercise in 2018, the disclosures over the report and/or reference list.

The report covers and comprise information of all matters deemed as material for the market and stakeholders. CEMIG has reported properly the disclosures 103-1 - Explanations of the material issues and their limits, 103-2 - Management approach and its components and 103-3 - Evaluation of the management approach for each material issue.

Concerning to contribution to improvement to development of sustainability reports in future and more effectiveness in assurance process, we recommend to CEMIG that:

- 1. The stakeholders master document was developed in 2009, it is recommended to updated it periodically in order to consider the current scenario and the relevance of each stakeholder group.
- The materiality is addressed to the main audiences accessing the report, especially investors and financial staff. It is recommended to review and file it continuously, not at the time of analysis and consider the information arising several markets, such as communication, field teams, ombudsman etc.

Finally, SGS congratulates CEMIG for the initiative of assuring its report.

Executed by and on behalf of SGS

Latien he freder

Fabian Peres Gonçalves

Business manager - Sustainability

SGS ICS Certificadora Ltda.

Mariana de Oliveira Klein

Lead Auditorfor Sustainability Report

Moriama de alimeak:

SGS ICS Certificadora Ltda.

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www.sgs.com

### 17.6 CREDITS FOR THIS EDITION

### **Editing and Coordination**

Cemig Corporate Communication Management – CE Cemig Investor Relations Management – RI Cemig Corporate Sustainability Unit – SE

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# **Consulting Firm Responsible for Planning, Data Collection, Analysis and Writing the Report**

WayCarbon Soluções Ambientais e Projetos de Carbono Ltda https://waycarbon.com/

### **Photographs**

Euler Junior/Comunicação Empresarial/Cemig

### **Translation**

Ana Laura Traduções

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### Cemig Geração e Transmissão S.A.

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#### **Custodian Bank**

Banco Itaú S.A.

### **Depositary Bank for ADRs**

Citibank Shareholder Services

102-53

For any suggestions or comments on this report, please email: sustentabilidade@cemig.com.br