



# ANNUAL & SUSTAINABILITY REPORT 2016

**CEMIG**

ESPAÇO RESERVADO PARA LEGENDA

MAIN INDICATORS

G4-9	G4-22	G4-23	EU1	EU4	EU28	EU29	EN31	EN15	EN8	LA1	LA7	LA10
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## CEMIG – MAIN INDICATORS

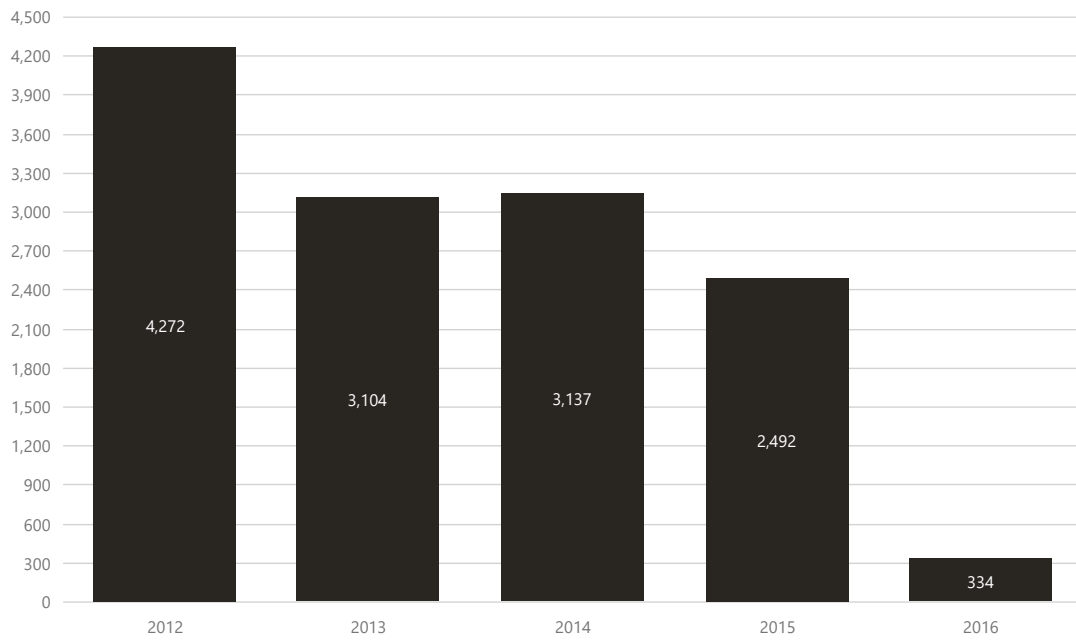
Financial data ('Economic dimension', below – in R\$) are consolidated, in accordance with IFRS (International Financial Reporting Standards). The other figures are global totals for the holding company, Companhia Energética de Minas Gerais S.A. ('Cemig'), and its wholly-owned subsidiaries, Cemig Distribuição S.A. ('Cemig D') and Cemig Geração e Transmissão S.A. ('Cemig GT'), reported according to the Global Reporting Initiative (GRI)

standards  Note: For more on the GRI methodology see: [www.globalreporting.org](http://www.globalreporting.org)

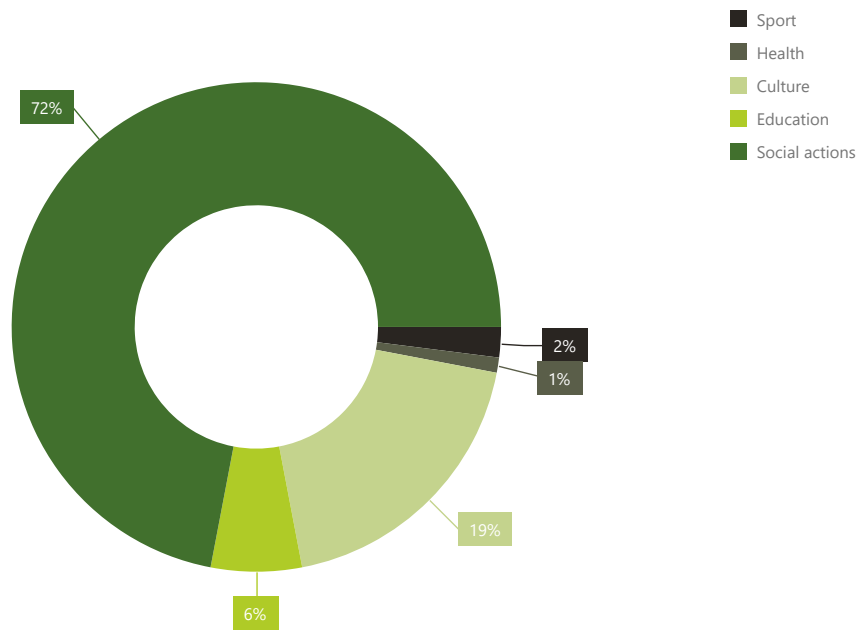
	Year				
	2012	2013	2014	2015	2016
<b>Scale, performance, capacity</b>					
<b>Number of consumers (thousands) </b>					
Note: Numbers of consumers by category are given in the item <i>Cemig's Market</i> .	7,535	7,781	8,008	8,078	8,260
Number of employees (LA1)	8,368	7,922	7,922	7,860	7,119
Municipalities served	774	774	774	774	774
<b>Concession area (km²) </b>					
Note: Includes changes in prior years; reflecting only the concession area of Cemig D (i.e. Minas Gerais State)	567,740	567,478	567,478	567,478	567,478
SAIFI – average outage frequency (EU28)	7.04	6.26	5.58	5.87	5.64
SAIDI – average outage duration (EU29)	14.74	12.49	10.77	11.53	11.73
<b>Number of plants in operation </b>					
Note: Figures for Cemig Consolidated - including interests in subsidiaries/affiliates proportionally.	70	70	70	84	121
<b>Installed capacity, MW (EU1) </b>					
Note: Figures for Cemig Consolidated - including interests in subsidiaries/affiliates proportionally, with adjustments in prior years for compatibility with the new criterion.	7,038	7,038	7,717	7,800	8,201
<b>Total length of transmission lines – km (EU4) </b>					
Note: Figures for Cemig Consolidated - including interests in subsidiaries/affiliates proportionally, with adjustments in prior years for compatibility with the new criterion.	9,413	9,748	9,748	9,748	8,341
Total length of subtransmission lines – km (EU4)	17,594	17,218	16,160	16,160	16,442
Total length of distribution network – km (EU4)	Total	480,932	486,045	491,848	498,627
	Urban	96,182	98,175	99,818	101,454
	Rural	384,750	387,870	392,030	396,326
<b>Economic dimension</b>					
Net operational revenue, R\$ mn	14,137	14,627	19,540	21,868	18,773
Ebitda – R\$ mn	5,084	5,186	6,382	5,538	2,638
Net profit (loss) – R\$ mn	4,272	3,104	3,137	2,468	334
Stockholders' equity – R\$ mn	12,044	12,638	11,285	12,984	12,930
Market valuation – R\$ mn	19,292	17,629	16,812	7,843	9,773
<b>Dividends paid – R\$ mn </b>					
Note: Dividend for 2016 to be proposed to the AGM to be held by May 12, 2017.	2,918	2,818	797	633	380
Dividend Yield (%)	22	9.2	23.5	4.5	10.7
<b>Environmental dimension</b>					
<b>Funds applied in the environment – R\$ mn (EN31) </b>					
Note: Sum of funds allocated to the environment in Operation and Maintenance.	59.4	52.4	52.8	53.8	52.1
<b>Fuel consumption – vehicle fleet (in GJ) </b>					
Note: The amounts for fuel consumption in the years 2012–15 have been recalculated to include Cemig's waterborne vessels and aircraft as well as the vehicle fleet.	180,359	174,519	172,270	162,067	160,084
Installed capacity free of GHG emissions (%)	97.3	97.3	97.3	98.1	98.2
<b>Total water consumption – m³ (EN8) </b>					
Note: Total water consumed for administrative and industrial purposes.	1,449,756	1,313,486	1,424,540	164,537	371,782
Direct CO <sub>2</sub> emissions – metric tons (EN15)	53,573	146,101	617,717	698,049	15,462
R&D investment related to environment (R\$ mn)	6.6	10	11.7	8.5	2.9
<b>Social dimension</b>					
Average hours of training per employee (LA10)	35.50	69.60	49.37	37.26	20.56
<b>Total funds applied in social responsibility – R\$ mn </b>					
Note: Sum of funds reported under External and Internal Social Indicators – see these in detail in the <i>Social Statement</i> .	115,023	83,234	109,622	75,751	51,480
<b>Accident frequency rate - own employees (LA7) </b>					
Note: Number of accidents resulting in injuries with time lost, per 200,000 hours worked.	0.23	0.34	0.34	0.41	0.44
<b>Accident frequency rate - outsourced employees (LA7) </b>					
Note: Number of accidents resulting in injuries with time lost, per 200,000 hours worked.	0.51	0.45	0.42	0.55	0.37

## HIGHLIGHTS

Net profit – R\$ Million

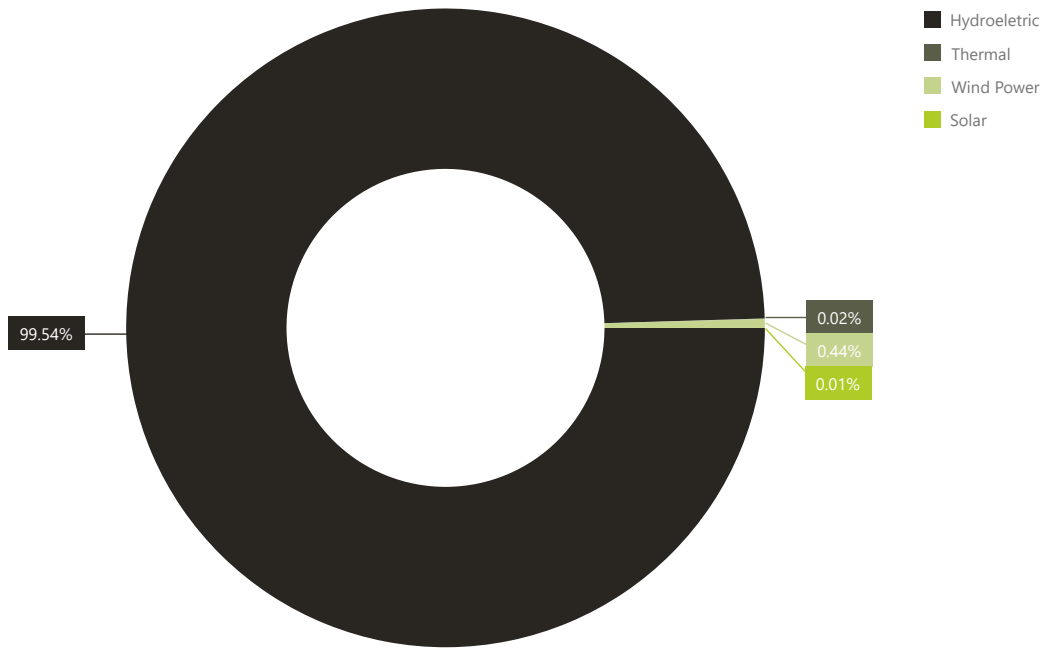


Areas of Social Investment





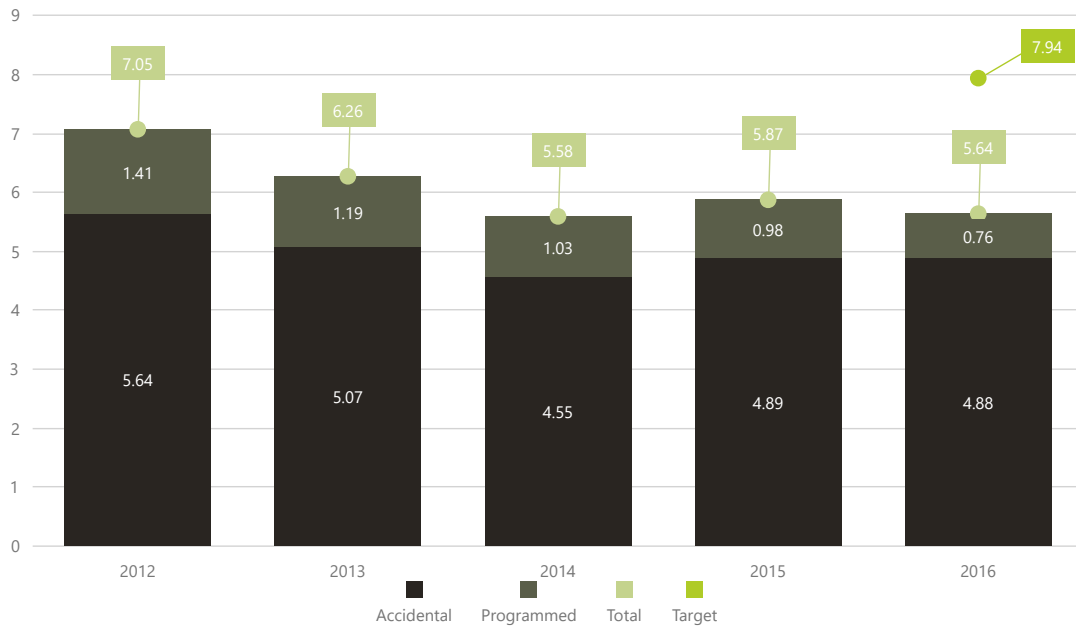
Generating Park - Net generation by source - MWh



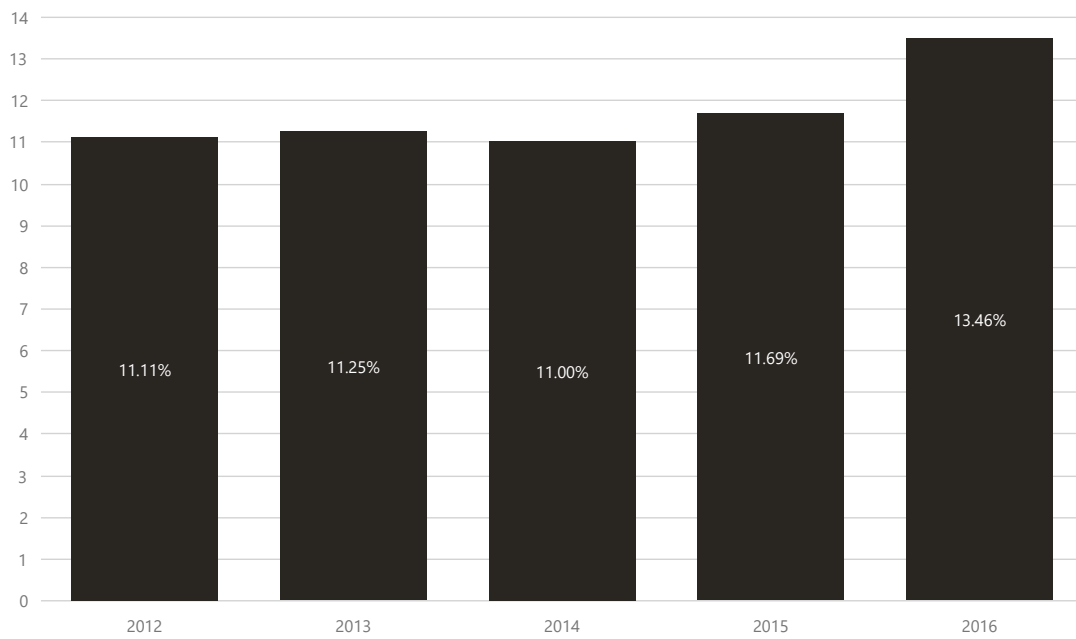
SAIDI



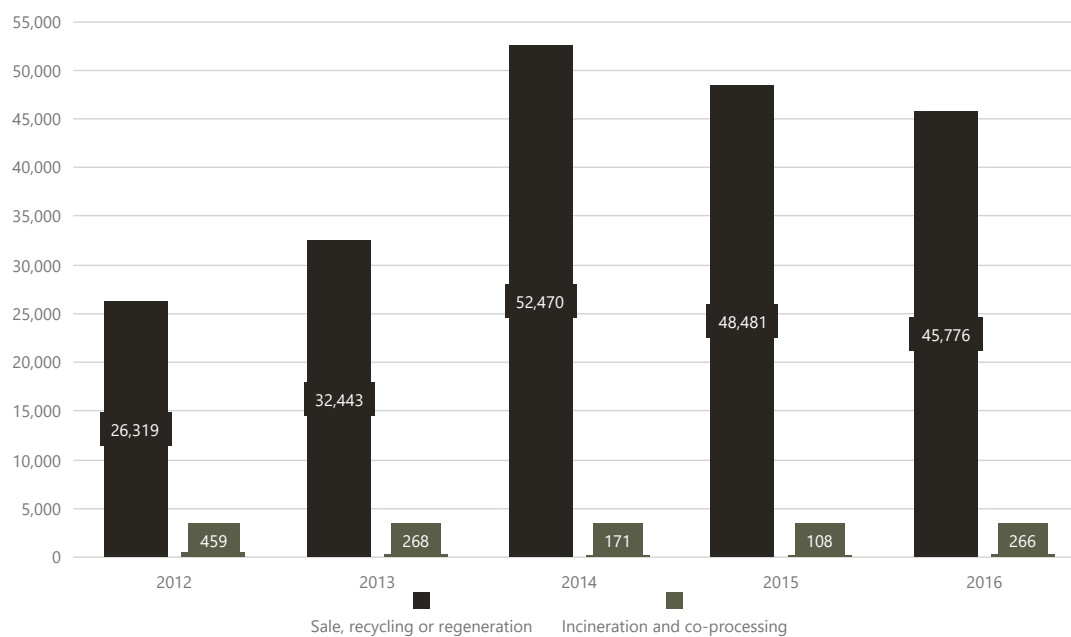
## SAIFI



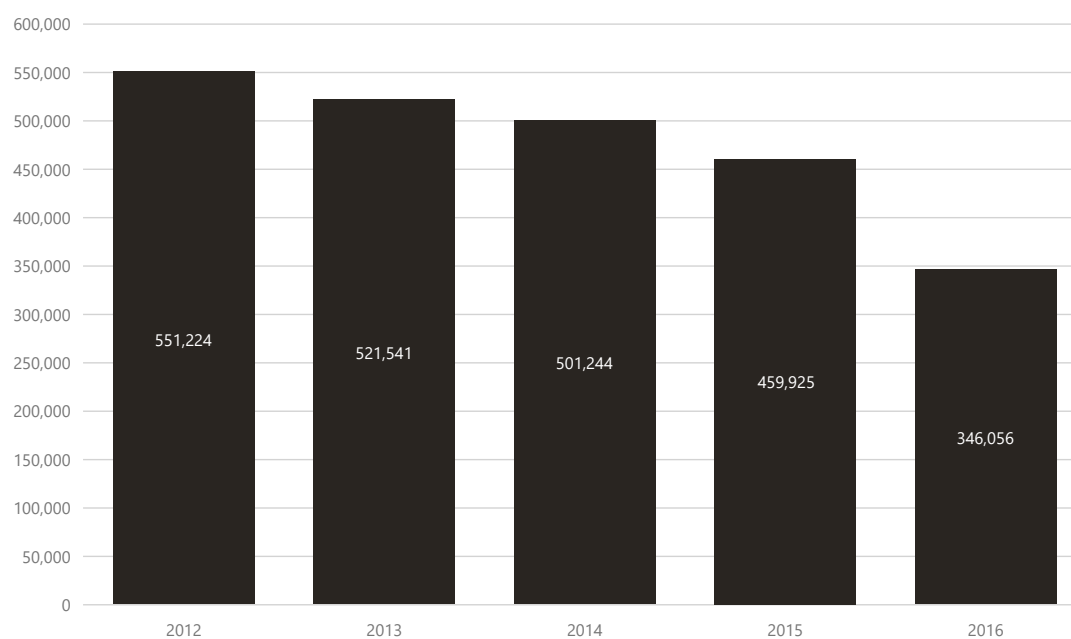
## Total Losses in Distribution



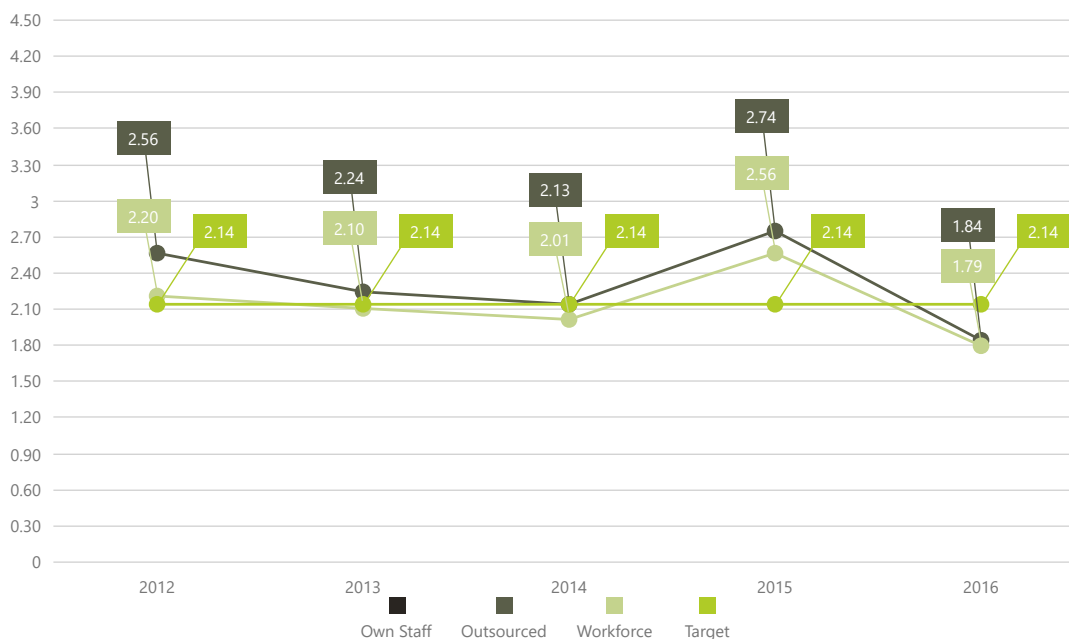
### Final disposal of wastes (t)



### Water consumption – Administrative (m³)



Accident frequency rate



## ABOUT THIS REPORT

## INTRODUCTION

This is Cemig's Annual and Sustainability Report on the year 2016. It gives information on the performance of the Company's operations as a whole, with a focus on its actions to create and maintain value, materialize strategic objectives and support its sustainability in the economic, social and environmental dimensions. It is published annually: this edition reports on the business year to December 31, 2016. It aims to provide a comprehensive point of reference on the Company's activities and performance, in dialog with all stakeholders; and also a management tool, enabling the various business areas to report on the indicators and metrics under their responsibility, and comment on the factors that influenced performance in the year.

All accounting data have been audited by Deloitte Touche Tohmatsu Auditores Independentes – including the Company's financial statements, which are presented in accordance with IFRS (International Financial Reporting Standards), and are also available on the Cemig website. As a guarantee of overall quality of the report and its data, in addition to the audit of economic and financial data Cemig has commissioned an independent assessment, with a wide scope of application of the principles and indicators of the Global Reporting Initiative (GRI) in this report. This assessment was carried out by SGS do Brasil.

Where there has been any revision of the information presented in previous reports – for example due to reclassification or a revision of measurement methods – an explanation of any changes is given adjacent to the data.

This report on the year 2016 complies with the following requirements, which were also adopted in the report on 2015:

1. Adoption of the GRI G4 methodology: This is a worldwide trend for production and disclosure of corporate reports.
2. Publication of two versions of the Report: the 'G4 Core' report, and the Full version. The G4 Core report is concise, with priority for indicators on the most important factors for the Company and its stakeholders. The Full report includes: a wider group of indicators; the specific GRI Sector Supplement for the Electricity Sector; and a report on progress in compliance with the 10 principles of the Global Compact. This more complete version ensures continuity of the data

and indicators that were in previous reports. Although it has additional information, this *Full* version does not meet all the criteria for being considered 'comprehensive' according to the GRI G4 methodology.

3. **Materiality:** For each of the 15 aspects identified in the materiality test, Cemig provides, in this report, a Disclosure of Management Approach (DMA). In the G4 methodology this must include: an explanation of the importance of the issue to the Corporation; how the aspect is managed; what risks are involved; and the related goals and objectives.

The Company has also aimed, even partially, to follow the guidelines of the International Integrated Reporting Council (IIRC) – which include exposition of the firm's business model, information on integration between programs and projects and indicated its initiatives that align with the UN's Sustainable Development Goals (SDG).

Both the Core and Full versions are available on the Cemig website for reading or download, in formats for computer, tablets and smartphones.

Questions on the report can be directed to Cemig's Sustainability Management Unit ([sustentabilidade@cemig.com.br](mailto:sustentabilidade@cemig.com.br)) or to the Investor Relations Department ([ri@cemig.com.br](mailto:ri@cemig.com.br)).

## BOUNDARIES OF THE REPORT

G4-18

The financial data presented in this report are for the group of companies in which the holding company, **Cemig** (*Companhia Energética de Minas Gerais*) holds operational control, except where otherwise stated. However, the non-accounting data and information mainly refer to the holding company and the wholly-owned subsidiaries Cemig Distribuição S.A. ('Cemig Distribution', '**Cemig D**'), Cemig Geração e Transmissão S.A. ('Cemig Generation and Transmissio', '**Cemig GT**'), and those created for the concessions which Cemig GT won in the Lot D auction (more details in the section *Concessions and Investments*). Where indicated, they also refer to other subsidiary entities of the Cemig Group. The accounting data is consolidated according to Brazilian Law (for more details see Note 3 of the Standardized Financial Statements ('**DFP**'), on Cemig's website). The name '**Cemig**' is used in reference to the group of companies. The terms **Group** and **Company** are used as synonyms of 'Cemig' unless otherwise stated. The name **Companhia Energética de Minas Gerais** is used when the reference is to the holding company alone, i.e. excluding all subsidiaries.

The scope of activities covered by this report has not changed in relation to the previous year.

## THE MATERIALITY MATRIX AND PARTICIPATION OF STAKEHOLDERS

G4-19

The Materiality Test is a procedure used annually by Cemig, with the maximum breadth and depth possible, to ascertain expectations of stakeholders within the organization's area of influence. It determines the subjects (aspects) which are to be covered in communications with the various publics, and also serves as a guide for the Company's management systems.

G4-20

The Materiality Test used for construction of the Report on 2016 was carried out in July through November 2016, including a revision of the matrix for 2015. Information from sources consulted was updated only where the working group responsible decided that there were significant changes in 2016 from the previous year.

G4-21

Through an institutional procedure called Stakeholder Mapping (which will be replaced by a new Engagement Matrix in 2017 – see box below), Cemig chose certain stakeholder groups as of priority interest for its relationship. Based on this, sources for consultation were sought corresponding to each of the groups, to arrive at the material subject areas. The process was permeated by the principles defining the report established in the GRI methodology.

G4-23

G4-24

G4-25

To operate the Materiality Test, which follows the guidelines of the GRI G4 materiality principle, Cemig used a combination of input methods: external and its own internal data sources, including the Company's Strategic Planning; research on stakeholder perception carried out during the year through corporate communications channels; sustainability rating agencies; news items published about Cemig and its economic sector; and consideration of internal policies, media analysis,

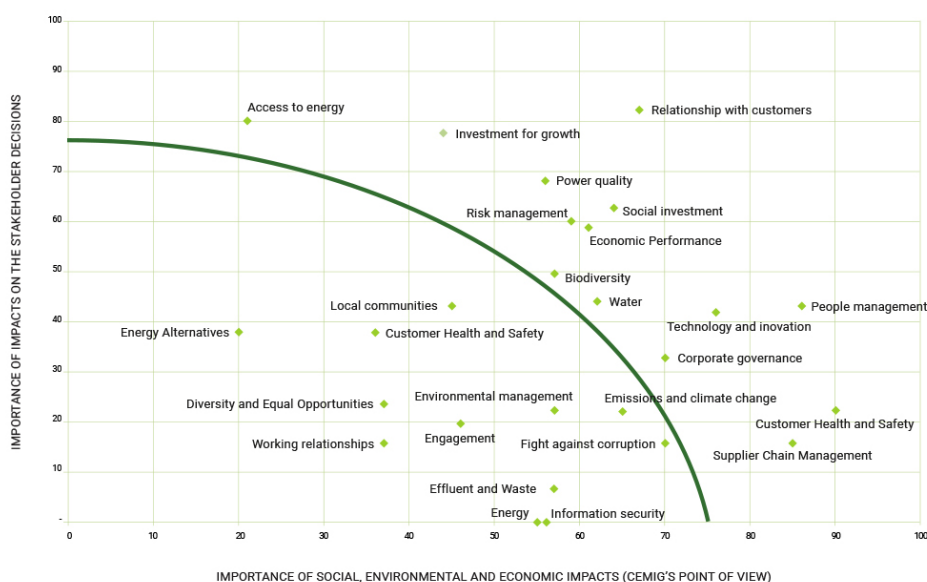
and organizational values; results of the Company's organizational atmosphere surveys; risks and opportunities; and internal perceptions collected through direct participation of key members of management.

Teams from Cemig and consultants Keyassociados were assigned to deal with the material and present a systematic assessment, critical analyses and groups for classification. The information on the communication channels used was not produced specifically to meet the demand of this methodology. It was used in accordance with the availability of stratifications previously adopted in the areas in which it was collected.

This procedure resulted in the following Materiality Matrix, which indicates the 14 aspects of the study considered to be most material (on the right-hand side of the curve). During the phase of validation of the result of the materiality study, one subject area was identified which, under the group of internal policies and documents used in the preliminary analyses, would have been below the cut-off level in the materiality matrix, but which even so is considered to be very important for the Company: Emissions / Climate Change. For this reason, it was added to the 14 aspects indicated by the materiality chart, creating a group of 15 aspects considered to be most important, and which are the subject of priority treatment in this report.

The report also addresses other aspects, but with less emphasis.

## MATERIALITY MATRIX 2016



The process of developing the methodology to be applied to the Materiality Test, and its final result, were subjected to independent verification by SGS do Brasil.

The table below shows the aspects considered to be most important according to the 2016 Materiality Matrix, and indicates which target publics are most affected by each aspect, as well as supplying details on what sources of information were used to represent each category of public.

ASPECTS	STAKEHOLDERS							
	Investors	Community	Suppliers	Corporate clients	Consumers	Media	Employees	Government
Access to electricity	x	x	x		x	x		x
Water	x	x	x	x	x	x	x	x
Biodiversity	x	x			x			x
Economic performance	x		x			x	x	x
Emissions and climate change	x	x			x			x
Supply chain management	x		x					
Personnel Management		x	x				x	x
Risk management	x	x	x	x				
Corporate governance	x						x	
Investment for growth, and concessions	x	x	x			x	x	x
Social investment		x						x
Electricity quality	x	x		x	x			x
Relationship with clients		x		x	x		x	
Workplace Health and Safety			x			x	x	x
Technology and innovation	x		x		x	x	x	x
	SOURCES CONSULTED							
	Summary of the subjects dealt with through the 'Talk to IR' channel	Excerpts from the Face to Face* report, Sustainability Channel, 2016	Interview with manager of the Area*	Commercial relationship agent*	Customer Service, Ombudsman, surveys, IASC, summary of the Reputation and Brand Survey*	Clipping service (Jan.-Oct. 2016)	Excerpt from climate survey *	IASC city halls survey*

#### Notes:

Community = NGOs, local communities in operational areas, academic community.

Government = Represented by the indications collected in the city halls survey.

Scope of impact of the aspects on stakeholders: internal and external (for all stakeholders).

\* In the review of materiality for 2016, the content of these sources consulted for the 2015 matrix was maintained.

The material aspects dealt with in the report relate to various indicators, especially those of the GRI, the Global Compact and the Sustainable Development Goals:

MATERIAL ASPECTS	CHAPTER	INDICATORS		
		GRI	GLOBAL COMPACT PRINCIPLES	SUSTAINABLE DEVELOPMENT GOALS
Electricity access	Access to electricity	EU26	-	SDG1; SDG7
Water	Water resources	EN9; EN26	-	SDG6
Biodiversity	Biodiversity	EN11; EN12; EN14; EU14	GCP7, GCP8	SDG15
Economic performance	Financial results	G4-17	-	SDG8
Climate change and emissions	Climate change	EC2; EN15; EN16; EN17; EN18; EN19; EN20; EN21; EN30	GCP7	SDG13
Management of the supplier chain	Suppliers	G4-12; HR4; HR5; HR6; EC9; LA14; EN32; EN33; HR11; LA15	GCP5, GCP6, GCP10	SDG12
Management of people (Employment and training)	Personnel Management	G4-10; LA1; LA2; LA12; LA9; LA10; LA11	-	SDG4
Risk management	Risk management	G4-2; G4-47	-	-
Corporate governance	Corporate governance	G4-7; G4-34	-	-
Investment for growth, and concessions	Concessions and Investments	EU6; EU10; EC7	-	-
Social investment	Social investment	-	-	-
Electricity quality (Availability and reliability, Tariffs)	Electricity quality	EU28; EU29	-	SDG7
Relationship with clients (Client satisfaction, communication channels)	Clients and consumers	PR5	-	-
Workplace Health and Safety	Occupational safety, health and well-being (SSO&BE)	LA5; LA6	-	SDG3
Technology and innovation	Technology and Innovation (R&D, Energy Alternatives, Open Innovation)	-	GCP9	SDG9

## New Stakeholder Engagement Matrix

In 2016 Cemig formed a multifunctional group to reassess its strategy of engagement with stakeholders – since the processes of engagement are a means of defining organizational strategies in a participative manner, taking into account stakeholders' various interests and positions.

The Company believes that identification of appropriate stakeholder management strategies can result in innumerable benefits for the business:

- Early knowledge of important trends and issues;
- Strengthened credibility and transparency;
- Enables creation of synergies;
- Shows up opportunities to improve businesses;
- Helps earn the 'social license to operate';
- Helps improve the Company's image and brand;
- Minimizes risks in Cemig's relationships with stakeholders; and
- Increases investors' confidence.

The new model proposed is being presented to Cemig's leadership and various departments, to disseminate concepts and practices in the relationship with stakeholders. The processes still in the phase of validation, and will be assessed by senior management.

As a first working step, Cemig has aimed to consolidate a single concept of 'stakeholders' in the Company: they are the people, groups or organizations which affect and/or can be affected, directly or indirectly, by the Company's



activities or services.

Based on this concept, the steps in the process of engagement were defined:

- Identification of the various stakeholder groups
- Deciding the highest-priority stakeholders
- Knowledge of their needs and expectations
- Establishment of the relationship commitments and the staff involved
- Development and application of tools relating to assessment and improvement of the process
- Dissemination of the lessons learned

After identification of the various groups of stakeholders, the Engagement Matrix was constructed, defining the stakeholders with high priority. The following groups were identified:



Cemig used its principal relationship channels to map the needs and expectations of each one of these nine groups. Based on the information collected through these channels, the Company reaffirmed the commitments assumed with these groups, and made the information available on the Cemig web portal.

It was found that many of the commitments had already been assumed and published in formal Cemig documents – such as the Cemig Code of Ethics, the Cemig Human Resources Policy, Cemig's Communication Policy, Cemig's Community Relationship Communication Policy, its Sponsorships Policy, and the Sustainability Report.

This [new engagement matrix](#) will be the base for review of the 2017 Materiality Matrix.

Cemig's principal engagement actions are listed in the chapter Relationship with the Community.

## REPORT CAPTIONS

The GRI Content Index at the end of this report presents a summary of all the available information, organized and categorized in summary form from the point of view of the **GRI Indicators** and the **Principles of the Global Compact**.

Tags throughout the text highlight the related GRI indicators, the material aspects (DMAs), the Global Compact Principles and the UN's Sustainable Development Goals (SDG) – to facilitate reader's ability to associate and locate the corresponding indicators or principles.

## GLOSSARY

For optimum understanding of the terms used, Cemig has created a glossary, available [here](#).

## MESSAGE FROM THE MANAGEMENT

### MESSAGE FROM MANAGEMENT

G4-1

In 2016, the difficulties in the macroeconomic environment continued to demand a major force of management from Brazilian companies, and no less so for Cemig: we had to deal with an electric power market still in retraction, and the still very high costs of financing the rollover of our debt due to the higher perception of risk related to Brazil.

G4-34

However, we believe that economic periods like this are cyclical by nature; we are making adjustments needed, in this moment of instability, to increase our financial and operational solidity, which have been the hallmark of our 65 years of history.

G4-39

Even with some large-scale investment in 2016, we kept our debt at the same level as in 2015, even in nominal terms – without inflation adjustment. We still have a significant volume of debt maturing in the next two years, but we are taking measures to lengthen the debt profile, and seeking reduction of funding costs. We expect that in the coming years we will reach the debt level specified in our bylaws, which is stated as a maximum of 2.5 times for Net debt/Ebitda.

This same financial discipline in management of the debt is also a part of the quest for improvement in operational efficiency. Our manageable costs on outsourced services, materials and other expenses were lower in 2016. In personnel expenses, we have implemented a voluntary retirement program which 800 employees have accepted, and which will help reduce our expense in the coming years.

Our net profit in the year was R\$ 334 million, lower than in 2015, due to adjustments related to our investment in Renova and, principally, due to our not having the output from the São Simão plant available for sale in 2016, due to the legal action against the federal government on extension of the concessions of the Jaguará, Miranda and São Simão hydroelectric plants.

We are maintaining a dialog with the federal government about the extension of these concessions, in the context of legal actions involving these plants. We have expectations of reaching an alternative solution for extension of our concession contracts that will be able to harmonize the interests of the federal government with the rights of the Company. We believe these rights are stated unequivocally in the concession contracts of these plants.

We expect 2017 to see a change of cycle: a more favorable macroeconomic environment, with increased confidence on the part of investors and society, and thus an improved environment for investment.

This expectation is already taking form in the reduction of interest rates, which benefits us by reducing the cost of our debt, and also improves expectations on the financial conditions for rolling over debt and for future funding.

Brazilian economic growth has a direct positive effect for our distribution business, through expectation of improvement in the electricity market. In 2016 we invested more than R\$ 1 billion in the concession area of our Distribution Company ('Cemig Distribuição' or 'Cemig D'): these significant investments in recent years will be part of the process of tariff review scheduled for 2018.

In our transmission business, there was good news in 2016 with the decision on rules for indemnity of assets, a consequence of our accepting the terms of Law 12783/13 (MP 579). This decision was important in enabling us to include the inflow of funds in our cash flow projection, thus guaranteeing sustainability of the investments in transmission, which now have expectation of more attractive rates of return.

In spite of all the challenges, we continue to be recognized for the sustainability and social responsibility that are ever-present in our operations. We were once again included in the BM&FBovespa Corporate Sustainability Index, and in the Dow Jones Sustainability Index, in which we have been listed since its creation in 1999. We are signatories of the UN Global Compact; and we have leading positions in several international and Brazilian sustainability ratings – all of these indices representing recognition of the value of our shares from the point of view of sustainability. In conclusion, we again emphasize our confidence in the future and in the capacity of our management to conclude implementation of the necessary adjustments that will increase Cemig's financial solidity, providing the appropriate return on investment. And we have confidence in our almost 130,000 stockholders, spread out over more than 40 countries, in all the continents.

We would like to express our thanks for the commitment and talent of our employees, converging with the support of our stockholders and other stakeholders – all of which maintain the recognition of Cemig as: Brazil's Best Energy.

THE BOARD OF DIRECTORS	
Member	Alternate
José Afonso Bicalho Beltrão da Silva (Chair of the Board)(Majority stockholder)	(Seat vacant)(Majority stockholder)
(Seat vacant)(Majority stockholder)	Samy Kopit Moscovitch
Allan Kardec de Melo Ferreira (Majority)	Luiz Guilherme Piva (Majority)
Arcângelo Eustáquio Torres Queiroz (Majority)	Franklin Moreira Gonçalves (Majority)
Helvécio Miranda Magalhães Junior (Majority)	Wieland Silberschneider (Majority)
Marco Antonio de Rezende Teixeira (Majority)	Antônio Dirceu Araujo Xavier (Majority)
Marco Antonio Soares da Cunha Castello Branco (Majority)	Ricardo Wagner Righi de Toledo (Majority)
Nelson José Hubner Moreira (Majority)	Carlos Fernando da Silveira Vianna (Majority)
Marcelo Gasparino da Silva (Preferred shares)	Aloisio Macário Ferreira de Souza (Preferred shares)
Patricia Gracindo Marques de Assis Bentes (Majority)	(Seat vacant)(Minority stockholders)
Ricardo Coutinho de Sena (Majority)	Bruno Magalhães Menicucci (Minority stockholders)
Paulo Roberto Reckziegel Guedes (Minority stockholders)	Carolina Alvim Guedes Alcoforado (Minority stockholders)
Saulo Alves Pereira Junior (Minority stockholders)	Marina Rosenthal Rocha (Minority stockholders)
Daniel Alves Ferreira (Minority stockholders)	Tarcísio Augusto Carneiro (Minority stockholders)
José Pais Rangel (Minority stockholders)	José João Abdalla Filho (Minority stockholders)

FISCAL COUNCIL	
Member	Alternate
Charles Carvalho Guedes	Bruno Cirilo Mendonça de Campos
Edson Moura Soares	Marcos Túlio de Melo
Rafael Amorim de Amorim	Aliomar Silva Lima
Manuel Jeremias Leite Caldas	Ronaldo Dias
Newton Brandão Ferraz Ramos	Rodrigo de Mesquita Pereira

EXECUTIVE BOARD	
Name	Position
Bernardo Afonso Salomão de Alvarenga	Chief Executive Officer
Bernardo Afonso Salomão de Alvarenga	Deputy CEO (interim)
César Vaz de Melo Fernandes	Chief Business Development Officer
José de Araújo Lins Neto	Chief Corporate Management Officer
Maura Galuppo Botelho Martins	Chief Officer for Human Relations and Resources:
Luís Fernando Paroli Santos	Chief Distribution and Sales Officer
Dimas Costa	Chief Trading Officer
Adézio de Almeida Lima	Chief Finance and Investor Relations Officer
Franklin Moreira Gonçalves	Chief Generation and Transmission Officer
Luís Fernando Paroli Santos	Chief Institutional Relations and Communication Officer (interim)
Raul Lycurgo Leite	Chief Counsel

## Board of Directors



### Sitting Members



JOSÉ AFONSO BICALHO  
BELTRÃO DA SILVA

Chair of the Board of  
Directors



ALLAN KARDEC DE MELO  
FERREIRA



ARCÂNGELO EUSTÁQUIO  
TORRES QUEIROZ



HELVÉCIO MIRANDA  
MAGALHÃES



MARCO ANTÔNIO DE  
REZENDE TEIXEIRA



MARCO ANTÔNIO  
SOARES DA CUNHA  
CASTELLO BRANCO



NELSON JOSÉ HUBNER  
MOREIRA



MARCELO GASPARINO DA  
SILVA



PATRÍCIA GRACINDO  
MARQUES DE ASSIS  
BENTES



RICARDO COUTINHO DE  
SENA



PAULO ROBERTO  
RECKZIEGEL GUEDES



SAULO ALVES PEREIRA  
JUNIOR



DANIEL ALVES FERREIRA



JOSÉ PAIS RANGEL

### Substitute Members

SAMY KOPIT  
MOSKOVITCH

LUIZ GUILHERME PIVA

FRANKLIN MOREIRA  
GONÇALVES

WIELAND  
SILBERSCHNEIDER

ANTÔNIO DIRCEU  
ARAÚJO XAVIER

RICARDO WAGNER RIGHI  
DE TOLEDO

CARLOS FERNANDO DA  
SILVEIRA VIANNA

ALOISIO MACÁRIO  
FERREIRA DE SOUZA

BRUNO MAGALHÃES  
MENICUCCI

CAROLINA ALVIM  
GUEDES ALCOFORADO

MARINA ROSENTHAL  
ROCHA

TARCÍSIO AUGUSTO  
CARNEIRO

JOSÉ JOÃO ABDALLA  
FILHO

### Audit Board



### Sitting Members



CHARLES CARVALHO  
GUEDES



EDSON MOURA SOARES



RAFAEL AMORIM DE  
AMORIM



MANUEL JEREMIAS LEITE  
CALDAS



NEWTON BRANDÃO  
FERRAZ RAMOS

### Substitute Members

BRUNO CIRILO  
MENDONÇA DE CAMPOS

MARCOS TÚLIO DE MELO

ALIOMAR SILVA LIMA

RONALDO DIAS

RODRIGO DE MESQUITA  
PEREIRA

### Executive Board



BERNARDO AFONSO  
SALOMÃO DE  
ALVARENGA

Chief Executive Officer  
Deputy CEO interim and  
cumulatively



CÉSAR VAZ DE MELO  
FERNANDES

Chief Business Development  
Officer



JOSÉ DE ARAÚJO LINS  
NETO

Chief Corporate Management  
Officer



MAURA GALUPPO  
BOTELHO MARTINS

Chief Office for Human  
Relations and Resources



LUÍS FERNANDO PAROLI  
SANTOS

Chief Distribution and Sales  
Officer  
Chief Institutional Relations  
and Communication Officer  
interim and cumulatively



DIMAS COSTA



ADÉZIO DE ALMEIDA  
LIMA



FRANKLIN MOREIRA  
GONÇALVES



RAUL LYCURGO LEITE

Chief Counsel

## COMPANY PROFILE

## RECOGNITION

- Listed in the Dow Jones Sustainability Index (DJSI) for the 17<sup>th</sup> year running;
- 6<sup>th</sup> consecutive year in the Dow Jones Emerging Markets Index;
- Selected for inclusion in the ICO2 Index, of the BM&FBovespa, for the 7<sup>th</sup> consecutive year;
- 12<sup>th</sup> consecutive year in the ISE Corporate Sustainability Index (BM&FBovespa);
- Rated one of 10 Brazilian companies with the best climate change practices in Latin America by the Carbon Disclosure Project (CDP);
- Selected as one of the best Emerging Market companies by the criteria of the Euronext Vigeo Emerging 70 index;
- The Cemig Group company Taesa (*Transmissora Aliança de Energia Elétrica S.A.*) was chosen as the best company in the Brazilian electricity sector by the *Valor 1000* annual publication of *Valor Econômico* newspaper for the second consecutive year;
- Credit rating by Standard & Poor's of B+ on global scale and brBBB+ on Brazilian scale, with outlook stable for both;
- Selected by Sustainalytics (Netherlands);
- Designated 'Prime' by Oekom Research (Germany);
- Selected for the MSCI Global Sustainability Indexes;
- Top 100 Green Utilities – Cemig was included in 24<sup>th</sup> position in this ranking published by the US consultancy company Energy Intelligence, which lists the 100 energy companies worldwide with the lowest rates of greenhouse gas emissions (CO<sub>2</sub>) and highest installed capacities of generation from renewable sources; and
- Selected for inclusion in the FTSE4Good Emerging Index.

## PARTICIPATION IN ASSOCIATIONS

Cemig is a participating member of the following associations: the Brazilian Wind Energy Association – *Abeeólica*; the Brazilian Electricity Distributors' Association – *Abradee*; the Brazilian Association of Large-scale Electricity Generators – *Abrage*; the Brazilian Clean Energy Generation Association – *Abragele*; the Brazilian Power Transmission Companies' Association – *Abrate*; the Brazilian Technical Standards Association – *ABNT*; the Brazilian Corporate Council for Sustainable Development – *CEBDS*; the Electricity Research Center – *Cepele*; and the Minas Gerais State Industries' Association – *Fiemg*.

## PROFILE

G4-3

Companhia Energética de Minas Gerais (Cemig) operates in generation, transmission, sale and distribution of electricity, energy solutions (Efficientia S.A.), and distribution of natural gas (Gasmig). The “**Cemig Group**” comprises: the holding company, *Companhia Energética de Minas Gerais – Cemig* (“**Cemig**”), its wholly-owned subsidiaries *Cemig Geração e Transmissão S.A.* (“**Cemig GT**”) and *Cemig Distribuição S.A.* (“**Cemig D**”) – and other interests, comprising a total of 234 companies, 18 consortia and 2 FIPs (Equity Investment Funds), with assets in 22 Brazilian states and the nation’s Federal District.


G4-4

G4-9

For more information on Cemig’s interests and businesses please [see here](#).

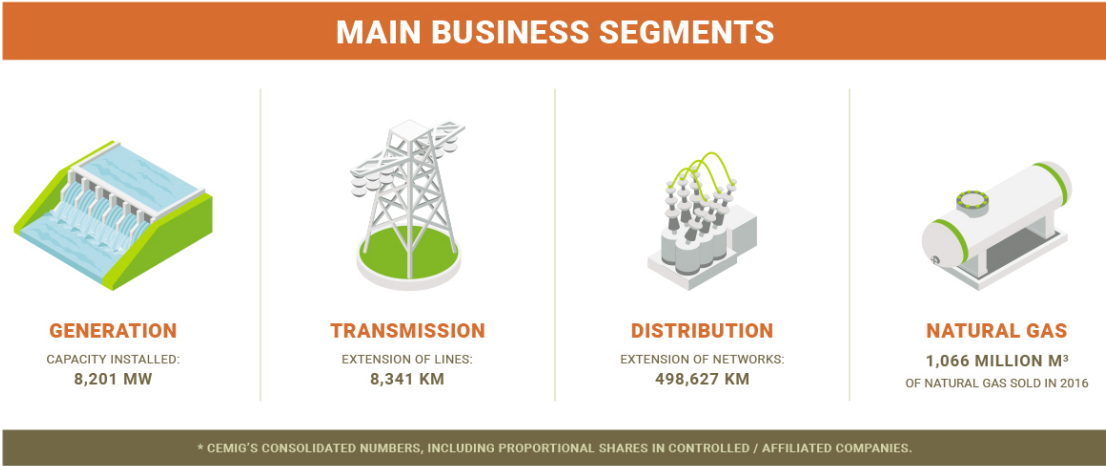
Cemig also has operations in data transmission (**CemigTelecom**); and is part of the controlling stockholder block of the distribution utility **Light S.A.**, serving 31 cities and counties in the state of Rio de Janeiro, with over 11 million consumers, in which it holds a direct interest of 26.06% and an indirect interest of 17.32%. Cemig also has a controlling stockholding interest of 31.54% in the transmission company *Transmissora Aliança de Energia Elétrica S.A.* (Taesa).

### Principal equity interests

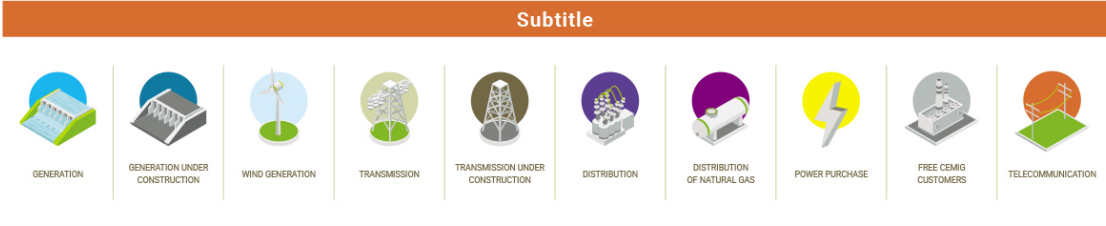
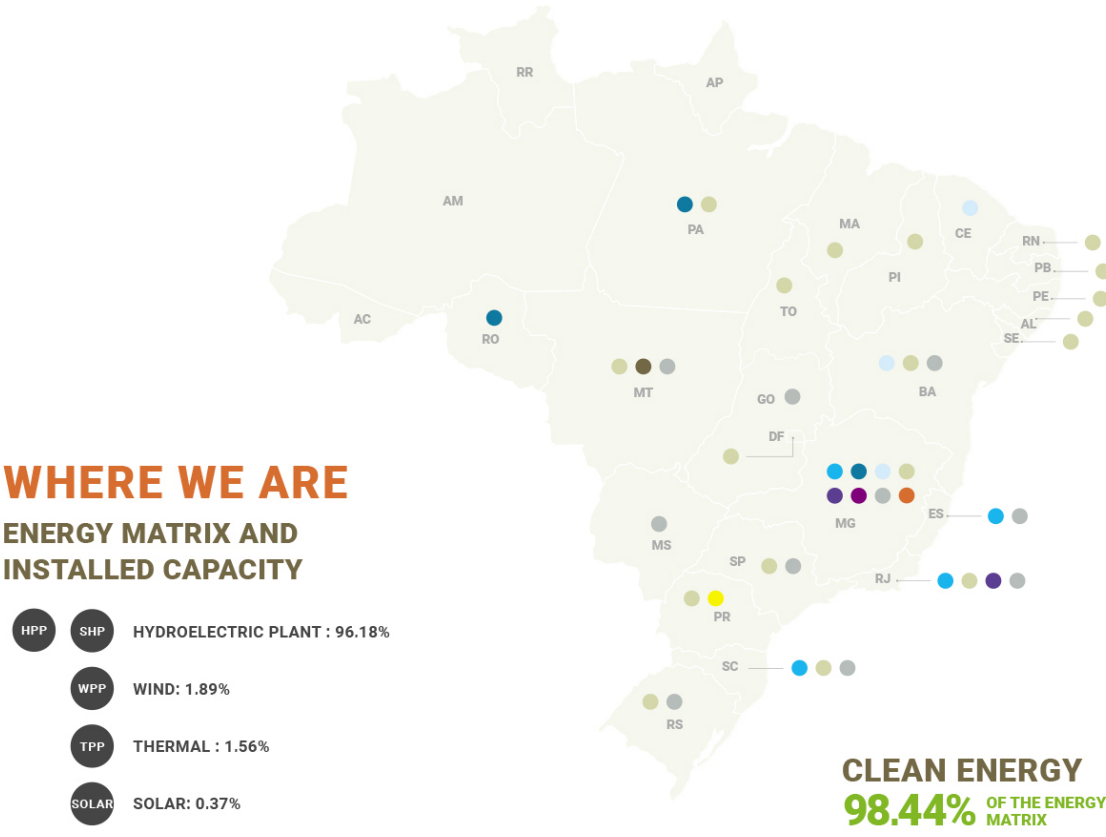
Cemig’s stakes in the share capital of its main subsidiaries and affiliates  Note: VS = Voting shares | TS= Total of shares :



GENERATION	TRANSMISSION	DISTRIBUTION	NATURAL GAS	OTHER BUSINESSES
Cemig Geração e Transmissão S.A. (Cemig GT) 100% Cemig	Cemig Geração e Transmissão S.A. (Cemig GT) 100% Cemig	Cemig Distribuição S.A. (Cemig D) 100% Cemig	Cia de Gás de Minas Gerais (Gasmig) 98.71% VS 99.57% TS  <a href="http://gasmig.com.br">gasmig.com.br</a>	Axxiom Soluções Tecnológicas S.A. 51% Light 49% Cemig  <a href="http://axxiom.com.br">axxiom.com.br</a>
Light S.A. 26.06% Cemig (directly) and 17.32% (indirectly)  <a href="http://light.com.br">light.com.br</a>	Transmissora Aliança de Energia Elétrica S.A. (Taesa) 42.72% VS* 31.54% TS*  <a href="http://taesa.com.br">taesa.com.br</a>	Light S.A. 26,06% Cemig (directly) and 17.32% (indirectly)  <a href="http://light.com.br">light.com.br</a>	Natural Gas Exploration Block 24.5% (directly)	Efficientia S.A. 100% Cemig
Norte Energia S.A. (Belo Monte)  12.77% (indirectly)  <a href="http://norteenergia.com.br">norteenergia.com.br</a>				Cemig Telecom S.A. 99.99% Cemig  <a href="http://cemigtelecom.com">cemigtelecom.com</a>
Santo Antônio 18.13% Through Madeira Energia  <a href="http://santoantonioenergia.com.br">santoantonioenergia.com.br</a>				
Renova Energia S.A.  Light S.A.: VS 20.28%; TS 15.68%  Cemig GT: VS 44.18%; TS 34.15%  <a href="http://renovaenergia.com.br">renovaenergia.com.br</a>				
Aliança Geração de Energia S.A.  45% Cemig  <a href="http://aliancaenergia.com.br">aliancaenergia.com.br</a>				



Where we are



Cemig's outstanding assets include: the technical capacity and quality of its workforce, recognized for its expertise both in Brazil and internationally; its natural resources, mainly water resources (98% of its installed generation capacity is hydroelectric); access to the financial capital it needs for continuous development of its business; the inputs provided by its suppliers; and the consideration that it gives to the needs and expectations of its stakeholders.

In all its activities Cemig seeks to achieve sustainable growth focused on creating value for its shareholders, employees, suppliers and society. Its investments in expansion of its businesses to supply the markets in which it operates, and its commitment to quality customer service, are a materialization of Cemig's strategic vision, which is founded on the principles of sustainability and social and environmental responsibility.

## Business model



## Vision, Mission and Values

Cemig's management is based on the guidelines expressed in the Mission, Vision and Values set out in its Master Plan, and in its Strategic Planning.

**Mission:** "To operate in the energy sector with profitability, quality and social responsibility."

**Vision:** "To consolidate Cemig's position, over the course of this decade, as the largest group in the Brazilian electricity sector by market value, with a presence in the natural gas market, and as a global leader in sustainability, admired by its clients and recognized for its solidity and performance".

Cemig's organizational **values** are: the beliefs and attitudes that give personality to the relationship between Cemig and people. They are nurtured and sustained by the values: Integrity; Ethics; Wealth; Social Responsibility; Enthusiasm at Work; and Entrepreneurial Spirit.

## Ethical values and anti-corruption practices

Cemig has the commitment to maintain a high standard of ethics and integrity in the conduct of its business. Ethical conduct and combat of corruption are of great importance for the Company, and are explicit in the statement of its values. The Company also makes clear the degree to which it values ethical conduct and professional integrity in its Statement of Ethical Principles and Code of Professional Conduct. Cemig uses numerous methods to insert these themes into its culture: Documented policies and procedures dealing with specific subjects such as the Anti-fraud Policy; instructions on the functioning of the ethics committee and Cemig’s anonymous ‘Whistleblowers’ Channel’; campaigns of communication and awareness on prevention of fraud and corruption; and periodic training sessions on the code of conduct. The Company also has a Compliance Program, promoting an organizational culture to incentivate ethical conduct, commitment to compliance with internal and external rules, and providing for prevention and detection of, and the response to, failings to comply with the rules and/or proper standards of conduct. In 2016, to address the subjects of ethics and combating corruption, Cemig ran communication campaigns including lectures and presentations, internal periodicals, the Intranet, emails, posters, screen savers, and stickers.

Cemig has the most significant risks related to fraud and corruption mapped, documented and recognized by senior management. In this mapping process, probabilities of materialization of risks are estimated, in accordance with their causes and the severity of the consequences if they occur. As part of this approach, the internal controls and measures related to mitigation of each risk are also mapped.

Supporting the objectives of the Compliance Program, in 2016 Cemig began giving training sessions on the new version of the Statement of Ethical Principles and Code of Professional Conduct, after its revision during the year. The online training was made available to all managers, members of the Audit Board, employees, outsourced workers, and interns – beginning on December 27, 2016. By March, 5,379 employees had received this training – 82% of the total headcount, in 5,379 training-hours. By the end of 2017 Cemig aims to have given this training to more than 10,000 workers throughout the Cemig Group. In 2016 Cemig made a pamphlet available to its internal public with the title “Do you Think of Yourself as Honest?”. The content of this small publication dealt with Brazil’s Anticorruption Law (Law 12846/13), with indicative examples from Cemig’s daily routine, in the form of cartoon-book illustrations. This was also widely viewed on the corporate Intranet, and promoted by the complete range of other internal means of communication (corporate murals, daily email bulletins, etc.). The whole of the Company’s internal public had the opportunity to receive instruction on this content through online training, with issuance of a certificate of completion.

Further to this, in November 2016 Cemig launched its *Integrity* campaign. Stickers were posted at locations with high volume of traffic within the Company, with the slogan “*A More Honest World Starts with You.*” (“*Um mundo mais íntegro começa por você.*”) Other actions in this campaign included an invitation to employees to reflect on what honesty means to each one of them and send in their thoughts by email. This theme was communicated internally using the widest possible range of channels. Cemig assumes that this has strengthened the whole of its internal public’s commitment to preventing and combating departures from ethics, and acts of corruption.



Left:

*"A More Honest World Starts with You. (share this attitude)"*

Below:

*"Do you Think of Yourself as Honest? (Cemig and the anti-corruption law 12,846/13)"*

Another highlight in 2016 was creation of the Compliance and Corporate Risks Senior Management Unit, responsible directly to the CEO, which aims to integrate and consolidate the practices of Governance, Risks and Compliance in line with internal and external rules and the Company's Code of Ethics. The main duties of this new Management Unit are: to develop and implement policies and procedures to keep the level of the Company's exposure to risks within a planned limit; to work continuously for our compliance with laws and regulations and ethical conduct by our people; and to coordinate and support the corporate activities of compliance and risk management, bringing these processes to an enhanced level.

Cemig's Statement of Ethical Principles and Code of Professional Conduct, updated in 2016, orients and disciplines the conduct of people who act in the Company's name or interact with it. The new document includes terms such as fraud, bribery, corruption, kickbacks, money laundering, passive corruption, bullying, sexual harassment, human rights and diversity. A chapter was also inserted dealing with specific conduct for specific relationship groups, and a chapter for management of the ethical process, with orientations on how the Ethics Committee functions and treatment for consultations and accusations.

Cemig's Risks Management Policy, which was also reviewed and revised in 2016, and re-approved by the Executive Board, is aligned with current best practices in the market, the principal rules adopted worldwide, and Cemig's own strategic planning, including its Long-term Strategic Plan, and Cemig's vision of sustainability. The Policy also presents the risk appetite assumptions established by the Company. The structure of the Compliance Program (already mentioned above), formalized in 2016 and approved by the Executive Board and the Board of Directors, is referenced to Brazil's Anticorruption Law (Law 12846/13), the US Foreign Corrupt Practices Act, and best practices adopted by the market in integrity programs. The communication and training plan for the program is being developed.

In 2016 Cemig received 207 accusations through its Anonymous ('Whistleblowers') Reporting Channel 

Note: All the reports received are classified as 'operational' or 'non-operational'. The first category is investigated by the director-level department involved; the Audit Board is informed; and the response is assessed by the Ethics Committee: any further analysis needed is requested from Internal Auditing. Reports in the second category, non-operational, are investigated by the Audit Board, with support from Internal Auditing.

. Of these

207 reports, the figures for subjects most referred to and investigated were: Internal Rules, Institutional Image and Relationship with Society, 35% (71 reports), Professional Integrity and the Internal Public (Company employees), 29% (61 reports), Protection of Assets, 13% (26 reports), Relationship with suppliers and subcontractors, 12% (25 reports), Health, Safety, Environment and Social Responsibility, 3% (7 reports), and Other subjects, 8% (17 reports). A consultation of the processes still open and the reports and audits carried out on them, no cases of corruption were identified in 2016; nor were there any dismissals or punishment of employees, nor contracts rescinded with opening of administrative investigation for corruption.

Cemig has a Three-Year Internal Audit Plan, requiring assessment of all business processes every three years, to ensure procedures continue to be appropriate and fit for purpose, and that all laws, rules, standards and internal procedures are continuously obeyed. Decisions on which processes and companies are audited in a year are based on the degree of risk they represent for the business and for Cemig's results. All processes are assessed for risk of fraud, to align with the core audit mission, and in planning a year's audit, the auditors assess the susceptibility of each process to fraud and errors, attributing a mark – High, Medium or Low. High-risk processes are audited more frequently (usually annually); audits for low-risk processes are scheduled for every three years. Audit planning also seeks out specific fraud risks in each process with a level attributed in terms of both probability and impact. Highlights among these factors are: absence of segregation of functions; absence of approvals; and absence of support documentation for transactions. Audit planning also aims to identify any changes in processes, or new events, that might create new elements of uncertainty.

Cemig's internal control system to prevent fraud and corruption is aligned with the requirements of the US Sarbanes-Oxley Act (SOX) and Foreign Corrupt Practices Act (FCPA). Control activities audited annually include: orientation against unethical practices, corruption and fraud (the Anti-Fraud Policy); the anonymous Whistleblower's Channel; Human Resources policies on recruitment and remuneration; the corporate risk management process; information security procedures; segregation of duties performed manually and those performed by computer systems; limits of autonomy; and the internal control system that monitors activities of the Internal Auditing unit.

## CORPORATE GOVERNANCE

### GOVERNANCE MODEL AND LEADING PRACTICES DMA

G4-7

Cemig's corporate governance model is based on principles of transparency, equity and accountability, focusing on clear definition of the roles and responsibilities of the Board of Directors and the Executive Board in the formulation, approval and execution of policies and guidelines for managing the company's businesses.

G4-34

The basic value and aim in the Company's continuous quest for sustainable development is balance between the economic, financial, environmental and social aspects of the Group's projects, in a continuing effort to improve the relationship between the Company and its stockholders, clients, employees, society as a whole, and other stakeholders.

G4-41

Cemig's principal Corporate Governance Practices:

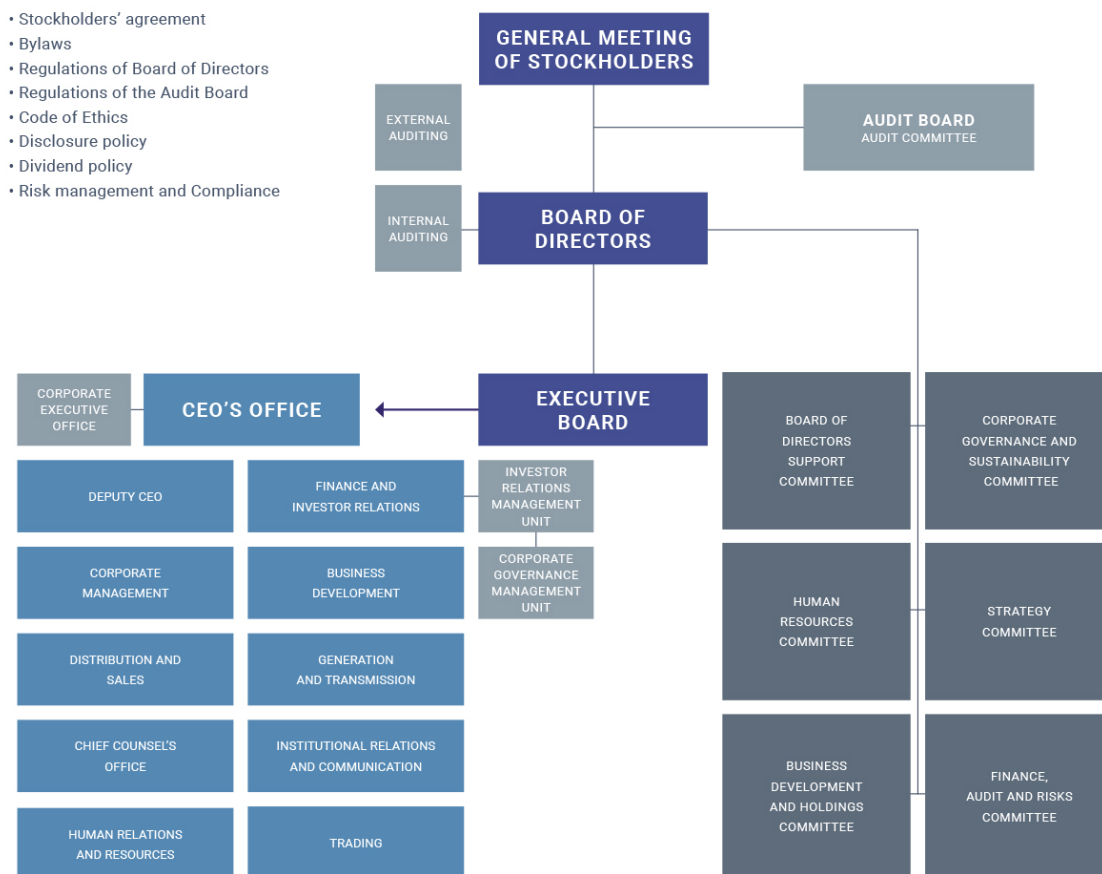
- Commitment to BMF&Bovespa Level 1 of Corporate Governance
- Corporate Governance and Sustainability Committee

## ■ Level 2 ADRs – NYSE

Among numerous steps taken to maintain a transparent and well-structured governance model, Cemig adopts the Best Corporate Governance Practices recommendations of the Brazilian Corporate Governance Institute (IBGC). They prioritize trust, integrity, and respect for stockholders, investors, clients, employees, suppliers, society and government.

Learn more about Cemig's corporate governance model on the Company's [Investor Relations website](#).

This chart shows the structure and principal mechanisms of Cemig's corporate governance:



Since 2001, Cemig has adopted the *São Paulo Stock Exchange Level 1 Listing Corporate Governance Practices*. These are given on the [BM&FBovespa](#) website.

Cemig is a listed company with public and private-sector stockholdings. The controlling stockholder is the **State of Minas Gerais**, which holds 50.96% of the common (voting) shares. The second largest stockholder is **AGC Energia S.A.**, holder of 20.05% of the common stock, followed by the **Brazilian federal government**, through BNDES Participações S.A.

('BNDESPar'), with 12.92% [Note: There is a Stockholders' Agreement, signed in 2011 between these three largest stockholders.](#)

At the EGM held on April 29, 2016, AGC Energia nominated three of the 15 elected members of the Board of Directors. The term of office of the directors elected at that meeting expires in April 2018.

Other components of Cemig's corporate governance practices are:

- [Internal Regulations of the Board of Directors](#)
- [Internal Regulations of the Audit Board](#)
- [By-laws with distinctive structural requirements binding management](#)

Cemig's [by-laws](#) establish a distinctive, pro-market dividend policy, as can be seen in the *Capital Markets* section of this report. Among other subjects, the by-laws:

- require investments to be concentrated in the Company's core business;
- set out senior management's obligations and limits of autonomy, based on the Long-Term Strategic Plan; and
- establish the Company's borrowing limits, thus reducing insolvency risk.

## GENERAL MEETINGS OF STOCKHOLDERS

G4-37

In accordance with current law, the Annual General Meeting (AGM) is held each year before the end of April. Extraordinary General Meetings (EGMs) may be held at any time in the year, as necessary. Both are called at least 30 days in advance. Convocation must be published through the CVM, on the Company's Investor Relations website, and in major national newspapers.

The dates of the meetings held in 2016, a summary of their main decisions, and the dates of meetings so far scheduled for 2017, can be found in Cemig's [Corporate Events Calendar](#).

In 2016, four Extraordinary General Meetings of Stockholders were held, as well as the mandatory Ordinary (Annual) General Meeting (held on April 29).

Comments, suggestions or recommendations to general meetings may be e-mailed to: [ri@cemig.com.br](mailto:ri@cemig.com.br), or made on the Cemig Investor Relations [website](#).

## DIRECTORS AND OFFICERS

G4-35


Cemig's management is exercised by a Board of Directors, an Executive Board and a permanent Audit Board. The Board of Directors is elected by the Annual General Meeting of Stockholders. Its members elect their Chair and Vice-Chair, and appoint the Executive Officers – the members of the Executive Board.

G4-40

The Board of Directors consists of 15 sitting members, and a substitute member for each, all elected by the stockholders. They have differing, complementary backgrounds and experience. Of the current sitting members, one was indicated by the stockholder José Pais Rangel, one was jointly indicated by the Stockholder José Pais Rangel and the representative of Geração Futuro L. Par FIA (in the name of minority stockholders with voting rights), eight were elected by the controlling stockholder, the State of Minas Gerais, four by AGC Energia S.A. and FIA Dinamica Energia, and one by BNDESPar. Four of the present sitting members are considered to be 'independent members' by the [Brazilian Corporate Governance Institute criteria](#). All members of the Board of Directors and their substitutes serve for periods of office of two years, which may be renewed on expiration. The periods of office of the present members of the Board of Directors expire at the Annual General Meeting of Stockholders to be held in April 2018.

G4-41

G4-51

The Board of Directors met 32 times in 2016, making decisions on issues ranging from strategic planning to investment projects. At the start of each meeting, members are invited to indicate whether they have any conflict of interest 

Note: There is no cross-membership between the highest governance body of Cemig and other bodies of management (such as membership of other boards, holding of positions on both the Executive Board and the Board of Directors, etc.). Also, there is no significant crossover stockholding with suppliers or other stakeholders.

in

relation to the items on the agenda.

The [Internal Regulations](#) 

Note: Diversity is not formally taken into account in the nomination and selection of the members of Cemig's highest governance body, nor its committees.

of the

Board of Directors describe the composition, election, term of office, principal responsibilities and duties of the Board of Directors.



Committees of members of the Board of Directors have been in existence since 2006: their role is to review and discuss, in advance, matters to be decided by the Board. The duties of each committee can be seen on the Company's website. Among these committees, we highlight the Corporate Governance and Sustainability Committee, in which senior management considers and debates economic, environmental and social topics.

Cemig's Executive Board has 11 members, whose functions are specified in the by-laws. Its members are elected, and may be removed at any time, by the Board of Directors. They serve for three-year terms of office, and may be re-elected. They may simultaneously hold non-remunerated management positions in Cemig's subsidiaries and/or affiliates. The period of office of the present Chief Officers expires at the first meeting of the Board of Directors held after the Annual General Meeting of 2018.

The Executive Board held 65 meetings in 2016.

Cemig's Strategic Planning process is conducted by the Company's 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 Company's importance and commitment to sustainability are explained in the vision. Cemig has as its Future Vision "To consolidate in this decade as the largest group in the national electricity sector in market value, with presence in gas, world leader in sustainability, admired by the customer and recognized for strength and performance."

Cemig has a specific area responsible for corporate management of sustainability issues, acting as follows:

- Prospecting and analysis of trends in sustainability, through research and studies of national and international best practices;
- Elaboration of the strategy of action of the company, based on trends and best practices in sustainability;
- Establishment of corporate guidelines; and
- Acting on topics that are transversal to the business areas, permeating all of Cemig's boards.

The Audit Board has the additional responsibility of reviewing all non-operational complaints forwarded to it by the Ethics Committee. These complaints, made through the 'Whistleblower's Channel' on Cemig's Intranet, are sorted into two categories, operational and non-operational. The Audit Board considers every non-operational complaint, and proposes a course of action to be carried out by the Internal Auditors. Cemig's Audit Board acts as an alternative to the Audit Committee, under the exemption allowed by Rule 10-3A of the Exchange Act, regulated by SEC Release 82-1234. The Audit Board held 14 meetings in 2016.

The members of the Audit Board are also elected by the Shareholders' Meeting. The Audit Board is multidisciplinary and composed of five members. The current term of office expires at the Annual Shareholders' Meeting to be held in May 2017.

The remuneration of the Board of Directors, the Executive Board and the Audit Board, and the payment policy, is stated in the [minutes of the Annual General Meeting of April 29, 2016](#).

## RISK MANAGEMENT DMA

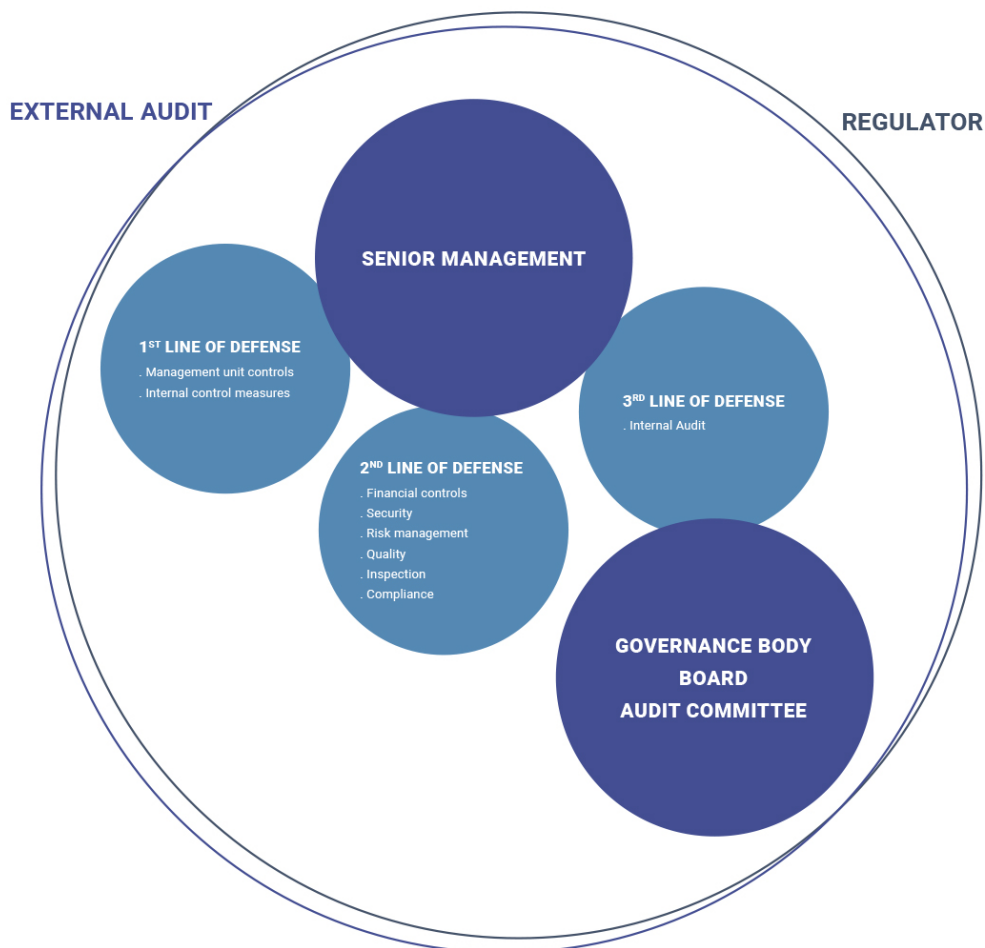
Corporate risk management is an integral part of Cemig's corporate governance. It identifies events that could interfere in the process of the Company achieving its strategic objectives. The intention is to provide senior management with information for taking of decisions, thus preserving the Company's value. The practice of risk management is thus a competitive differentiation factor to be used not only defensively, but also as an opportunity for improvement. Structuring and analysis of operations from the point of view of risk management help optimize investment in the control of the activity – reducing costs and losses, improving performance, and consequently helping the Company achieve its targets.

A further important element of Cemig's risk management is the Corporate Risk Monitoring Committee (CRMC), which has the following responsibilities: (i) to propose, for approval by the Executive Board, guidelines and procedures to be adopted in the Corporate Risks Monitoring process, to make the process effective and ensure its continuous improvements; (ii) to continually monitor the Company's context and matrix of corporate risks, to identify key risks and recommend priority mitigating actions to be proposed to the Executive Board; and (iii) to monitor the structure of internal controls, and actions taken, to minimize events that could limit the Company's ability to meet its strategic objectives.

In 2013 a new technological platform was put in place for risk management – the SAP RM (Risk Management) module. This enabled the process of mapping of risks to take place continuously, since updating of information, verifications and assessments of the controls and plans of action become scheduled tasks to be executed by the people responsible within the system itself. This results in all the agents involved in risk management having clearly specified roles and responsibilities, also minimizing costs and use of employee time for these activities and controls. In addition, there is a flow analysis carried out by an independent group in the Company, for periodic evaluation of the controls for the purpose of auditing the effectiveness of the process.

Also in 2016, the Mapping of 'Top Risks' was orientated by the subject areas specified as priority by the Executive Board and the Board of Directors. These risks were mapped according to an internal methodology, and recorded in the specific corporate risk management system. Also worth of note is the incorporation of ten Top Risks of 'Fraud and Corruption' to the corporate risk matrix, enhancing the Company's controls environment. The Top Risks are continually reported to the Executive Board, as are the recommendations by the CMRC for dealing with each case, in accordance with a flow pattern approved by the Committee.

In a new updating of the Company's risks management policy, this process was given a holding-company status, so that it now orients not only Cemig D and Cemig GT but also all the wholly-owned subsidiaries. In other highlights of the new version of the policy, it has the option to specify the degree of risk appetite to be followed by the Company; it is oriented by principles reflecting best market practices; and, especially, it has roles and responsibilities according to the 'Three Lines of Defense' governance model. This model is a simple and effective way to improve communication in management of risks and internal controls, by clarifying essential roles and responsibilities. The model presents a new point of view about operations, helping to ensure continuous success of risk management initiatives, and is applicable to any organization whatever its size or complexity.



Cemig always considers the precautionary principle in risk management processes, in planning of operations and in development of new business initiatives. During planning, all the factors that might present risks to health and/or safety of employees, suppliers, clients, the general population or the environment are taken into account.

Even while not yet discussing its risks with all its external stakeholders, the Company is making progress in the risk management process. Planned steps include consolidation of the model in the other companies of the Cemig Group, continuous raising of awareness of employees, including senior management, and enhancement of the tools for monitoring risks, ensuring continuing improvements in the process.

All Cemig's regulatory processes are monitored and reviewed regularly by the Committee for Regulatory Affairs (CAR), made up of representatives of all management departments. The committee is responsible for evaluating and offering proposals for contributions at public hearings held by Aneel and the Mining and Energy Ministry.

There is also an automated computer system – named 'Condor' – for monitoring of regulatory obligations: this keeps track of deadlines and provides for compliance with requests and obligations imposed by industry bodies. The Regulatory Obligations Fulfillment Index ('ICOR') regularly is used to evaluate this monitoring.

For more information see: Note 4.1 at Cemig's Standardized Financial Statements – [DFP 2016](#)

## CEMIG'S STRATEGY

Brazil's electricity sector suffers when GDP falls since the volume of its market, revenues and the speed of companies' growth are reduced. With the retraction of the market, sale prices of electricity can also fall, reducing the revenue and profitability of generating companies.

In recent years, there has also been a significant increase in the sector's indebtedness. Brazilian companies have had difficulty in obtaining financings at low cost. Default by clients has increased, and leading companies in the sector, as a result, have seen their stock prices decline.

Meanwhile, renewals of distribution concessions set rigorous regulatory control on companies in terms of economic and financial equilibrium, and quality of service provided. The distribution and transmission companies are contractually required to adapt their costs to a pattern specified by regulations.

With all these factors, 2016 was a year of challenges for Cemig. Over the course of the year, new strategy orientations were decided, and a considerable range of actions taken to comply with them. These include: a complete review and solution for the Company's debt; review and change of its business portfolio – including sale of assets; adaptation of Cemig D to the new regulatory requirements; a new human capital strategy; and increased productivity.

### Cemig's new Strategic Guidelines

## NEW CEMIG STRATEGIC GUIDELINES



The challenges for resolving Cemig's debt profile are significant: the aim is to achieve optimal indicators through refinancing, adjustment of the debt profile and lengthening of maturities.

In adapting the portfolio, Cemig will give priority to investment opportunities based on funds available and on the returns expected for each business, strengthening its position in its core businesses.

Cemig's new Human Capital Strategy will reinforce its four main pillars, as shown in the diagram below.

Finally, a key aim is to increase productivity as a way of combining the need to optimize costs with long-term administration of human capital and the employee relationship.



## Objectives and Goals

This table lists Cemig's socio-environmental and economic goals and targets:

STRATEGIC OBJECTIVE	MATERIAL ASPECT	GOAL	STATUS	DEADLINE	GRI INDICATORS
Maximize value for stockholders in a sustainable manner and in compliance with the Long-term Strategic Plan	Economic performance	– to keep the Company's consolidated indebtedness less than or equal to 2 (two) times Ebitda (profit before interest, taxes, depreciation and amortization)	In accordance with a decision of the General Meeting of Stockholders of March 30, 2017, the Board of Directors authorized that exceptionally in 2016, for reasons relating to a temporary situation, the upper limit for the ratio of net debt to Ebitda could be 2.5. At the end of 2016 net debt was 4.4 times the Ebitda for the year.	Annual	G4-14, G4-45, G4-47
		- to keep the Consolidated ratio (Net debt) / (Net debt + Stockholders' equity) within an upper limit of 40%.	In accordance with a decision of the General Meeting of Stockholders of March 30, 2017, the Board of Directors authorized that exceptionally in 2016, for reasons relating to a temporary situation, the upper limit for this ratio could be 50%. At the end of 2016, this net debt ratio was 55%.	Annual	
	Share price	Distribute at least 50% of Net profit as dividends.	The proposed distribution of the result for the year 2016, subject to the approval of the General Shareholders' Meeting of May 12, 2017, consists in the payment of R \$ 204 million in the form of mandatory minimum dividends to be paid in two equal installments (up to June 30, 2017 and as of December 30, 2017). Additionally, in December 2016, the Company declared the payment of R \$ 380 million in the form of interest on equity to be paid in two equal installments (up to June 30, 2017 and through December 30, 2017) with funds Of the Profit Retention Reserve account.	Annual	
Increase cash flow	Investments for growth	Execute investments of R\$ 4.9 billion in Cemig D (Distribution)	In 2016 investments of approximately R\$ 845 million were made which, added to the investments since 2013, result in an aggregate amount of R\$ 4.945 billion, reaching the target to be met by 2017.	2017	EC1, EC2, EC8, EU26
		To serve 1.2 million new consumers in the urban area	A total of 809,229 new connections have been made.	2017	
	Economic performance	Increase cash flow: Ebitda of at least R\$ 6.447 billion	In 2016, consolidated Ebitda was R\$ 2.638 billion.	2017	EC1, EC2, EC8,
Ensure sustainability	Water	Reduce water consumption to	Water consumption is now 78.8% lower than in	2020	EN8, EN9,

		4% less than in 2011	2011		EN10
	Electricity	Reduce consumption of electricity to 4% less than in 2011	Consumption is now 7.3% below its level of 2011	2020	EN3, EN4, EN5, EN6, EN7
		IEPE – Plant Energy Planning Efficiency Index – to be above 92%.	The IEPE was 93.44% in 2016	2017	EN8, EN9
	Climate change	Reduce the intensity of greenhouse gas emissions, measured in tCO <sub>2</sub> eq/MWh, to 8% less than in 2014	The intensity of greenhouse gas emissions, measured in tCO <sub>2</sub> eq/MWh, has been reduced to 97.5% if compared to their level of 2014	2021	EN15, EN16, EN17, EN18, EN19, EN20, EN21
	Waste	To have 99% of industrial wastes recycled/regenerated or sold	In 2016, 99.4% of industrial wastes were recycled/regenerated or sold	2020	EN23, EN24
	Biodiversity	Maximum total affected biomass 1,772 KG	In 2016, affected biomass was 1,771.25 kg - details are under Biodiversity.	2017	EN11, EN12, EN13, EU13
		Complete the study The Effectiveness and Sustainability of Riparian Forest at the Volta Grande Hydroelectric Plant, Minas Gerais	The study was completed in 2016.	2016	
		Conclude the urban arborization inventory in Belo Horizonte, and insert the product as a routine work planning and programming tool	By December 2016 the inventory contained approximately 360,000 trees. About 120,000 have yet to be included, for completion of the work.	2017	
		Incorporate the methodology of Integrated Vegetation Handling as a standard procedure for opening of low voltage pathways	The alternatives for contracting this type of service are under analysis.	2017	
	Comply with legislation	Revise the Statement of Ethical Principles and Code of Professional Conduct	The Statement of Ethical Principles and Code of Professional Conduct was revised and published in 2016	2016	HR2, SO4, G4-56
	Communities	Prepare the reduced and simplified version of the Annual and Sustainability Report	The version has been prepared and published to all employees	2016	HR3, EU24
	Management of suppliers	Please, see table of targets at the item Management of Supply Chain of this report	In 2016, this index was 65.46% in 2016.	2016	HR1, HR5, HR6
Ensure the quality levels set by the regulator	Quality of electricity supply	SAIDI to be below 10.83 hours	The figure was found to be 11.7 hours in 2016, due to an increased component of outages due to accidents. Further efforts will be made on programmed outages, to bring the total SAIDI within the target.	2017	EU6, EU29
		SAIFI to be below 7.56	Compliant. Measured SAIDI was 5.64.	2017	EU6, EU28
	Management of losses	Target for total losses: below 10.79%	Total losses in 2016 were 13.46%. Cemig has continued to make efforts to improve	2017	EU6, EU12

			the manageable factors, to meet the target.		
	Clients and consumers	Aneel Consumer Satisfaction Index (IASC) of 72	In 2016 IASC was 64,04	2021	PR5
	Clients and consumers	Perceived Quality Satisfaction Index above 82%	The Perceived Quality Satisfaction Index in 2016 was 70.1%	2017	PR5
Develop strategic competences, sustainably	Employees	Review the jobs and remuneration plan	The jobs and remuneration plan was reviewed in 2015 and is part of the Strategic HR Program, one of the highlight programs of the area in 2016.	2016	LA2
	Employees	Review of the Performance Management Model	The Performance Management Model was reviewed in 2015 and, after revision, Performance Evaluation was resumed in 2016.	2016	LA11
	Employees	Training efficiency index to be above 75%	Achieved: 93.43%	2016	LA9, LA10
	Employees	Average time of training per employee to exceed 9 hours	In 2016 the company carried out 20.56 hours of training per employee.	2016	LA9, LA10
		Average time of training per employee to exceed 12 hours	-	2017	
Establish safety as a value in the corporate culture	Health and safety	In the quest for the Zero Accidents target, to have the accident rate of the workforce less than 1.80.	The 2016 objective for the Zero Accidents target program was met, with the accident rate of the workforce at 1.79.	2021	LA5, LA6, LA7, EU16
Be an innovator in technological solutions for the business	Innovation	To spend R\$ 290 million in research and development	In 2015 more than 156 projects were in progress for investment of more than R\$ 89 million.	2018	EU8
		Perform simultaneous reading and printing of electricity bills for 7 million clients	In 2016, consolidated Ebitda was R\$ 2.638 billion.	2016	EU8

## CONCESSIONS AND INVESTMENTS DMA

Cemig and its subsidiaries have the following concessions or authorizations, from Aneel:

SDG9

EU6

EU10

EC7



	LOCATION	DATE OF GRANT OR AUTHORIZATION	DATE OF MATURITY
GENERATION			
Hydroelectric Power Plants			
São Simão <sup>1</sup>	Rio Paranaíba	Jan-65	Jan-15
Emborcação	Rio Paranaíba	Jul-75	Jul-25
Nova Ponte	Rio Araguari	Jul-75	Jul-25
Jaguara <sup>1</sup>	Rio Grande	Aug-63	Aug-13
Miranda <sup>1</sup>	Rio Araguari	Dec-86	Dec-16
Três Marias	Rio São Francisco	Jan-15	Jan-45
Volta Grande	Rio Grande	Feb-67	Feb-17
Irapé	Rio Jequitinhonha	Jan-99	Feb-35
Salto Grande	Rio Santo Antônio	Jan-15	Jan-45
Queimado	Rio Preto	Nov-97	Jan-33
Itutinga	Rio Grande	Jan-15	Jan-45
Camargos	Rio Grande	Jan-15	Jan-45
Piau	Rio Piau / Pinho	Jan-15	Jan-45
Gafanhoto	Rio Pará	Jan-15	Jan-45
PCH Cachoeirão	Rio Manhuaçu	Jul-00	Jul-30
UHE Santo Antônio	Rio Madeira	Jun-08	Jun-43
UHE Baguari	Rio Doce	Aug-06	Aug-41
PCH Pipoca	Rio Manhuaçu	Sep-01	Sep-31
Others	Various	Various	Various
Wind <sup>2</sup>			
Morro do Camelinho	Gouveia – MG	Mar-00	Jan-17
Praias do Parajuru	Berberibe – CE	Sep-02	Aug-29
Volta do Rio	Aracajú – CE	Dec-01	Aug-34
Praia de Morgado	Aracajú – CE	Dec-01	Aug-34
Thermal			
Igarapé	Juatuba – MG	Jan-01	Aug-24
Barreiro	Belo Horizonte – MG	Fev-02	Apr-23
TRANSMISSION			
Rede Básica	Minas Gerais	Jul-97	Jul-15
Subestação – SE Itajubá	Minas Gerais	Oct-00	Oct-30
DISTRIBUTION			
	Minas Gerais	Jan-16	Dec-45

<sup>1</sup>The extension of the concession as provided in the Concession Agreement was not considered. See details in the note 4 of Cemig's Standardized Financial Statements - DFP 2016.

<sup>2</sup>Wind generation activity is granted upon authorization.

## Generation concessions

In the generation business, the Company sells electricity: (1) through auctions, to distributors to meet the demands of their captive markets; and (2) to Free Consumers in the Free Market (Ambiente de Contratação Livre, or ACL). In the Free Market, electricity is traded by the generation concession holders, small hydro plants (PCHs, or SHPs), self-producers, traders, and importers of electricity.

## Auctions of electricity generation concessions

In November 2015, Cemig GT took part in Auction 12/2015, and won the concessions of Lot D. This lot comprises 18 plants, as shown in the table below – for five of which the concession had been previously held by Furnas S.A.:

POWER PLANT	DATE OF GRANT MATURITY	INSTALLED CAPACITY (MW)	PHYSICAL GUARANTEE (MW AVERAGE)
UHE Três Marias	Jan-45	396.00	239.00
UHE Salto Grande	Jan-45	102.00	75.00
UHE Itutinga	Jan-45	52.00	28.00
UHE Camargos	Jan-45	46.00	21.00
PCH Piau	Jan-45	18.01	13.53
PCH Gafanhoto	Jan-45	14.00	6.68
PCH Peti	Jan-45	9.40	6.18
PCH Tronqueiras	Jan-45	8.50	3.39
PCH Joasal	Jan-45	8.40	5.20
PCH Martins	Jan-45	7.70	1.84
PCH Cajuru	Jan-45	7.20	2.69
PCH Paciência	Jan-45	4.08	2.36
PCH Marmelos	Jan-45	4.00	2.74
PCH Coronel Domiciano <sup>1</sup>	Jan-45	5.04	3.59
PCH Dona Rita <sup>1</sup>	Jan-45	2.41	1.03
PCH Ervália <sup>1</sup>	Jan-45	6.97	3.03
PCH Neblina <sup>1</sup>	Jan-45	6.47	4.66
PCH Sinceridade <sup>1</sup>	Jan-45	1.42	0.35
		<b>699.59</b>	<b>420.27</b>

<sup>1</sup> Previously held by Furnas S.A.

UHE= Usina Hidrelétrica (HPP - Hydroelectric Power Plant)

PCH= Pequena Central Hidroelétrica (SHP - Small Hydroelectric Power Plant)

#### Renewal of the concessions of the Jaguará, São Simão and Miranda Hydroelectric Plants

The company believes that it has the right to completion of periods of these concessions, based on the original terms of the Concession Contracts, and is currently arguing this in the courts. For more detailed information please see Note 4 to the financial statements (DFPs).

Administrative proceedings: Subsequent event – Material Announcement of February 21, 2017

Subsidiarily to its request for extension for 20 years of the concessions of the Jaguará, São Simão and Miranda Hydroelectric Plants, the Company requested opening of an Administrative Proceeding under Paragraph 1-C of Article 8 of Law 12783/2013, to the benefit of Cemig GT.

For more details on the request for extension of the concession, [click here](#).

#### Power transmission concessions

In 2016 there were no material developments impacting the concessions for Cemig GT's transmission lines.

#### Power distribution concessions

Cemig D has the concession from Aneel for commercial exploration of the activity of distribution in the greater part of the State of Minas Gerais, expiring in December 2045.

As determined by the concession contract, all assets and facilities that are linked to the provision of the distribution service and which have been created by the concession holder are considered reversible and part of the assets of the related concession. These assets are automatically reverted to the Grantor at the end of the contract, and are then valued to determine the amount of the indemnity payable to the concession holder, subject to the amounts and the dates on which they were incorporated into the electricity system.

The Company does not have obligations to make payment in compensation for commercial operation of the distribution concessions, but is required to comply with requirements related to quality, and investments made, in accordance with the concession contract.

#### Renewal of distribution concessions

On December 21, 2015 the Company signed, with the Mining and Energy Ministry, the Fifth Amendment to its concession contracts, extending its electricity distribution concessions for a further 30 years, as from January 1, 2016.

The principal characteristics and terms of the Amendment are as follows:

- The annual tariff adjustment was to take place on May 28 of each year, the first to be in 2016; for this repositioning the rules specified in the previous concession contract were to be applied. For the subsequent tariff adjustments the rules in Clause 6 of the Amendment will be applied.
- Limitation of distribution of dividends and/or payment of Interest on Equity to the minimum established by law, if there is non-compliance with the annual indicators for outages for two consecutive years, or for three in any five years, until the regulatory parameters are restored.
- Requirement for injections of capital from the controlling shareholder in an amount sufficient to meet the minimum conditions for economic and financial sustainability.
- Subject to the right to full defense and right of reply, for the concession to be maintained, compliance is required with efficiency criteria for continuity of supply and for economic and financial management, as follows:
  - for five years from January 1, 2016, any non-compliance for two consecutive years, or non-compliance with any of the conditions at the end of five years, will result in extinction of the concession;
  - as from January 1, 2021, any non-compliance for three consecutive years with the criteria of efficiency in continuity of supply, or for two consecutive years with the criteria of efficiency in economic and financial management, will result in proceedings to establish expiration of the concession.

#### Investments

Cemig operates in generation, transmission, sale and distribution of electricity, energy solutions (Efficientia S.A.), and distribution of natural gas (Gasmig). The Cemig Group comprises: the holding company, Companhia Energética de Minas Gerais – Cemig, its wholly-owned subsidiaries Cemig Geração e Transmissão S.A. ('Cemig GT') and Cemig Distribuição S.A. ('Cemig D') – and other interests, comprising a total of 232 companies, 16 consortia and 2 FIPs (Equity Investment Funds), resulting in assets in 22 Brazilian states, and the Federal District (the nation's capital). Below is a description of the principal companies in the Group:

#### Aliança

Aliança Geração de Energia S.A. ('Aliança') is one of Cemig's vehicles for operation in generation and trading of electricity. It was incorporated in 2014 as a strategic partnership between Vale S.A. and Cemig GT, based on the two companies subscribing their shares in Aliança by transfer to it of their interests in the following generation assets: Porto Estrela, Igarapava, Funil, Aimorés, Capim Branco I and Capim Branco II; and in Candonga (formerly owned only by Vale). It is now one of Brazil's leading private-sector generation companies, with installed capacity of 1,158 MW, and guaranteed offtake of 652 MW average.

Vale and Cemig GT respectively hold 55% and 45% of the total capital, exercising joint control of the company. It began operating on March 1, 2015.

Aliança's generation plants have long-term concession contracts; all its output is sold through contracts with Vale, Cemig GT and the Regulated Market – providing a stable and predictable revenue for the coming years.

## The Special - Purpose Companies – SPCs of Lot D

In Aneel's Auction to Contract Hydroelectric Plant Concessions on the Physical Guarantee and Power Quotas Regime, on December 2015, Cemig GT won Lot D, comprising 18 hydroelectric plants. The concessions of all of these plants had been terminated.

Of the 18 plants in Lot D, 14 were already previously operated by Cemig, the most important being Três Marias, Itutinga and Salto Grande. Further to these, Cemig GT also won the concessions for four other hydroelectric plants: Ervália, Coronel Domiciano, Sinceridade and Neblina.

Seven new special-purpose companies were created to manage these concessions. Together they have aggregate installed capacity of 699.59 MW, and physical offtake guarantee of 420.57 MW.

## Renova

Renova Energia S.A. (**Renova**), founded in 2001, focuses on renewable power sources: wind plants, small hydroelectric plants and solar plants.

In its 15 years of operation it has sought competitiveness and sustainability of the business, with a growth outlook. One of its distinguishing marks is that it operates throughout the renewable energy sector's value chain – from planning and conception through construction of projects, their operation and maintenance, and power trading.

2016 was a period of major challenges for the Brazilian market as a whole and especially for Renova. The renewables sector continued to grow, but macroeconomic turbulence in Brazil and other countries required companies to exercise caution.

In 2016 Renova's strategy centered on three main points: execution of the projects under construction; adaptation of the capital structure; and revision of the business plan.

A landmark for Renova in 2016 was completion of the Alto Sertão II wind farm, which has been fully operational since the first quarter of 2016.

In 2016 Cemig GT increased its equity interest in Renova through paid subscriptions of shares. Cemig now directly owns 34.15% of the share capital of Renova, plus a further 15.68% indirectly through Light.

## Taesa

Transmissora Aliança de Energia Elétrica S.A. (Taesa) is an unlisted company controlled by Cemig, which holds 42.72% of the voting capital and 31.54% of the total capital. Taesa is the growth vehicle for Cemig in the transmission segment: it builds, operates and maintains transmission lines in all the regions of Brazil.

In 2016, Taesa won five auction lots for power transmission. In April it acquired Lot P in Aneel Auction 013/2015, with Annual Permitted Revenue (RAP) of R\$ 56 million, and capex requirement of R\$ 276 million. In the second stage of this auction, 013/2015, held in October, Taesa won four lots: one on its own; two as a member of the Columbia Consortium (50% Taesa, 50% CTEEP); and one through its affiliated company Empresa Amazonense de Transmissão de Energia S.A. (EATE). On the basis of its proportionate interests this represents an RAP of R\$ 315.2 million, an investment of R\$ 1.6 billion, and 1,500 km of transmission lines.

Taesa continues to have a solid position in the market. Over the year 2016 it invested R\$ 600,000 in an environmental education program, reaching 10,372 people during the year, including landowners, teachers, pupils, and residents of the areas neighboring Taesa's projects in the states of São Paulo, Rio Grande do Sul, Goiás, Tocantins, Pernambuco, Piauí, Bahia and Rio Grande do Norte. Taesa also sponsored two environmental education projects, under the Rouanet Law: Environmental Education Workshops, held in eight public schools of Goiás, Bahia and Maranhão, for 3,000 children, comprising presentation of a play, workshops on precepts of education and sustainability, and a workshop for teachers; and

eight presentations of the play/teaching project Clubinho do Planeta em Cena ('Little Planet Club') in public schools of two towns in Piauí – São João do Piauí and Ribeiro Gonçalves – to a total of approximately 1,132 children.

## Light

Light Serviços de Eletricidade S.A. (Light) is a subsidiary of Cemig, which directly owns 26.06% of the total share capital, and has indirect holds a further interest of 17.32%.

2016 was a year in which Light experienced a transition to full establishment of a strong results-based culture of continuous improvements, reduction of costs, optimization of processes and implementation of new operational models.

The Company mobilized to provide power supply on the basis of enhanced security, safety and reliability, completing its plans for maintenance of networks, works on expansion of the network and new connections, plans for operation, and contingencies. One highlight was its involvement in the construction of the Olympic Substation, together with Furnas Centrais Elétricas S.A., to meet the needs of the 2016 Olympics held in Rio de Janeiro.

In another milestone, a new model was decided for combat of non-technical losses. In light of the macroeconomic conditions and a new diagnosis of the causes and location of losses, Light modified its strategy and intensified activity in medium and high-income districts, through management measures aiming to recover and include larger volumes of electricity per client, and reduce expense per megawatt-hour recovered. Previously, combat of losses was capex-intensive, and the areas with the highest loss indices were in districts and communities with lower income and more frequent occurrences of violence.

In parallel, due to worsening of problems related to violence, Light expanded the partnerships with residents' associations, creating a relationship channel that increased dialog with the community and facilitated actions to recover lost supply. These measures also provided important information to the population on aware consumption of electricity, and the Social Tariff, enabling regularization of clients, and contributing to sustainable development.

On service to clients in general, the principal strategy was to reduce the cost of service, without any effect for the client, increasing both client satisfaction and service quality.

## Gasmig

Companhia de Gás de Minas Gerais - **Gasmig** is the exclusive distributor of piped natural gas in Minas Gerais, by grant of concession. It serves the industrial, residential and commercial markets and the thermal electricity generation industry, providing compressed natural gas (CNG), liquefied natural gas and vehicle natural gas. Cemig holds 99.57% of the share capital of Gasmig.

Due to expansion of its residential segment, Gasmig's client base increased by 267.5% in 2016, from 4,215 consumer units in 2015 to 15,490 in 2016.

Gasmig invested R\$ 50 million in expansion of its Natural Gas Distribution Networks in the State of Minas Gerais, with construction of 58.9 km of gas pipelines in Greater Belo Horizonte, the South of Minas and Juiz de Fora, to serve commercial and industrial consumers.

In 2016 Gasmig put its 'Green Fleet Project' in place in the town of Andradas, in the South of Minas Gerais State – with a target of reducing fuel expenses by 60%, and CO<sub>2</sub> emissions by more than 20%.

## Important investments in 2016

### The Santo Antônio Power Plant

By the end of 2016 the Santo Antônio Hydroelectric Plant, in which Cemig owns an interest of 18.13%, was working at its full power generation capacity, with all 50 of its rotors operating. The plant brought the last fifteen rotors into operation during the year. Construction of the Santo Antônio Plant consumed investment of approximately R\$ 24 billion.

It has generating capacity for 3,568 MW, producing a clean and renewable product, enough for the consumption needs of more than 45 million Brazilians. Of its 50 rotors, 44 will supply the national grid, while the other six will be dedicated exclusively to the states of Rondônia and Acre, contributing to the safety and stability of electricity system in that region.

#### The Belo Monte Power Plant

The Belo Monte Hydroelectric Plant, in which Cemig has an interest of 12.77%, indirectly through the companies Amazônia Energia S.A. and Aliança Norte Energia Participações S.A., has two machine rooms – named Belo Monte and Pimental. The former is the principal machine room, with generation capacity of approximately 11,000 MW; Pimental is an auxiliary unit, with capacity of approximately 233 MW. The Belo Monte plant will provide 7.5% of the country's installed capacity; it will be the largest hydroelectric plant that is 100% Brazilian, and the fourth largest in the world. The project involves investments of approximately R\$ 35.3 billion (in January 2017 currency).

The first generating units started commercial operation in the first half of 2016. The first unit of the principal machine room, and the first unit of the complementary machine room, both began generating in April. On December 31, 2016 there were four units operating at the Belo Monte site and four at the Pimental site, adding 2,600 average MW of physical offtake guarantee level to the national grid system. It is expected that all the turbines of the plant will be in operation by January 2019.

#### Guanhães Energia

Guanhães Energia S.A. is a special-purpose company created to build four small hydroelectric plants (SHPs): Dores de Guanhães, Senhora do Porto, Jacaré and Fortuna II, in Minas Gerais state, with total installed capacity of 44 MW. Cemig owns 49% directly, plus 22.12% held indirectly.

Works of construction of the SHPs have been halted since December 2015 due to rescission of the construction contract as a result of default by the construction consortium. Studies are in progress for restructuring of the project to make resumption of works possible.

In spite of the delay in the works, we highlight the progress made on the socio-environmental aspects: forest and speleological offsetting measures have been approved, which will enable protection and recovery of larger areas than those covered by the works. With the environmental activities at completion phase, the Operation Licenses of the four SHPs are expected to be obtained in 2017. The first generating units are expected to start commercial operation in the first half of 2019.

#### Cemig D: The Distribution Development Plan (“Plano de Desenvolvimento da Distribuição – PDD”)

This plan aims to increase the availability of electricity with continuity, quality, safety and the quantity required by clients, promoting social and economic development in Cemig D's concession area, through necessary investments in electricity assets for transport of power supply.

The program comprises projects in high, medium and low voltage, associated with expansion, strengthening, overhaul and renewal of Cemig D's assets, including building an expansion of substations, expansion, strengthening and overhaul of high, medium and low voltage distribution lines, replacement and installation of equipment in substations and distribution lines at medium voltage.

The five-year investment cycle (a requirement of the regulation) is for the period 2013–17. Cemig has approved expenditure of more than R\$ 4.7 billion for the period, distributed between the following macro projects:

- High voltage expansion and strengthening;
- Service to consumers and user access (Cemig participation);
- Improvements to the high voltage system;
- High voltage operation and maintenance;
- Medium and low voltage service to the urban market;
- Medium and low voltage service to the rural market.
- Low and high voltage Complementary Program (Cemig participation);
- Third party safety (Cemig participation);
- Overhaul and improvements to medium and low voltage networks;
- Medium and low voltage operation and maintenance;
- Change of metering/frontier metering;
- Environment; and
- Telecommunications.

In 2016 the total investment was R\$ 845 million, distributed throughout the state as follows:

THE DISTRIBUTION DEVELOPMENT PLAN	
Territory	R\$ Million
Noroeste	40.07
Norte	87.19
Médio e Baixo Jequitinhonha	24.53
Mucuri	7.92
Alto Jequitinhonha	26.12
Central	28.73
Vale do Rio Doce	8.57
Vale do Aço	15.31
Metropolitana	174.84
Oeste	37.56
Caparaó	8.47
Mata	15.39
Vertentes	10.80
Sul	39.74
Sudoeste	18.76
Triângulo Norte	51.12
Triângulo Sul	22.08
Diversos Municípios	228.01
Total	845.20

These investments ensure the sustainability of the distribution business, optimizing value for stockholders, with profitability and cash flow, and client satisfaction due to the guarantee of continuous electricity supply reaching more efficient levels of operational processes, compliance with the quality requirements set by the regulator, reduction of losses, and in general ensuring the availability of electricity for the market with safety and quality, within the environmental requirement.

## TECHNOLOGY AND INNOVATION DMA

EU7

One of Cemig's strategic objectives is the continuous quest for innovation, aiming for sustainability over the long term.

EU8

Corporate initiatives are taken for the purpose of creating value for the business, involving innovations in various directions, from innovation in products and processes to innovations in organization and marketing.

EC2

Development of innovation in products and processes means creation of goods and services able to increase the availability of the assets, reduce the lead time for service to the end-client, provide agility and mobility in access to the concession

holder and its services, increase the safety of workers and the system, and develop new work tools and more up to date equipment – among other benefits. This type of innovation occurs typically in the technical areas of Cemig using the methodology of Strategic Technological Management.

Cemig also makes innovations at the organizational and marketing level that can generate new business practices, a new approach in its external relationships, changes in the promotion of its principal product and aggregated services, and its positioning in relation to the market. Examples are: Joint purchases of materials and services among various companies of the group, seeking price and volume; new tools for development of people and their intellectual capital; tools for automation of processes – such as purchase and sale of electricity; tools for reduction of environmental impacts and litigation; strategic partnerships; spinoffs; technological cooperation agreements; creation of new client service channels; simultaneous client meter reading and bill printing; and new outlooks for dealing with and treating large clients and suppliers).

#### **Strategic Management of Technology ('GET – Gestão Estratégica de Tecnologia') "An instrument of competitiveness and optimization of corporate results"**

Aware that technology is a strategic input and a factor making business development and accretion of value to its products and services possible, in 1999 Cemig established its Strategic Technology Management (GET) methodology, in which technological strategies are aligned with entrepreneurial directives/guidelines. With this methodology Cemig aims to ensure use of the most appropriate technologies, and obtain rapid responses to changes in scenarios, preparing itself for the frequent changes in a market that is increasingly dynamic and competitive.

The GET methodology materializes through a technological process that is based on four strategic approaches: Strategic analysis, technological audits, technological action plans, and implementation and monitoring. Within this process, the Company uses tools including:

- technological prospecting and analysis of scenarios;
- identification of threats and opportunities, weak and strong points of the business;
- results arising from directives in the Corporate Strategic Planning process;
- identification of technological actions and projects, including Research and Development and Innovation programs of interests to the business; and
- enhancement and dissemination of the technological methodology and support to the businesses and companies.

The GET methodology, in its structure, operates on the strategic, tactical and operational levels.

At the strategic level technological policies are decided, and plans for technology, budgets, projects and strategic initiatives for technological/scientific development and innovation are approved. To support the Executive Board, Cemig has a Strategic Management of Technology, Innovation and Energy Efficiency Committee and a director-level management unit, responsible principally for fostering implementation of the GET and innovation in the Company. At the tactical level the result of the policies and initiatives are spread out in the various businesses and companies of the group. Constitution of the Technological Forums enables consolidation of a culture of innovation in the Company, and the direct participation of a specialist in strategic planning of technology and in technical auditing; and in support for decision in the various processes of management of innovation.

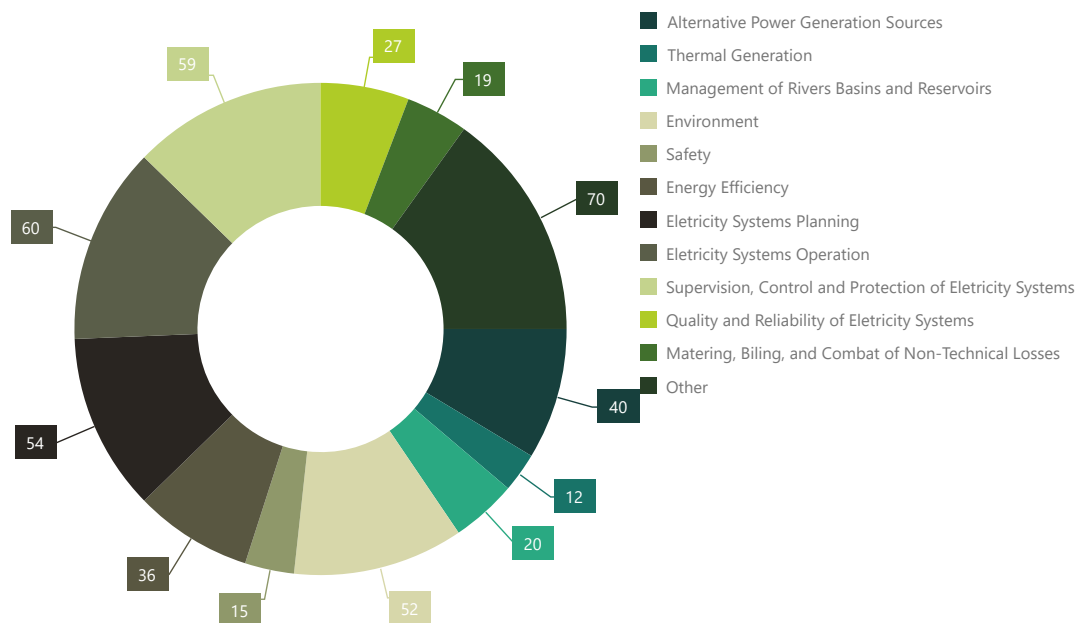
In this structure, Cemig also has a Management Unit responsible for intermediation between the tactical and operational levels, where projects, initiatives, and plans of action are materialized, through technological partnerships and agreements ready to be put in operation, also providing opportunities for creation of Centers of Technological Excellence. In this context, Cemig held the event Innovation from the Outside In and from the Inside Out, providing, among the participating companies, opportunities for technological partnerships, connections, launches of start-ups, meetings, etc.

#### **Research & Development (R&D)**



The Research and Development Program is considered to be an engine of innovation in Cemig, and uses the structure of the GET to select the best projects and technologies to be developed in the Company which are in line with the strategic directives. In 2016 Cemig invested approximately R\$ 23 million in R&D projects. This chart shows the types of project put into effect, by theme, in the last 10 years.

Projects by subject area - Last 10 years



## Intellectual property

Cemig coordinates its protection of intellectual property, analyzing the feasibility and other aspects of securing its rights to inventions, brands, software, internet domains and other creations, orienting applicants in preparation and monitoring of applications for protection, and custody and disclosure of patents, registrations and other intellectual property titles.

Among the benefits of patenting are trading of the invention, stimulus to creativity, promotion of the Company's image, and increased efficiency in work due to the use of the most appropriate technologies. Cemig is the Brazilian electricity utility with the largest number of patents deposited at the Instituto Nacional de Propriedade Industrial – INPI (National Industrial Property Institute); it has deposited 82 patents since 1992. At present it has 15 patents registered and 52 applications in progress. Two further patent applications were made in 2016.

So far, Cemig has not made any financial gains from the sale of rights of use or royalties for use of patents, but it has an advantage over competitors due its exclusive use of its patents, which most importantly relate to work safety and operational efficiency, generating tangible gains in productivity.

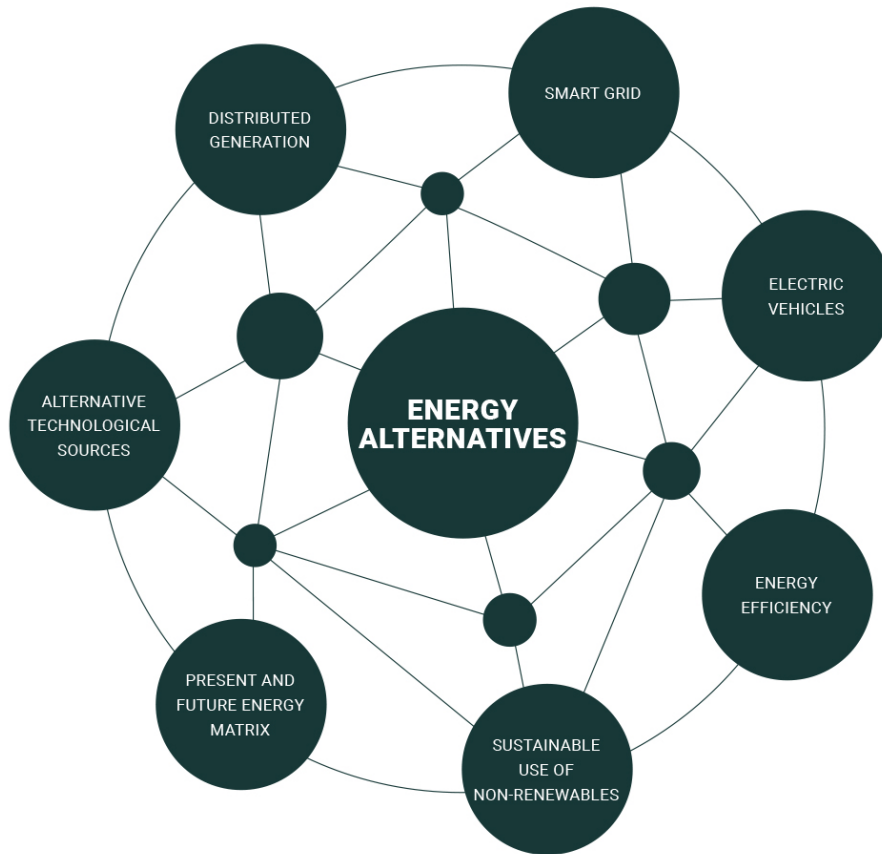
## The 'Lei do Bem' (Law of Good)

Since 2006 Cemig has used the benefits of the 'Lei do Bem' law, which allows spending on projects in technological research and innovation to be tax-deductible. Tax deductions so far total approximately R\$ 80 million.

To qualify for the benefit Cemig has to identify the innovation projects responsible for gains in quality and productivity, and those that have improved its processes.

## Alternative energy sources

In Cemig's view, the term 'Alternative energy sources' covers the whole energy chain, including transport, transformation, technological pathways, supply and storage, energy efficiency and final use of electricity. Thus it is that a wide range of current phenomena, techniques and trends are involved in, and mutually dependent elements of, the matrix of electricity supply: new sources, new technologies, distributed generation, the smart grid concept, electric vehicles, energy efficiency and better use of traditional energy resources. These 'energy alternatives' communicate with each other, as shown in the figure below.



The impacts relating to alternative energy sources are essentially positive or have positive lines of intention, as shown in this diagram:



More information on R&D projects can be found on Cemig's website.

## CLIENTS AND CONSUMERS

## CLIENTS AND CONSUMERS

Both Cemig's mission and its vision of the future highlight the strategic importance of seeking excellence in satisfaction of its clients.

The Company thus seeks to mitigate the risks associated with the subject, which occur in the regulatory scenario – in which the regulatory bodies and the consumer defense entities can impose financial penalties. To meet the quality standards demanded by the regulatory body and expected by clients, Cemig takes action to improve operational management, organization of the logistics of emergency services, and continuous inspection and preventive maintenance of substations,

and distribution lines and networks. It also invests in continually improving the qualifications of its professionals, in state-of-the-art technologies, and in standardization of work processes.

Relationship with consumers is a priority subject in Cemig, regularly reviewed both by management and the stockholders. This priority is expressed in the Mission, guided by the principle of operating with quality, resulting in client satisfaction; and in the Vision, which seeks admiration for the Company and its recognition for solidity and performance. For more information [click here](#).

Cemig has worked intensely on enhancement of its communication channels, whether they are via the web, in-person, or by telephone. Today Cemig's client can connect with the Company via mobile apps including *Cemig Atende* and *Telegram* and *Facebook*.

Cemig has also worked continuously on improvement of service through its Distribution Development Program (PDD) which, among other aims, seeks to reduce frequency and duration of electricity supply outages. The PDD comprises investments associated with expansion and renewal of assets – substations, and distribution lines and networks.

## RELATIONSHIP WITH CORPORATE CLIENTS

Cemig's portfolio of corporate clients is a significant percentage in its sales of electricity, and consequently, of the Company's total revenue. To offer a distinctive service that is compatible with the scale and importance of large companies, two Director-level Commercial Relationship Management Units have been created to manage this relationship.

Cemig's Corporate Clients category includes mainly large companies in electricity-intensive industry, basic industries and manufacturing, both inside and outside Cemig's concession area. These companies, for which electricity is an important input in their production, usually have demand of 3,000 kW or above, which is the requirement for the status of 'Free Client' – consumers allowed to contract supply from any supplier, whether one-off or under a longer-term bilateral contract. Personalized customer care is thus of fundamental importance due to the complexity of the contracts and the need for a differentiated relationship that can maintain and/or amplify Cemig's market share. For this reason Cemig invests in a team of professionals with specific technical knowledge, responsible for managing these contracts and all associated demands, as well as prospecting and contracting new clients.

Cemig has another group of clients in the Incentive Market, medium-sized companies, which may also be either inside or outside its concession area. The legislation calls these 'special clients': They must have demand of 500kW or more, and may also buy supply from various suppliers, provided the source is renewable and incentive-bearing; they receive a discount on the tariff for use of the distribution system. All sales to these clients are made through purchase auctions in accordance with the legislation. However, before sales can be finalized the transaction is submitted to approval by the Energy Risks Management Committee. This committee has members from various areas of the company, and assesses whether the transaction will be advantageous, and meet certain set commercial guidelines. After this approval, all such transactions are also taken to the Executive Board for decision. Since these clients involve high amounts, the greatest risk in management of them is default, in spite of the financial guarantees sought and received. To mitigate this risk, sales are preceded by a very painstaking credit analysis, as well as a rigorous control and monitoring of companies' default and financial health.

To achieve continuous improvement in the Company's relationship with Corporate Clients, and in view of their complexity – requiring wide knowledge of the electricity sector regulation and the rules and procedures of trading that govern transactions in the Free Market, Cemig has personalized relationship channels, such as:

### Corporate Client relationship channels

SEGMENT	RELATIONSHIP CHANNEL	HOW PUBLICIZED TO CLIENTS
Final consumers: Manufacturing,	Relationship agent (telephone, email, meetings)	Through the channel itself
Basic industries, Agribusiness, Electricity-intensive industries	Corporate events	Agent, site, e-mail
Special clients	Cemig site	Agent and e-mail
	Training	Agent and e-mail
Wholesale (Distributors, Generators and Traders)	Telephone contacts, email, specialized journals and sites, Cemig portal, business visits, and participation in associations of market agents, such as: Abraceel, institutions and government bodies.	Through the trading agent.

## RELATIONSHIP WITH CONSUMERS DMA

Because of its importance, relationship with consumers is a component of the Company's strategic management – monitored using the Balanced Scorecard (BSC) methodology, which translates strategy into maps with objectives, indicators, goals and initiatives. Among the points that comprise the strategic map, there is a focus on consumer service and satisfaction activities, the results of which are evaluated using indicators. These indicators have goals that aim to improve performance – they measure:

- performance of the client service channels: waiting time, service level of the call center, duration and frequency of complaints, clients' assessment of in-person customer service, and other factors;
- performance of the electricity system: duration and frequency of outages, performance on critical days;
- client satisfaction in relation to the services provided; and
- an index that measures the population's perception of trust and safety in relation to the electricity system.

Plans of action are created for the indicators, aiming for continuous improvement in consumer service and satisfaction, seeking to preempt and/or mitigate the risks involved in this relationship, principally those relating to client dissatisfaction with the Company's services, and the possibility of non-compliance with regulatory rules – these can result in, for example, damage to the Company's image, legal actions via local Consumer Protection (Procon) Offices or the Public Attorneys, and fines which may be applied to the Company by those bodies and/or Aneel.

The commitment to consumers is seen in the Aneel Consumer Satisfaction Index (IASC) which is linked to one of the objectives of Cemig's strategic map, in the market perspective – and functions as a thermometer of clients' perception about the Company's services. This makes engagement by every person in the Company a necessity – and this is why the result of this indicator has a direct influence on the employees' variable remuneration.

## CONSUMER SATISFACTION DMA

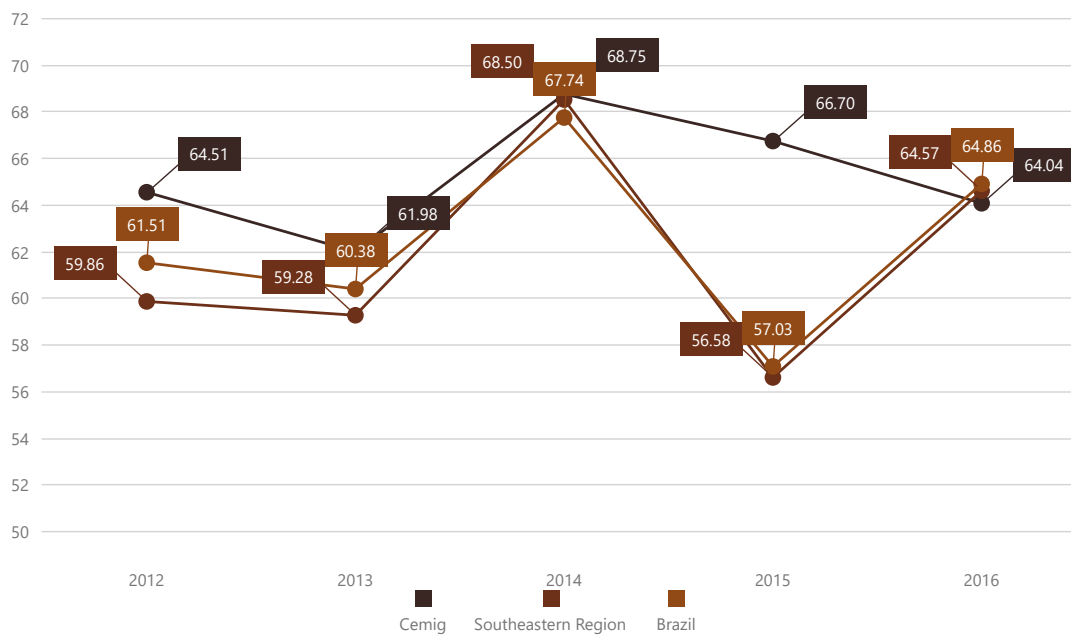
PR5

Cemig regularly tests consumer satisfaction through specific studies and tools such as the Image and Performance Report Portal, which provides an analysis of news reports in the principal media channels of Minas Gerais State, monitoring public opinion about the quality of the services provided by Cemig. The Company also takes part in two satisfaction surveys run annually nationwide, by the regulator, Aneel, and by the Brazilian Electricity Distributors' Association, Abradee.

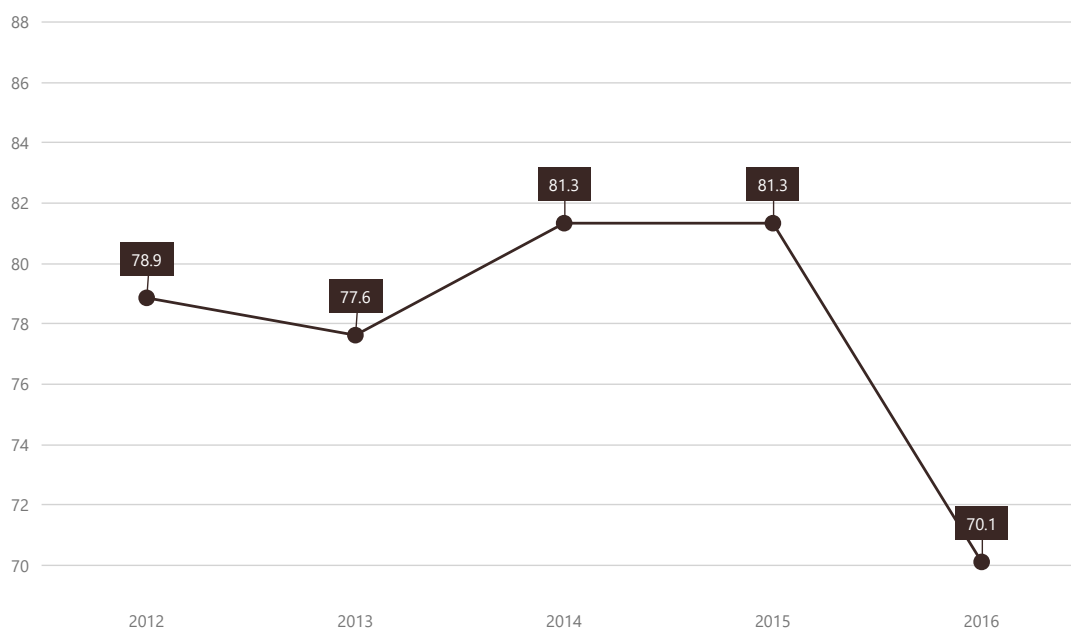
The results of the Aneel Consumer Satisfaction Index (IASC), measured by Aneel, and the ISQP – Perceived Quality Satisfaction Index, surveyed by Abradee, are important inputs for initiatives that aim for continuous improvement of the services provided.

As can be seen from the charts below, adverse factors such as increase in electricity bills, which are not under the Company's control, and the challenging macroeconomic scenario, resulted in a negative effect on the consumer satisfaction index in 2016.

## IASC



## Perceived Quality Satisfaction Index (ISQP)



To minimize the reduction in consumer satisfaction, Cemig worked more intensely in orienting the consumer to help reduce spending, through aware use of electricity. More than 42,000 people participated in 285 educational events held in 2016, such as *Breakfast with Cemig* – an event bringing housewives for informal conversations with the Company's technicians and *Cemig and You*, in which a task force from the company takes tips on safety and saving to the population. Aware use of electricity has also been presented in schools. As well as special lessons, pupils took part in the Cemig Theater of Light Program, which takes information, entertainment and culture to communities in the state of Minas Gerais, using theater as a tool to disseminate correct habits on use of electricity.



The Cemig Theater of Light – an interactive teaching-entertainment disseminating awareness on use of electricity.

Default has also been a target of special extra activities and events: Cemig's *Debt Negotiation Week* offered consumers ways of paying off electricity bills and restoring a regular relationship with the company.

Commitment to consumer satisfaction is a daily responsibility of all the Company's employees and outsourced workers. To bolster the engagement of the entire workforce in the process of consumer satisfaction, Cemig holds events the whole year round. The internal communication campaign "*Together we Win More*" called on the employees to reflect deeply on the importance of consumer satisfaction surveys. The 2016 Internal Client Week was based on the theme "*I know What it's Like to be a Client*": it held interactive activities such as surveys on the subject, and an on line game dealing with the electricity consumer's rights and duties, giving employees an incentive to put themselves in the place of the client and understand the client's needs.



An intranet screen directing the user to an exclusive Client Week page.

Complementing this, there is the Consumers' Council, which represents the interests of this collective public and defends them, putting forward suggestions, cooperating in inspections, and raising accusations and complaints based on general conditions of electricity supply. The decentralized meetings of Cemig's Consumers' Councils are also important forums for the client satisfaction process, as an opportunity for the consumer to resolve doubts and present suggestions for improvement of the services provided by the Company. Actual participation by managers and technicians in these meetings makes possible a frank and direct dialog with representatives of all the consumer categories: residential, commercial, industrial and rural, in all the regions throughout the State. Three decentralized meetings were held in 2016, with more than 200 representatives of various categories of clients making up the Consumer Councils.

No ISPM (satisfaction survey of municipal governments) was held in 2016, due to financial constraints. This was an internal decision.

#### Highlight of 2016: The APR WEB System

Over the years, Cemig has established a pattern of relationship with clients and partners that also uses online tools, providing faster response to client demands, improving user safety, and meeting legal requirements more

efficiently.

To ensure this continued improvement, in 2016 Cemig concluded implementation of its APR WEB system in all the municipalities in the State's East, Mantiqueira, North, West, South and Triangle regions, totaling some 94% of the concession area. The Central region will be incorporated in January 2017.

The APR WEB system, which can only be operated by a responsible technician within the client registered with CREA (Regional Engineering and Architecture Council), aims to expedite satisfaction of requests for approval of client electricity systems and network load analysis by using the web. This involves using automatic responses to client requests, sending and electronic filing of documentations, and optimizing of controls and access to the electricity projects that are approved.

Main benefits of the APR WEB system:

- Optimizes and simplifies the approval process for electrical plans and network flow / load analysis.
- Improves and accelerates response directed to the Technician Responsible (a differentiated, exclusive service).
- Reduces operational cost for the Technician Responsible (avoiding printing and copying of documentation).
- The whole process is digital.
- Automatic feedback on the status of requests.
- Electronic filing and location of plans approved.

In 2016 alone, no less than 50,000 interactions were made using the APR WEB, at all stages from initial request for service to delivery of automatic responses, and making the approved documentation available to the interested parties.

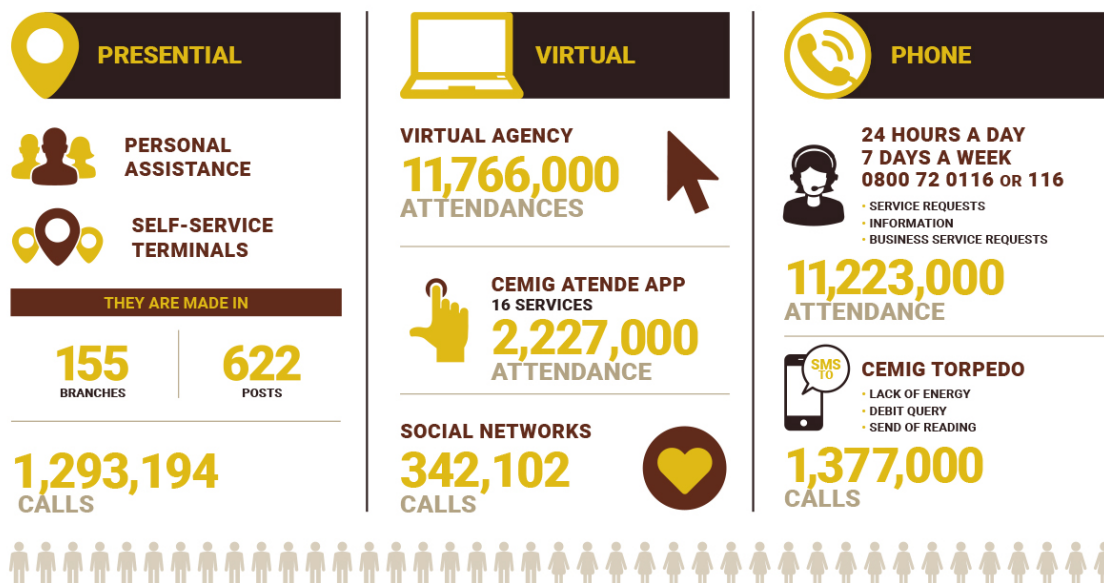
## RELATIONSHIP CHANNELS

Due to the vast scale of Cemig's concession area, with a presence in 774 municipalities (many equivalent in scale to 'counties'), the diversity of relationship channels is an essential resource for providing a quality client service to its consumer. Cemig aims continuously to tighten and strengthen relationships with its consumers and offer an up-to-date, agile service with quality and transparency. For this purpose the Company has multiple customer communication channels – in-person, by telephone and by web, to meet all types of specific need with ease, reliability and comfort.

To serve its more than 8.2 million consumers, Cemig has a diversified range of tools available to the user:



## MIX OF SERVICE CHANNELS

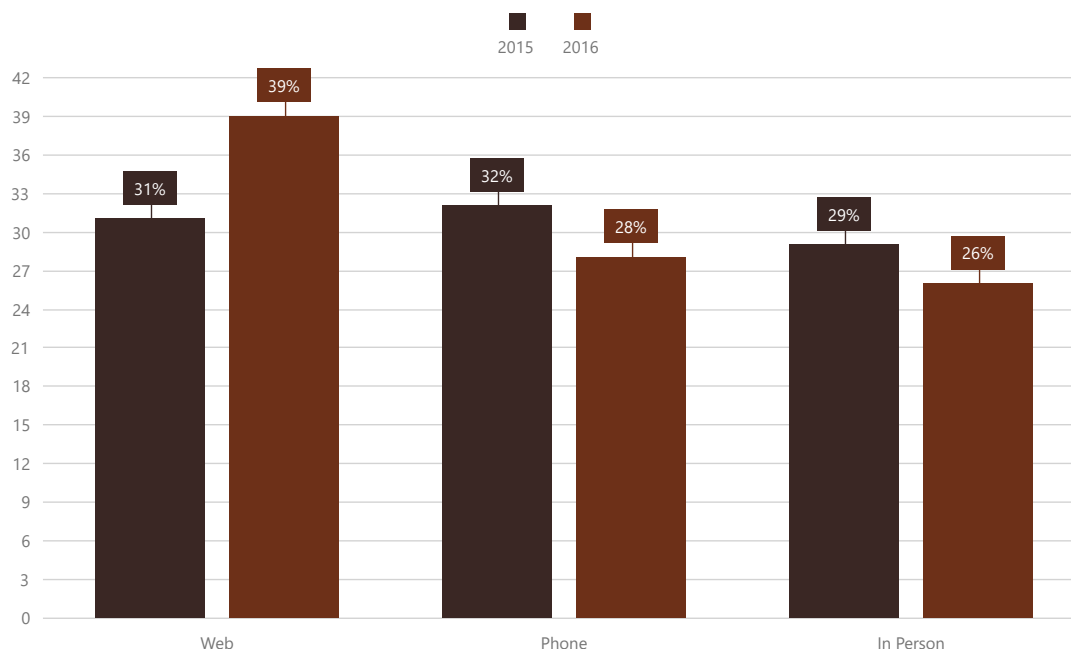


**8,2 MILLION CUSTOMERS**

**39,883,356 CALLS IN 2016**

In 2016 Cemig received a total of 39,883,361 requests for services through its various customer service channels. The most used was the Virtual Branch, which currently handles around 30% of the total demand for customer service.

Client communication channels - relative use volume



In recognition of these service channels, Cemig received the Abradee prize at the 2016 SENI, for its presentation "Cemig's customer service channels focusing on independent mobile apps – Facebook and Telegram". Cemig also has a range of channels designed for users with special needs: Fale com e Cemig ('Talk to Cemig' – on 0800 723 8007); Cemig Torpedo, a text service; online channels; and the Cemig Atende apps. All these channels have special service for the hearing-impaired.

The online channels can be used by people with special needs through adapted equipment and software. The customer service branches have full facilities for the disabled, in accordance with ABNT-NBR 9050) accessibility standards.

### Cemig's Concept Branch

Cemig is finalizing its Concept Branch in the Minas Shopping Mall, in Belo Horizonte, under its R&D Project 439.

The basis of this facility is integration of all technologies to allow the necessary degree of automation for access for people with special needs.

For an investment of approximately R\$ 5 million, the Concept Branch will have touchscreen interaction, cameras with directed sound, and all the physical structure necessary to serve clients that have physical, hearing or vision impairment, enabling them to request the full information and services of the branch.

### Ombudsman's Office

In 2016 the number of complaints or requests to Cemig's Ombudsman was down 41% from the previous year. This is because internal analyses revealed that a large proportion of the calls to the office were made only to request a service, or information. And this happened because the Ombudsman's toll free number (0800 728 3838) was stated on electricity bills, close to the final amount of the account. With the change in the layout of electricity bills over the year of 2016 the number of calls was reduced from 7,600 in January to 1,580 in December of the year.

Calls that were truly within the Ombudsman's remit showed the following numbers for the five most frequent types of complaint in 2016, which comprised 54.3% of all the cases dealt with in the year.

CEMIG OMBUDSMAN, 2016		
Subjects	Complaints	Percentage of total complaints in 2016
Distribution network extension	2,357	18.00%
Reimbursement of electrical damage	1,563	11.90%
Consumer complaint	1,379	10.50%
Irregularity complaint	1,039	7.90%
Request for energy supply	751	5.70%

Questions raised under the heading 'Extension of Network' were 25% less, in number, than in 2015, reflecting completion of the works of the Program for [Universalization of Access to Electricity](#). On the other hand in the second most frequent type of complaint – 'Request for Connection' – the number increased from 247 in 2015 to 751 in 2016: this possibly reflects a change in consumers' type of demand, as network extensions were at that time being concluded.

Complaints under the heading of 'Flag Tariff' were 8.4% less in 2016, as consumers became more familiar with the system.

There were no complaints under the heading of human rights in the year.

Complaints recorded by Aneel relating to Cemig were 36.25% less than in 2015. This reflects internal factors at Cemig, as mentioned above, plus the fact that in 2016 Aneel reduced its attendance times from 24/7/365 to only the time from 6.20 a.m. to midnight, excluding Sundays and national holidays. Also, Aneel's telephone service and online chat portal were suspended from May 6 to June 21, 2016. This resulted in the highest year-on-year declines being shown in May and June.

The lower number of complaints registered with Aneel has also been helped by increasing effectiveness in submission of complaints, stimulated by the 'Paths of Understanding' (Caminhos do Entendimento) program, put in place in 2014.

### Paths of Understanding Program

The “Paths of Understanding” was implemented in 2014 to expedite flows of consumer complaints, mainly in cooperation with the customer service channels of the distribution companies. If the problem is not solved by the initial approach and response through this channel, the consumer can make the complaint to the Ombudsman of the distribution companies, and finally if the problem persists can file it with the Ombudsman of Aneel.

The measure was proposed by the National Forum of Ombudsmen of the Electricity Sector, and accepted by Aneel to strengthen the Ombudsmen of distribution companies and enhance customer service by making sure that complaints follow the best routes.

Cemig was the concession holder chosen for the pilot project, put in place on August 1, 2014. The country's other concession holders began the project on January 1, 2015.

There is more information on the [Aneel](#) consumer orientation site.

## DEFAULT

EU27

Higher levels of default were mainly attributable to (i) the ordinary and extraordinary tariff adjustments, and (ii) the ‘Flag Tariff’ system created to reflect scarcity of water in reservoirs, put in place in 2015, and exacerbated by the worsening Brazilian macro situation in 2016. The result was higher than average default – reflecting higher bills, and less payment.

Average default in December 2016 was more than 19% higher than in December 2015. The rate in December 2016 was 4.59%. This has a direct impact on Cemig's bottom line, and is a strong factor in the Company's financial health.

Cemig seeks to use a sliding scale of collection activity in dealing with defaulting clients, before taking more extreme measures such as disconnection of supply. Initially the consumer received messages by email, text or even phone calls.

The number of residential disconnections for lack of payment had the following pattern in 2016:

DURATION OF DISCONNECTION	TOTAL AGGREGATE DISCONNECTION TIME	PERCENTAGE
< 48 hours	66,439	37.36%
48 hours – 1 week	17,717	9.96%
1 week – 1 month	15,620	8.78%
1 month – 1 year	13,109	7.37%
Still disconnected	64,934	36.52%
Overall total	177,819	100.00%

Firstly, the total number of disconnections was lower than in 2015 due to the Company's choice of a range of options to encourage payment before resorting to disconnection: negative posting on public credit registries; administrative collection procedures; and special ‘negotiation campaigns’ with specific differentiated rules.

In September through December there was a credit recovery campaign offering consumers the right to renegotiate debts under rules specially approved by the Company. In November, Cemig also took part in an event called the ‘Serasa Clear-Your-Name Fair’, provided for negotiation of debts by clients whose names were on public lists of adverse credit ratings. In November a new negotiation channel was opened via an 0800-number call center, providing one more alternative for receipt of overdue bills. These actions succeeded in negotiating debts totaling R\$ 63.8 million: this comprised R\$ 37.2 million with payment at sight, and R\$ 26.6 million by installments.

## SAFE USE OF ELECTRICITY

PR1

PR3

There are of course no labeling requirements for electricity – but Cemig invests in communications on safe use of electricity, both through campaigns in the media and by providing multiple relationship channels that offer information to consumers, as well as making teams available for checking risk situations, and orienting consumers on them, in the field, when necessary. All Cemig's communications obey the recommendations of the Brazilian Corporate Communications Association

(Aberje); its advertising agencies obey the Brazilian Advertising Self-Regulation Code (Conar). No cases were recorded of non-compliance with the voluntary regulations and codes related to communication and marketing.

As well as the constant concern for its workforce, Cemig takes measures and runs campaigns for prevention of accidents to the public in the whole of its concession area, providing direct orientation through lectures, posters, calendars – as well as reports on state-wide, regional and in some cases national radio and TV stations.

The target of the direct presentations covered building works, schools and a range of companies. Online educational material was widely disseminated over the whole year on Cemig's website and through social media.

The Minas Gerais state government invited Cemig to be a member of the State Management Committee on policies for combating epidemics of dengue fever, Zika fever and chikungunya. Cemig used all of its communication logistics to publicize the safety campaign to the public, on combating proliferation of the *Aedes aegypti* mosquito. The outsourced companies that do Cemig's meter reading voluntarily joined the campaign, with meter readers helping to identify sources of mosquito incubation throughout the state.

A total of 4,856 vehicle collisions with poles of the electricity system were recorded in Cemig's concession area in 2016 – 3% less than in 2015. These traffic accidents caused outages for approximately 1.6 million clients. The region with the highest number of this type of accident was the Triangle, with 1,189 crashes, around 25% of the total.

The largest number of clients affected – approximately 445,000, or 29% of the total, is in the Center region of the State, even though this region had less accidents than the Triangle. Company records show the West of Minas region as least affected – 123,000 consumer units there suffered outages in the year due to this type of accident.

The number of accidents involving the general public in Cemig's concession area in 2016 was 15.62% lower than in 2015:

NUMBER OF ACCIDENTS INVOLVING THE PUBLIC*	2012	2013	2014	2015	2016
Accidents without fatalities	53	86	77	73	56
Accidents with fatalities	29	28	20	23	25

\*Figures for 2012-2015 have been revised/corrected.

In December 2016, there were 227 legal actions in progress for accidents to the public, involving fatalities and injuries. Judgment was passed on 86 of these in the year. In four, with high claims of the order of R\$ 2 million, the plaintiffs' claims were refused and judgment was given in favor of the Company.

## INFORMATION SECURITY

Cemig continues to be aligned with best market practices in information security, and operates with other companies in work groups to enhance this aspect. A highlight in 2016 was implementation of a new data network infrastructure for operation of the electricity system, segregated from the corporate network, to the standard of best information security practices. Cemig benefited from the increased security, and increased availability, of the data network for operating the electricity system, with lower risk of interruption for work for maintenance and support works on this data network.

Cemig participated in and coordinated the workgroup "Cybersecurity for electric utilities in Brazil", under the aegis of Cigré Brasil, with participation of six other electricity concession holders and two research institutions. The aim of this work group is to foster discussion on the present scenario of cyber-threats, and propose a group of structured actions to increase the level of protection of critical infrastructure in Brazilian electricity.

In 2016, Cemig continued its information security campaign begun in October 2015, which aims to raise awareness in the workforce on good information security practices, aware use of printing, sending of emails and organization of the workspace. Operationally, the campaign includes online information, lectures and seminars to disseminate the principles and guidelines of Cemig's Information Security Policy.

To keep the policy updated and in line with the related legislation, especially the Sarbanes-Oxley Law, six corporate procedure instructions were revised and approved in the year.

In 2016 Cemig held its 12<sup>th</sup> Information Security Survey. This research survey reflects the Company's present stage of information security risk management, and provides a measure of the maturity and compliance of the Company's information security risk analysis, in comparison to the market and legislation. The Information Security Index (ISI) found for the year was 70.83, higher than the result of 70.22 for 2015.

As a result of all these processes, no demand was made in 2016 for Cemig to investigate any violations of privacy or loss of client data.

All the client data used for access in the client service channels follow standard information security protocols, specifically to avoid violation of privacy or loss of client data – obeying the company's information security policy and several internal instructions for procedures and forms of control. Cemig also produces bulletins and holds safety campaigns addressed to employees. Cemig makes no commercial use of its clients' data.

## ELECTRICITY ACCESS DMA

SDG7

### Client inclusion initiatives

SDG11

Cemig's Rural Electrification Program aims to bring electricity to the entire rural areas of the 774 municipalities of its concession area by August 2018. Approximately 50,000 properties will be connected, benefiting more than 200,000 people and achieving more than 99% coverage of electricity supply in the state.

EU26

This initiative is also part of the plan to combat countryside poverty, launched in 2016 by the Minas Gerais state government under the name "Novos Encontros". By 2015 Cemig had made 10,151 connections, and has scheduled investment of R\$ 800 million over the three years 2016-18 to make a further 50,000 connections. Of these, 12,659 had been completed by the end of 2016.

As well as attending the consumer by providing the network, Cemig also offers a basic internal installation kit, free of charge, with a standard entry, branch connection, lamps and plugs. To qualify, the beneficiary has to be on the Brazilian "Federal Government's Single Registry" of people qualifying for assistance.

Service was extended to 1,244 properties in the countryside in the northern part of Minas Gerais state in 2015, for investment of R\$ 13.6 million. A further R\$ 48.1 million was invested in 2016, to serve 2,764 properties. A total of R\$ 147 million is now scheduled for 2017 and 18, to provide a further 8,454 connections.

In the whole of the Rural Electrification Program a total of 15,000 kilometers of network will be built – equivalent to laying a cable halfway around the world – with 40,000 transformers installed, and thousands of electricity poles.

In 2016 Cemig regularized supply to 272 municipalities, achieving an average connection index of 97.93% of rural consumers in the 774 municipalities of its concession area.

The target is to raise this index to 99% by August 2018.

### Energy conservation and efficiency

Through its Energy Efficiency Program, Cemig has been running projects to orient the population on proper use of electricity since the 1980s, in accordance with the specific legislation from time to time. Since 2008, approximately R\$ 435 million has been invested in putting new technologies in place, and strengthening the culture of rational use of electricity through activities to enhance awareness, and the use of more efficient equipment.

The current legislation, regulated by Aneel, requires distributors to invest a minimum percentage of Net operational revenue in energy efficiency projects. Also, distributors are required to hold a Public Call for Projects once a year, inviting proposals from the public to be executed with funds from the Energy Efficiency program. In 2016 Cemig made R\$ 35 million available for these public projects, and invested R\$ 23.3 million in energy efficiency projects.

The program invests in projects connected to many sectors of the economy – industry, public authorities, public services and residential.

One example is the Citizen Energy efficiency program, for low-income clients, which simply replaces high-consumption equipment (lamps, refrigerators, showers) with other more efficient and economical models – reducing demand from the households of these low-income consumers – and also provides orientation on efficient and safe use of power.

The program operates on two fronts:

- The Companhia de Habitação do Estado de Minas Gerais - Cohab (“Housing Company of Minas Gerais State”) Citizen Energy program: Serving only residential clients in public housing projects by Cohab – to these users are given LED lamps and solar heating systems to replace old lamps and showers, respectively; and
- The Citizen Energy in the Interior program: Serving residential clients in municipalities further from the state capital, who receive replacement LED lamps and refrigerators.

The overall Citizen Energy program will serve 110,000 families throughout the state, and aims:

- to bring Cemig closer to communities, with orientation of efficient and safe use of electricity;
- to preserve the environment by saving up to 50% on electricity consumption;
- to produce aware consumers;
- to reduce electricity bills, more in line with families’ ability to pay;
- to improve the budgets of low-income families;
- to give information about access to the Social Electricity Tariff; and
- to increase the ‘social capital’ of low-income families.

Highlights of the projects put in place in 2016:

Replacement of showers with solar water heating systems in low-income housing developments



Two projects are currently in progress: Conviver Solar I and II. In these projects, 2,264 families living in low-income housing projects have benefited, with replacement of 11,320 lamps, for a total investment of R\$ 8.2 million, in 2016. Energy savings now total 1,303 MWh/year, with reduction of 1,033 kW in peak demand.

#### Replacement of showers in public hospitals and philanthropic institutions with solar heating systems

Works have been completed in 11 public and philanthropic entities, providing a total energy saving of 517 MWh/year and reduction of peak demand by 1,332 kW, with investment of more than R\$ 2.27 million in solar systems.

#### Replacement of showers with solar heating at elderly care homes

18 systems were completed in 2016, bringing the number of institutions benefited by the project as a whole to 396, to date. Energy savings now total 282 MWh/year, with reduction of 124 kW in peak demand. R\$ 369,000 was invested in this project in 2016 alone.

#### Replacement of obsolete lighting systems in public and philanthropic hospitals

The program provided a saving of 902 MWh/year to nine hospitals, reducing peak demand by 192 kW, for investment of just over R\$ 304,000.

#### Educational project for low- and medium-voltage consumers

Training and updating of professionals in Cemig clients that have large consumer facilities and need to manage their consumption and costs, focusing on identifying improvements in their companies or facilities. R\$ 715,000 was invested in this initiative, with training of 283 professionals.

#### Performance contracts in progress

Various projects are in progress under performance contracts, including: co-generation in the company Bem Brasil; modernization of the lighting system of Minas Tênis Clube; and implementation of photovoltaic generation in the plant of Algar Telecom. These projects represent an aggregate investment of R\$ 12.86 million in 2016.

#### Public invitation to submit energy efficiency projects

To make the choice of projects more transparent and democratic, with wider participation by society, in 2015 Cemig began its practice of Public Calls for Energy Efficiency Projects (CPPs), in which consumers present proposals to be part of the Energy Efficiency Program.

In 2016 R\$ 35 million was made available, and 67 projects were put forward for analysis. To increase public participation in future CPPs, Cemig has taken part in public and private events presenting the criteria and procedures for putting projects forward.

[Click here](#) for more info.



2016 ENERGY EFFICIENCY PROGRAM FIGURES						
Action	Target public	Units	Investment in 2016 (R\$)	Energy saved (MWh/year)	Reduction in peak demand (kW)	CO <sub>2</sub> avoided (tons)
Replacement of electric showers with solar water heating	Low-income housing	2,624	593,670.96	1,303	1,033	116
Educational project for low and medium voltage consumers	Large electricity consumers	283	715,551.35	0	0	0
Replacement of electric showers with solar water heating	Long-term homes for the elderly	18	369,532.66	282	124	25
Replacement of electric showers with solar water heating	Public hospitals and philanthropic entities	11	2,272,046.95	517	1,332	46
Replacement of obsolete lighting with high-efficiency systems	Public hospitals and philanthropic entities	9	304,631.58	902	192	80
Replacement of autoclaves	Public hospitals and philanthropic entities	1	39,956.38	63	18	6
Replacement of lighting system	Commerce and services	1	0.00	1,745	603	155
Optimization of cooling system	Industry	1	0.00	3,480	0	310
Projects in progress	For-profit consumers	0	13,502,840.63	0	0	0.00
Projects in progress	Nonprofit consumers	0	4,766,853.80	0	0	0.00
Management plan			737,092.07			
TOTAL			23,302,176.38	8,292	3,302	738

## The low-income tariff

The Social Tariff is a legal requirement created by Law 12212 of January 20, 2010. Cemig fully complies with the legislation, giving consumers the rights to which they are entitled.

Residential consumer units used by families inscribed in the federal government's Single Registry social program (Cadastro Unico), or any person receiving the Continuing Social Assistance Benefit (BPC) under Article 20 and 21 of Law 8742 of December 1993, have this entitlement. These users benefit from a discount on their consumption up to 220 kWh. Above this consumption level there is no discount. The benefit results in a discount of 65% for consumers with consumption up to 30 kWh/month, 40% for those consuming 31-100 kWh, 10% for consumers of 101-220 kWh and 0% above that threshold. Indigenous families and those living in remaining Quilombo settlements have discount of 100% up to 50 kWh/month.

Applicants for the benefit have to give the following information to the distribution company:

- name, federal tax number (CPF) and identity card, or in their absence another official identification document with a photograph or, for indigenous people, the RANI;
- the Consumer Unit Number that will receive the benefit;
- Social Identification Number (NIS) or, if a recipient of the BPC benefit, the Benefit Number (NB);
- For families requiring continuous of medical equipment, medical report signed by a doctor.

The risk related to this program is the risk of delay in receipt of the government's subsidy, with impact on the distribution company's cash flow. The monthly loss of distributors' revenue due to the subsidy for low-income residential consumers, and other items, is repaid monthly with funds from the Energy Development Account (CDE). These funds will be managed, starting 2017, by the Electricity Trading Exchange (Câmara De Comercialização De Energia Elétrica – CCEE).

Under an adjustment coming into effect in 2017, the contribution to the CDE to be paid by all consumers and normally included in electricity bills will no longer be included in electricity bills of consumers receiving this subsidy.

## Distributed Generation



## Management of access for micro- and mini-scale distributed generation

Aneel's Resolution 482 of 2012 set the terms for providing micro- and mini-instances of distributed generation with access to the electricity distribution system in the charge-offsetting mode. This means a Brazilian consumer can now generate its own electricity from renewable sources, and provide the excess to the grid at its location – an innovation that provides a financial saving, and also enhances social and environment awareness, and self-sustainability.

The applicable technologies included are:

- generators (burning diesel, gasoline, ethanol, natural gas or biogas);
- micro-turbines;
- small-scale (horizontal or vertical) aerogenerators;
- small and micro hydroelectric plants;
- fuel cell generators; and
- photovoltaic solar panels.

The revision of these rules in 2016 now allows any renewable source, and also qualified cogeneration, to be connected to the distribution network directly from the consumer unit.

If the unit's generation is greater than its consumption, the consumer earns credits which can be used to reduce future invoices. The period for use of these credits has been increased by the new rules from 36 to 60 months – and they can also be used for other units in the name of the same consumer at other locations when served by the same distributor. This has received the name of 'remote self-consumption'.

Another innovation brought in by this same resolution is the possibility of distributed generation in condominiums (consisting of multiple consumer units). In this configuration, condominium members can share the power generated in the percentages they choose.

Aneel has also created the legal concept of 'shared generation', enabling various interested parties to form a joint consortium or cooperative, enabling them to (i) share the output of their micro- or mini-scale distributed-generation facility and (ii) use the output to reduce future invoices of the individual parties.

As a general rule, small generators close to their loads can provide various benefits for the electricity system and concession holders, for example:

- less urgency for investment in expansion of distribution and transmission systems;
- lower environmental impact;
- improved voltage level during peak load periods;
- higher efficiency for the generating source due to lower losses in production and transmission;
- diversification, in principle, of electricity supply sources; and
- in general, the benefit arising from creation of new business models in the sector.

Possible adverse effects include: higher complexity, with issues for stability in operating the network; difficulty in charging for use of the electricity system; possible taxes; and the need to change the distributor's procedures for operating, controlling and protecting its networks. One solution to all this may be the *Smart Grid* – or an even more complex system involving integrated planning, envisaged as the Smart City.

Cemig, in a pioneer role in technology development, connected the first electricity micro-generation unit in Brazil in September 2012, the same year that Aneel created the regulations for the offsetting system. Since then, it has been leading the market in distributed generation connections in Brazil.

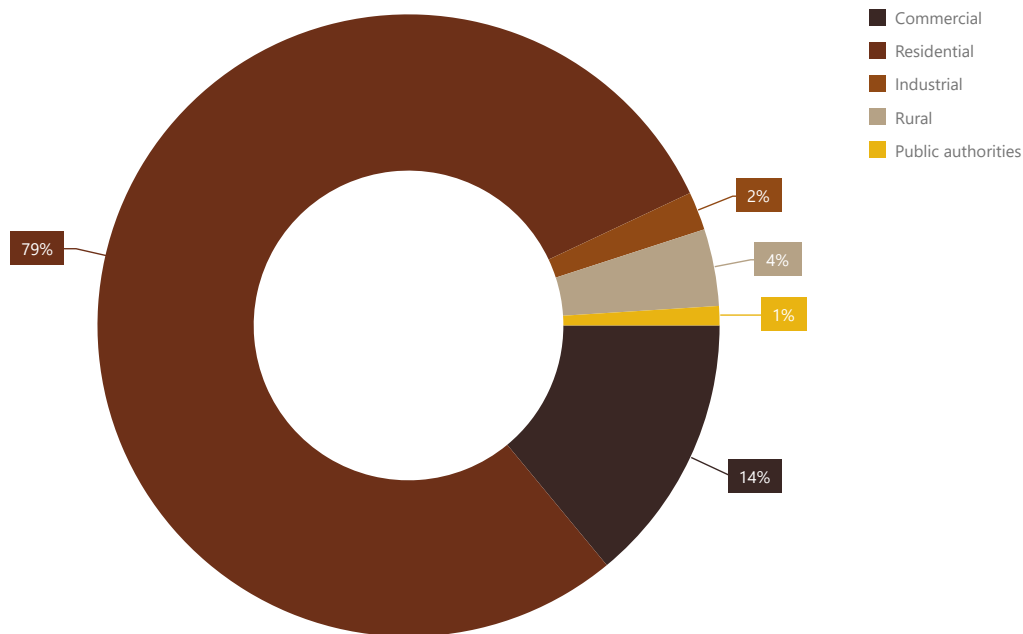
From the publication of Resolution 482 in 2012 to December 2016, 1,560 generating plants have been installed, of which 99% (1,546) are photovoltaic-solar, 1% (12) burn biogas, one burns biomass and one is hydroelectric.

In 2016 a total of 1,224 plants were installed: 1,211 solar, 11 biogas, one biomass and one hydroelectric.

In March 2017, Cemig had 1,831 distributed-generation units connected, with total installed capacity of 19.3 MW. This represents approximately 0.2% of Cemig's total installed generation capacity.

The profile of the connections is predominantly (98%) low-voltage, and photovoltaic generation. The breakdown by consumer type is as follows, predominantly residential generation:

Consumers by category



There are more details on the regulations and the process of joining the offsetting system at [this link](#).

In the whole of Brazil, there are 8,801 plants operating in distributed generation, with total installed capacity of 99 MW: solar voltaic generation is used in 8,704 of them (98.8% of the total), providing 66 MW (67% of the total capacity).

These figures have varied dynamically – the updated numbers can be found on [Cemig's website](#).

## RETAIL SUPPLY OF ELECTRICITY

### CEMIG'S ELECTRICITY MARKET

EU3  
G4-8

The Cemig Group sells electricity through its distribution company, Cemig Distribuição ('Cemig D'), its generation and transmission company Cemig Geração e Transmissão ('Cemig GT'), and wholly-owned subsidiaries: Horizontes Energia, Sá Carvalho, Barreiro Thermal Plant, Cemig PCH and Rosal Energia.

This market comprises sales of electricity to:

- captive consumers in Cemig's concession area in the State of Minas Gerais;
- 'Free Consumers' in both the State of Minas Gerais and other States of Brazil, in the Free Market (Ambiente de Contratação Livre, or ACL);

- iii. other agents of the electricity sector – traders, generators and independent power producers, also in the Free Market; and
- iv. Distributors, in the Regulated Market (Ambiente de Contratação Regulada, or ACR).

In 2016 the “Cemig Group” sold a total of 55,591,691 MWh, or 2.3% less than in 2015, while the total of power transported by the group for Free Clients was 10.97% higher than in 2015, at 17,381,808 MWh. Sales of electricity to final consumers plus Cemig’s own consumption totaled 43,083,238 MWh, or 6.5% less than in 2015.

Electricity consumption has been affected by adverse Brazilian political and economic circumstances; and, in the captive market, by successive increases in electricity rates charged to consumers, which, associated with application of the ‘Tariff Flag’ system, have resulted in significant increases in consumers’ electricity bills.

Sales to distributors, traders, other generating companies and independent power producers in 2016 totaled 12,508,453 MWh – or 15.5% more than in 2015.

In December 2016 the “Cemig Group” invoiced 8,260,336 customers – an increase of 2.2% in the customer base since December 2015. Of this total, 8,253,952 are final consumers (including Cemig’s own consumption), and 82 are other agents of the Brazilian electricity sector: distributors and traders.

Below are comments on the Cemig Group’s market:

## Sales to final consumers

### Residential

The residential consumer category accounted for 17.8% of Cemig’s electricity sales in 2015, totaling 9,915,807 MWh – or 0.9% more than in 2015.

This higher consumption by the residential consumer category was the result of the following factors:

- a. Addition of 157,196 new residential supply installations since December 2015.
- b. The billing calendar had 1.2 day more than in 2016 (366.8 days, compared to 365.6 days in 2015).

Average monthly consumption per consumer in 2016 was 124.6 kWh/month, or 1.4% less than in 2015 (126.3 kWh/month); it is worth noting that in the period there was a fall in household income and an increase in unemployment.

### Industrial

Total consumption by industrial users in 2016, at 19,627,640 MWh, was 5.2% higher than in 2015 – mainly reflecting a significant resumption of activity in the metallurgy and ferro-alloys sector.

Supply used by captive clients, totaling 3,194,872 MWh, was 7.4% of the total volume of electricity distributed by Cemig D in 2016 – this total was 15.0% less than in 2015. The total of electricity transported for Free Clients, at 16,432,768 MWh, was 10.3% higher than in 2015, and represented 38.0% of the total volume of electricity distributed.

The performance of this segment reflects migration to the Free Market by captive clients using supply at medium voltage, and also a continuous retraction in economic activity both in the state of Minas Gerais and the whole of Brazil, and also the performance of the world economy.

### Commercial and Services

The electricity billed to captive and free clients in Minas Gerais and other states was 11.8% of the total volume of electricity traded by the group in 2016, at 6,572,980 MWh – 2.2% higher than in 2015.

This reflects volume billed to captive consumers of Cemig D 5.2% lower in the year, and volume billed by Cemig GT and its wholly-owned subsidiaries to free clients in Minas Gerais and other states 111.5% higher than in 2015.

The lower consumption in the captive market is associated with migration of captive clients to the Free Market; the retraction in economic activity, with lower volumes of funds available for consumption of goods and services by private individuals; reduction of other productive activities, including government activities; and adoption of measures to reduce use of electricity, due to the increase in the cost of electricity as from January 2015.

The increased consumption in the Free Market is associated with the increase in the number of clients billed – the total number of Free Consumers in the Commercial category increased by 245.3%, from a total of 106 to 366 clients.

## Rural

Electricity used by the rural construction category, at 3,574,724 MWh, was 6.4% more than in 2015, and was 6.8% of the total traded by the “Cemig Group” in 2015. Consumption for irrigation was 15.1% higher, and consumption by farmers was 1.5% higher.

The increase in consumption reflected adverse climate conditions – low volume of rains in the normally rainy season, from February to April 2016, and higher temperatures over the whole of the first half of the year, leading to greater use of irrigation systems.

## Other categories

Supply to other categories – government, public lighting, public services, and Cemig’s own consumption – was 6.3% of the Group’s total sales by volume, totaling 3,525,306 MWh, in 2016, or 1.9% less than in 2015.

## Sales in the Free Market, and ‘Bilateral Contracts’

In 2016 Cemig’s sales of electricity in the Free Market were 10,044,817 MWh, or 55.9% more than in 2015.

Sales and trading transactions in electricity with other agents of the electricity sector in the Free Market often result from taking advantage of selling opportunities which have been created previously, leading to short-term sales contracts.

## Sales in the Regulated Market

Sales in the Regulated Market in 2016 totaled 2,425,228 MWh, or 45.3% less than in 2015. This reflected:

- a. cessation of certain contracts, as a result of the corporate reorganization of the Cemig group – with the transfer of assets from Cemig GT to *Aliança Energia*; and
- b. termination of contracts made at the 18<sup>th</sup> Adjustment Auction, held in the first half of 2015, and at the second ‘Existing Supply’ Auction, held in 2005 and governing the period 2008–2015.

The tables below show the Cemig Group’s market in more detail, itemizing transactions in 2016 compared with 2015.

## Breakdown of electricity transacted

The tables below show the Cemig Group’s market in more detail, itemizing transactions in 2016 compared with 2015.

BREAKDOWN OF THE ELECTRICITY SUPPLY			
ITEM	ELECTRICITY (GWh)		CHANGE (2016/2015)
	2015	2016	
<b>Sales to final consumers</b>	<b>46,035</b>	<b>43,055</b>	<b>-6.47%</b>
Residential	9,830	9,916	0.87%
Industrial	22,969	19,494	-15.14%
Commercial	6,434	6,573	2.16%
Rural	3,380	3,575	5.77%
Other categories	3,422	3,488	1.93%
<b>Own consumption</b>	<b>38</b>	<b>37</b>	<b>-2.63%</b>
<b>Wholesale sales</b>	<b>10,831</b>	<b>12,508</b>	<b>15.48%</b>
CCEAR contracts in Regulated Market	4,252	2,425	-42.97%
'Bilateral' contracts in Free Market	6,579	10,083	53.26%
<b>Total volume of energy transacted</b>	<b>56,904</b>	<b>55,592</b>	<b>-2.29%</b>
<b>Power transported (load)</b>	<b>15,671</b>	<b>17,287</b>	<b>10.31%</b>

NUMBER OF CONSUMERS (THOUSAND)			
ITEM	NO. OF CONSUMERS		CHANGE (2016/2015)
	2015	2016	
<b>Sales to final consumers</b>	<b>8,081</b>	<b>8,253.21</b>	<b>2.13%</b>
Residential	6,532	6,691.67	2.44%
Industrial	75	75.14	-0.45%
Commercial	715	716.70	0.30%
Rural	679	694.30	2.29%
Other categories	78.04	81.69	4.68%
<b>Own consumption</b>	<b>0.76</b>	<b>0.75</b>	<b>-1.32%</b>
<b>Wholesale sales</b>	<b>0.05</b>	<b>0.08</b>	<b>60%</b>
CCEAR-ACR	0.05	0.05	0%
'Bilateral' contracts in Free Market	0.01	0.04	300%
<b>Power transported (load)</b>	<b>0.42</b>	<b>0.70</b>	<b>66.67%</b>
<b>Total</b>	<b>8,079.77</b>	<b>8,254.03</b>	<b>2.13%</b>

## SOURCES AND USES OF ELETRICITY

This table shows the balance of sources of supply and uses of electricity sold for Cemig's consolidated market – the total for purchase and sale transactions by companies of the group in 2016:

## SOURCES AND USES OF ELECTRICITY

### JANUARY TO DECEMBER 2016

#### CEMIG GROUP (WHOLLY-OWNED COMPANIES)



SOURCES, TOTAL 80,774 GWH		USES, TOTAL 80,774 GWH	
<b>ELECTRICITY PRODUCED 9,461</b> OWN GENERATION 9,022 SELF-PRODUCERS 0 AFFILIATED COMPANIES 609 LOSSES IN NATIONAL GRID -171		<b>SOLD / TRADED 74,050</b>	
<b>ELECTRICITY BOUGHT 71,313</b> ITAIPU 5,921 REGULATED CONTRACTS <sup>(1)</sup> 15,386 BOUGHT IN MRE <sup>(2)</sup> 4,979 BOUGHT ON CCEE 14,114 BILATERAL CONTRACTS 19,484 CCEN 1,079 CCGF* 8,715 RECEIVED IN LOCAL GRID <sup>(3)</sup> 38 PROINFA <sup>(4)</sup> 205		<b>LOSSES - DISTRIBUTION -6,199</b>	
		<b>LOSSES IN NATIONAL GRID -525</b>	
		<b>SALES BY CEMIG D IN CAPTIVE MARKET 25,932</b>	
		<b>SALES BY CEMIG GT IN THE FREE MARKET 27,137</b>	
		<b>ALLOCATION TO SELF-PRODUCERS 0</b>	
		<b>SALES - AFFILIATED COMPANIES 974<sup>(5)</sup></b>	
		<b>CEMIG GT SALES TO DISTRIBUTORS 2,489<sup>(6)</sup></b>	
		<b>SALES IN MRE 102</b>	
		<b>SALES ON THE CCEE 17,416</b>	

**Includes:** Power supply sourced and delivered by the wholly-owned companies of the Cemig Group: Cemig D, Cemig GT, Capim Branco, Cemig PCH, Horizontes, Rosal, Sá Carvalho and UTE Barreiro.

**Excludes:** Transactions between the companies.

1. Electricity Sale Contracts in the Regulated environment (Contratos de Comercialização de Energia no Ambiente Regulado - CCEARs); and supply acquired at Adjustment Auctions.
2. Electricity Reallocation Mechanism (Mecanismo de Realocação de Energia - MRE).
3. Generation input directly into the Distribution Network.
4. The Program to Encourage Alternative Sources of Electric Power (Programa de Incentivos às Fontes Alternativas de Energia).
5. 'Bilateral' Contracts made by the companies Sá Carvalho, Horizontes, Pai Joaquim, Rosal, UTE Barreiro and UTE Ipatinga.
6. Sales by Cemig GT in the Regulated Market (Ambiente de Contratação Regulada - ACR)

## ELECTRICITY QUALITY DMA

EU28

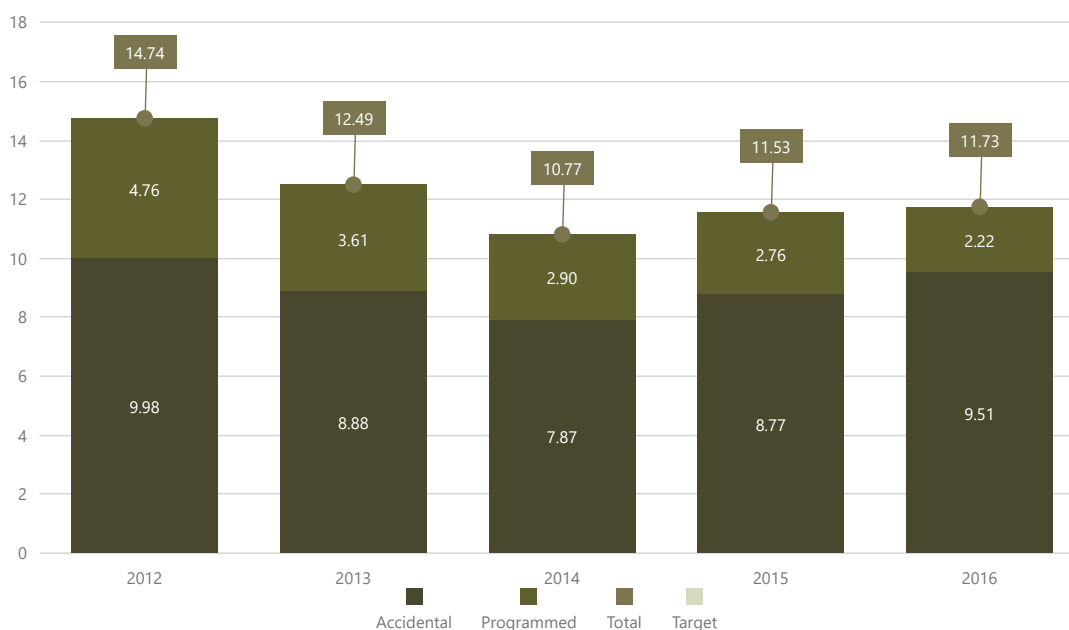
To meet the standards demanded by the regulator, and expected by clients, Cemig acts to improve quality and reliability of electricity that it supplies to clients.

EU29

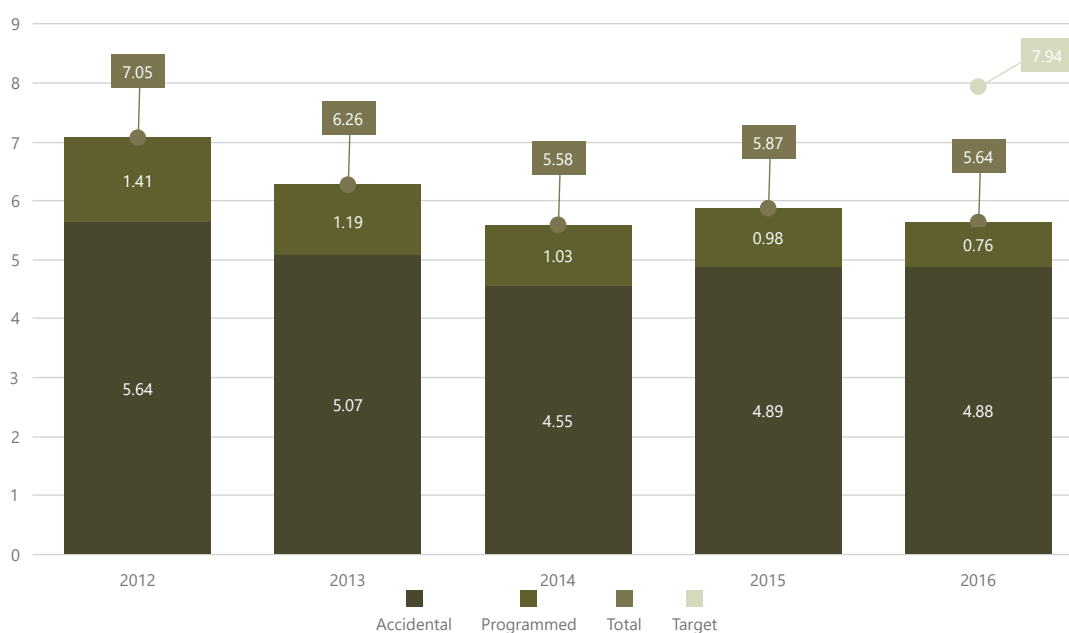
The indicators of outage duration and frequency – *SAIDI* (System Average Duration Index) and *SAIFI* (System Average Interruption Frequency Index) – are tools that help in assessing the effectiveness of these actions. The indicators for outages are divided into those for outages caused by accidents and those resulting from necessary outages pre-programmed for maintenance of the electricity system.

These charts show recent levels of the SAIDI and SAIFI indicators:

## SAIDI



## SAIFI



In 2016 Cemig paid approximately R\$ 43.1 million in compensation to consumers for violation of the individual electricity supply continuity indicators (DIC, FIC, DMIC and DICRI).

The higher SAIDI and SAIFI indicators in 2015 and 2016 contributed to the higher total of amounts paid to consumers as compensation, but the main factor in complaints was the increase in tariffs charged to the consumer.

YEAR	COMPENSATION (R\$ MILLION)
2012	36,4
2013	24,3
2014	20,1
2015	37,3
2016	43,1

To reduce the amounts of compensation, and in preparation for the new tariff review cycle (2018-22), Cemig has made proposals to acquire *compact substations* – a solution intended for installation in both urban and rural areas of the state

that would aim to enhance regulatory compliance by standardizing substations to a pattern, using less land area and reducing environmental impact. The proposal arises from Cemig's experience, the regulatory structure, and the expansion of Cemig D's distribution system.

## MANAGEMENT OF ENERGY LOSSES

EN7

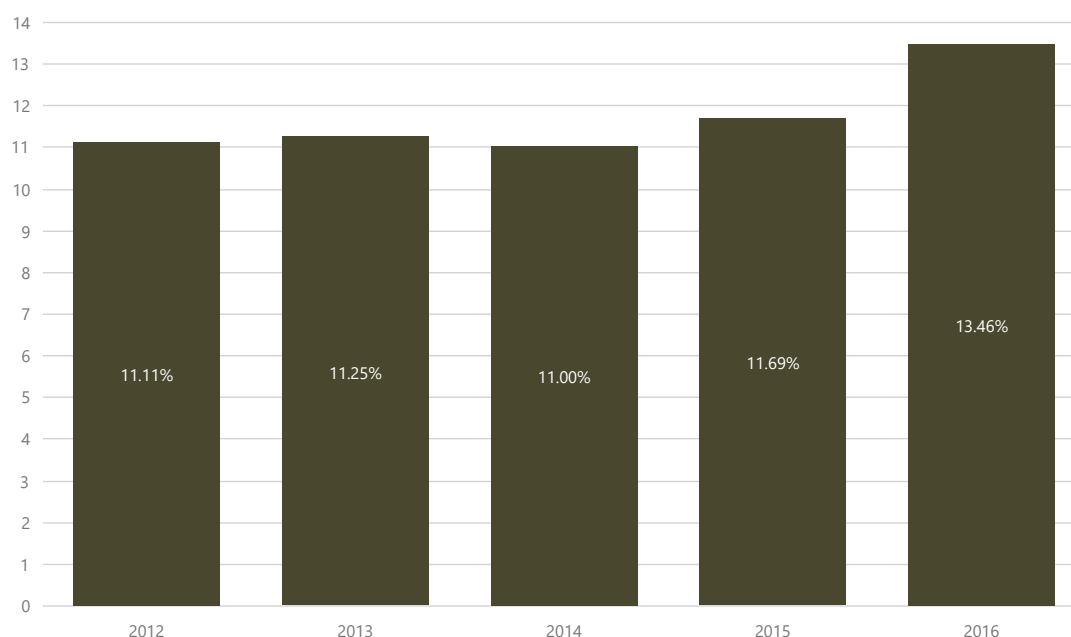
Controlling electricity losses is a very important subject for distributors – and a strategic goal for Cemig – due to the effects of losses on sustainability and the environment (unnecessary greenhouse gas emissions), protection of revenue, electricity supply quality, public safety, and revenue not earned.

Total losses in distribution (measured by the IPTD index) are separated into (i) technical losses (PPTD index), and (ii) non-technical losses – otherwise known as commercial losses (PPNT index). They are calculated as the difference between what was invoiced and the amount calculated as lost in the grid, as arbitrated by the CCEE. Technical losses are inherent to the transport of energy through transmission and distribution lines and equipment. Among other factors, they can arise from dispatch conditions at generating stations, works in progress on strengthening the network, behavior of the consumer market, and adoption of specific loss-reduction measures. Non-technical losses involve deficiencies or irregularities in measurement and/or billing of consumer units, and clandestine connections to the distributor's network. Control of non-technical losses is fundamental for minimizing the Company's financial losses, which are in part passed through to the tariff of those consumers who pay the correct amount, on time, during the process of tariff review.

The principal risk associated with management of losses is of not meeting the regulatory targets established by Aneel for the current tariff cycle (2013-17). This is a high risk in view of the challenging limits imposed by Aneel in the last tariff review, resulting from the adoption of simplified statistical models for the calculation of technical and non-technical losses. Further, the recent changes made by the federal government in the electricity sector, which culminated in successive tariff adjustments, and the present Brazilian macroeconomic context of recession (falling GDP, and rising inflation and interest rates) impose budgetary restraints on application of the investments and controls that are necessary, and also signal the possibilities of an increased percentage of non-technical losses of electricity.

In its decision on these regulatory targets, made at the time of Cemig D's third cycle of periodic tariff reviews, in 2013, Aneel significantly altered the methodology of calculation of technical losses, especially in the simplified calculation models for the medium and low voltage segments. These changes resulted in application of challenging targets for the Company.

Total Losses in Distribution





The IPTD index (total losses in Distribution) in 2016 was 13.46% of the total of power injected into the distribution system – this was 0.94 percentage points higher than in 2015, and higher than the regulatory target of 10.79% set for the end of 2016. The Technical Losses component (PPTD) in 2016 was 9.09% (of the total energy injected into the distribution system) – or 0.37 percentage points lower than in 2015, and compares to a regulatory target of 7.84%. The index of non-technical losses (PPNT) was 4.37%, compared to a target of 3.03%.

Factors in this increase included the adverse macroeconomic situation, with high inflation and unemployment coinciding with tariff adjustments (approximately 46% for the residential consumer category in 2014–15). At the same time, in line with this scenario, there was a reduction in execution of inspection services at consumer units.

A total of approximately 26,000 inspections in 2016 was a contributing factor in reducing non-technical losses in 2016 – resulting in recovery of 36 GWh and an increase of 80 GWh. This was a lower number of inspections than in 2015, but the volume gained in 2016 (R\$ 66 million) was relatively unchanged from the previous year, reflecting the strong volume of collections achieved in 2015 (R\$ 30 million), and the continuing contribution (R\$ 36 million) of the inspections made in 2015 (increasing total volume in 2016).

In a separate effort to combat commercial losses in 2016, and educate the population on the various types of damage caused by the related irregularities, Cemig carried out various multiple inspections at strategic points in Belo Horizonte and interior regions of the states, with simultaneous media advertising and news reports.


Other improvements were also put in place: in the software that selects targets for inspection (SGC/SAP/SAS/MECE); in the quality of the process of collection for irregular consumption; and in 'bulletproofing' of the revenue from medium- and large-scale consumers. Since 2012 Cemig has had a structure dedicated to distance metering, enabling its Integrated Metering Center to remotely monitor approximately 13,000 large clients, which provide some 45% of its total billing.

Another important action to mitigate commercial losses is the program to modernize all consumption meters throughout the state. Under this program, approximately 215,000 obsolete consumption meters were replaced in 2016 by new meters with electronic technology, providing more exact metering and reducing susceptibility to theft of power by interference with them.

The actions avoided emissions of 3,197.4 tons of CO<sub>2</sub>.

## TARIFFS: COMPONENTS, AND ADJUSTMENTS

Tariffs are an important subject for Cemig, since their levels directly influence the Company's economic and financial situation – and hence its sustainability. The methodology adopted by the regulator (Aneel) for setting tariffs and regulatory revenues is based on the concept that the revenue should be sufficient for the concession holder to achieve economic and financial equilibrium.

Aneel sets and defines levels of revenue: for the distribution business, through tariffs; and for the transmission business, in the form of Permitted Annual Revenue (Receita Anual Permitida, or RAP). For the generation business, this has become a very significant subject, especially since Law 12783 

Note: This law made new rules governing electricity generation, transmission and distribution, reduction of the sector's internal charges, and tariffs.

, of

January 11, 2013.

In 2015, Cemig won Lot D in Aneel Auction 12/2015 for commercial operation of the concession of 18 generation plants. Under the new system, Cemig sells the electricity from these plants under the 'Physical Guarantee Quota' system, and receives a regulated revenue: the Annual Generation Revenue (Receita Anual da Geração, or RAG). Many of the plants that Cemig won at this auction were already Cemig plants, whose concession periods had expired.

The risks associated with the subject are inherent to the logic of regulation by incentive, which simulates competitiveness in the market, creating a demand for the company to continuously seek efficiency and best practices. Another factor

generating risk in regulated businesses is the possibility of new regulatory rules being introduced due to changes in policies for the sector, changing the established scenario. To identify and manage regulatory risks, Cemig monitors and analyzes the regulatory context governing electricity services – and proposes changes to maximize and safeguard the Company's results, aligned with the interests of clients and consumers.

The Company maintains a dialogue on management of tariffs through active participation in public hearings held by Aneel, and with the Mining and Energy Ministry, on the subjects related to economic and financial regulations, pointing out any unforeseen negative impacts in proposals that are made, and contributing improvements. Internal support for full understanding of the regulatory rules, within the Company, is also an important aspect of tariff management.

## Tariff Adjustment

### The Annual Tariff Adjustment for Distribution – Cemig D

This adjustment is made annually, in May, except in the year when there is a periodic tariff review. Its structure is to pass through 100% of the changes in the distributor's non-manageable costs, and monetary updating on the manageable costs, which are established in the Tariff Review. The index for adjustment of manageable costs is the IGP-M, but in addition, an 'X Factor' is deducted which is designed to capture productivity, following the method of a price-cap regulatory model.

Effective from May 28, 2016 through May 7, 2017, Aneel increased the rates Cemig D can charge by an average of 3.78%.

Three factors contributed to the new level of costs taken into account: purchase of electricity, a reduction of 3.77% year-on-year; sector charges, up 5.95% year-on-year; and transmission costs, down 1.37% year-on-year. To this was added an increase of 2.97%, reflecting the variation of the costs directly associated with the distributor, which are referred to as 'Portion B'.

For residential consumers, the increase in the rate charged was 4.21%. For industrial and service sector consumers, served at medium and high voltage, the average increase was 2.06%. For those served at low voltage, the average increase was 4.63%.

Of the amount charged to the consumer on the invoice, 21.4% remains with Cemig D: this total referred to as 'Portion B', is to remunerate the investment, cover depreciation and pay the concession holder's running costs. The remaining 78.6% is passed on, and comprises: (i) 'Portion A', comprising electricity purchased for resale (28.7%), sector charges (18.3%), and transmission costs (2.9%); and (ii) taxes: ICMS (22.1%) and the Pasep and Cofins taxes (total 6.5%).

### The 'Tariff Flag' system

Aneel has instituted a tariff 'flag' mechanism, to send consumers a signal of the conditions affecting electricity generation in their region in the month of their consumption, enabling the client to practice a rational response to the price of electricity. The mechanism came into force in January 2016 (under Sub-module 6.8 of the Tariff Regulation Procedures – 'Proret').

The system has three 'flags': the green flag indicates that conditions are favorable to generation, and carries no tariff increase; while the yellow and red flags indicate respectively less favorable and critical conditions for generation, and result in additional charges on the consumer tariff.

Distributors pay their Flag Tariff revenues into a central account managed by the Wholesale Market (CCEE). The funds available in this account are paid back to distributors, depending on their needs to cover the costs of thermally-generated electricity and the effects of exposure to the spot market.

### The Annual Tariff Adjustment for Transmission – Cemig GT

The annual adjustment of transmission revenue takes place on July 1 of each year, except when there is a Periodic Tariff Review. This process aims to adjust the approved Permitted Annual Revenue (RAP) for inflation, and add a component of new RAP for improvements or additions to the network that have come into commercial operation during the last tariff cycle (July of the previous year to June of the year of the adjustment), and calculate the Adjustment Amount. The methodology adopted is Revenue-Cap.

The inflation index used by Aneel for monetary adjustment of Cemig GT's revenue is the IPCA. As well as concession 006/97, Cemig GT also has the concession for a substation, won through a tender, the Itajubá substation, which is also adjusted in July, for which the adjustment index is the IGP-M inflation index.

In July 2016, the RAP of Cemig GT (under contract 006/97) was increased by 26.5%, resulting from (i) application of the IPCA inflation index to the revenue previously ratified, and (ii) recognition of new improvements strengthening the network.

For Cemig Itajubá (contract 079/2000), the increase in RAP was 3.0%. This contract has a provision that the RAP in the 16<sup>th</sup> year of commercial operation, until the end of the concession, would be 50% of the RAP applicable in the 15<sup>th</sup> year. Since, in this adjustment, some of the assets involved had reached their 15<sup>th</sup> year of useful life, a part of the total was reduced by 50% – resulting in an adjustment of RAP lower than inflation.

The approved and ratified Revenue for the 2015-16 period, for the two concessions, is in aggregate R\$ 333,870,611.56.

#### Tariff Adjustment for Generation – Cemig GT

Since 2015 Cemig GT has been operating the São Simão hydroelectric plant on a provisional basis, under the 'quotas' regime. The Annual Generation Revenue (Receita Anual de Geração – RAG) approved was calculated proportionately for the period September 14, 2015 to June 30, 2016 – or 291 days. The annualized value of the 2015-16 RAG, compared with the value published in July 2016 (for the 2016-17 cycle) shows an increase of 137.18%. Part of this adjustment arises from:

1. Inclusion of the monetary adjustment to the Charges for Use of the Transmission System (EUST) published in 2015 (these charges were R\$ 64,354,000 in 2015 currency).
2. Inclusion of the correct values of EUST for 2016-17.

Cemig GT won the auction for the concession to operate Lot D in Aneel Auction 12/2015, and began operating that group of plants on the 'quotas' regime, in accordance with the bid tender. For the plants in that tender, as well as the RAG, a Concession Grant Fee (Receita da Bonificação da Outorga – RBO) was also established as payable by the winning operator. In 2016, the RAG and the RBO are the same as specified in the proposals presented by the winning concession holders in Auction 12/2015, without monetary updating, because the contracts established that adjustment can only take place after the minimum legal period of 12 months from the auction. Also, as from January 1, 2017 these plants will have their RAG and RBO reduced to 70% of their starting value, under the terms of the contract.

Considering that the RAGs and RBO of this group of concessions will not be updated until the 2017-18 cycle, Aneel's adjustment included only updating of the charges and the 30% reduction in the RAGs as from January 1, 2017. The resulting average adjustment of the revenues from these facilities was negative: a reduction of 10.34%.

The Company and its electricity distribution subsidiary decided that for optimum presentation of operational and financial performance, the adjustment to the expectation of cash flow from the indemnifiable financial asset of the concession of the distribution company, originally presented in Financial revenue (within Financial revenue (expenses)), should more appropriately be classified in Operational revenues, together with the other revenues related to its end-activity. Cemig believes that this allocation gives a more accurate reflection of the electricity distribution business model, and provides a better presentation of its performance.

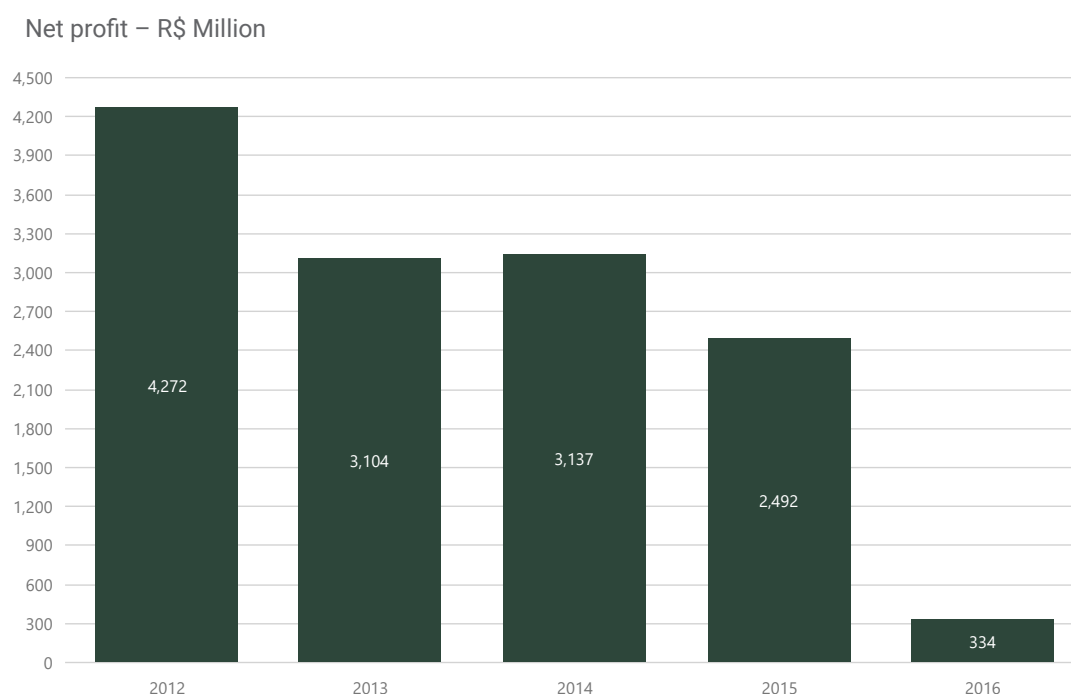
In accordance with the orientations of CPC 23 (IAS 8) – Accounting Policies, Changes in Estimates and Correction of Errors, the Company and its subsidiaries have changed their previously adopted accounting policy for an accounting policy that better reflects the performance of the businesses of the Company and its subsidiaries and have thus proceeded to reclassify, backdated, their income statements and added value statements originally issued on March 28, 2016. The reclassifications that have been made have not altered the total of Assets, Equity, Net profit, the Statement of comprehensive income, or the Statement of cash flows.

For complete information on the scope of the Standardized Financial Statements (DFP), which include the wholly-owned subsidiaries, jointly-controlled entities and directly-held equity interests, please see Principles of Consolidation in the Notes to the Financial Statements.

For complete information on the re-presentation of the accounts for 2015, please see Note 2.8 to Cemig's Standardized Financial Statements – DFP 2016.

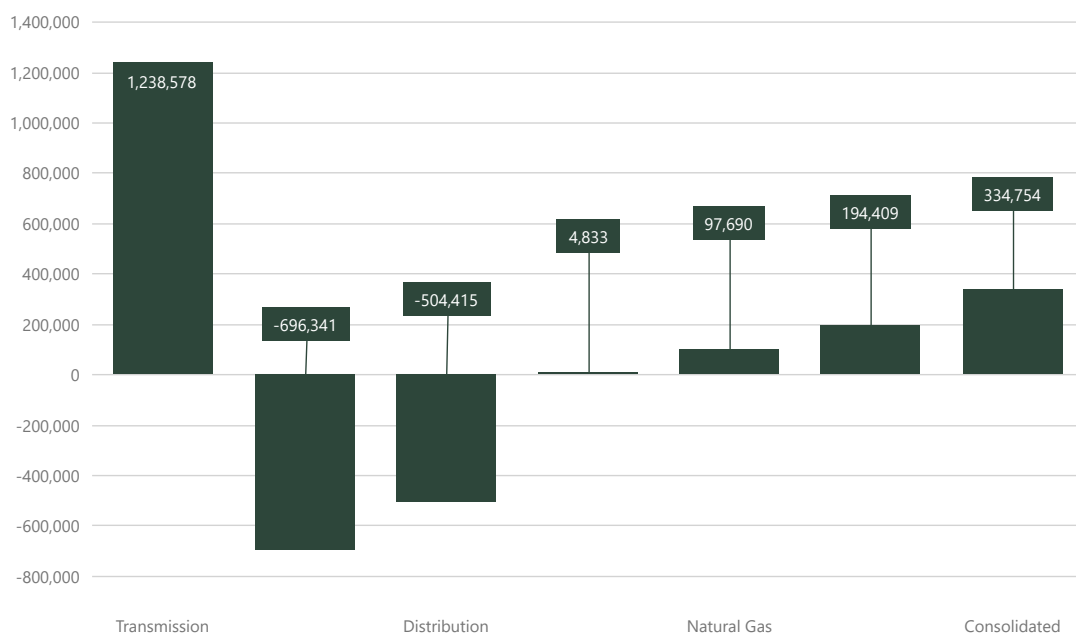
## NET PROFIT

Cemig reported net profit of R\$ 334 million for 2016. This compares to net profit of R\$ 2,469 billion for 2015 – a year-on-year reduction of 86.47%.



Net profit by sector of operation:

## Profit (loss) by activity – R\$ Million



## OPERATIONAL REVENUE

Operational revenue breaks down as follows:

Operational Revenues			
R\$' 000	2015 Restated	2016	Change %
Revenue from supply of electricity	22,526,275	23,429,713	4.0%
Revenue from Use of Electricity Distribution Systems – "TUSD"	1,465,399	1,705,420	16.4%
CVA and other financial components	1,703,627	-1,455,057	-
Transmission revenue			
Transmission concession revenue	261,470	311,889	19.3%
Transmission construction revenue	146,030	53,824	-63.1%
Transmission indemnity revenue	100,528	751,101	647.2%
Distribution construction revenue	1,105,806	1,139,316	3.0%
Adjustment of the expectation of the cash flow of the indemnifying financial asset of the distribution concession	575,631	7,582	-98.7%
Revenue from financial update of bonus for grant	-	299,537	
Transactions in electricity on the CCEE	2,424,567	160,763	-93.4%
Supply of natural gas	1,666,688	1,444,166	-13.4%
Other operating revenues	1,441,186	1,421,074	-1.4%
Taxes and charges applied to Revenue	-11,549,365	-10,496,672	-9.1%
<b>Net Operational Revenue</b>	<b>21,867,842</b>	<b>18,772,656</b>	<b>-14.2%</b>

Note: See more details in Note 14 to Cemig's Standardized Financial Statements – DFP 2016.

### Revenue from supply of electricity

Revenue from total sales of electricity in 2016 was R\$ 23.430 billion – or 4.01% more than in 2015, when this revenue was R\$ 22.526 billion.

## Final consumers

Total revenue from electricity sold to final consumers, excluding Cemig's own consumption, was R\$ 20.458 billion in 2016 – or 0.68% more than in 2015 (R\$ 20,319 billion).

The main factors in this revenue were:

- The Extraordinary Tariff Adjustment for Cemig D, which resulted in an average increase in consumers' tariffs of 28.76%, applicable from March 2, 2015 (full effect in 2016).
- The Annual Tariff Adjustment for Cemig D, with average effect on consumer tariffs of 7.07%, effective from April 8, 2015 (full effect in 2016).
- The Annual Tariff Adjustment for Cemig D, with average effect on consumer tariffs of 3.78%, effective from May 28, 2016.
- Reduction of revenue from the 'Tariff Flag' system, to R\$ 360 million in 2016, compared to R\$ 1.067 billion in 2015, due to the improvement in the hydroelectric reservoir water storage levels – enabling lower additional charges to be made in 2016 under the 'Flag' system of temporary additional tariffs.
- Volume of electricity sold was 6.49% lower.

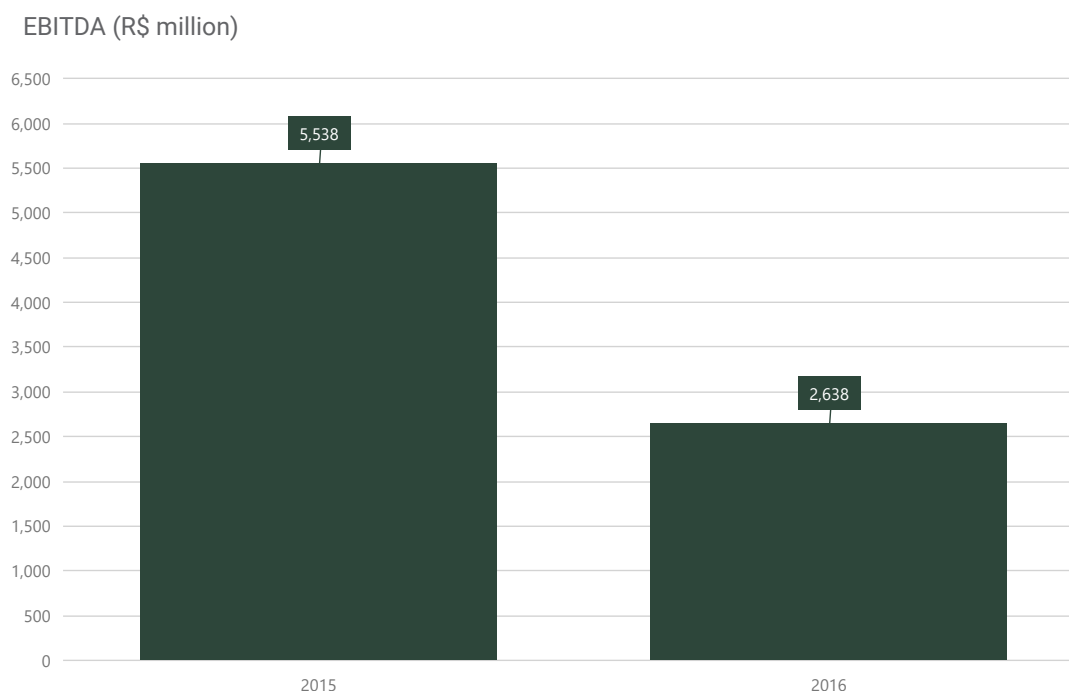
OTHER REVENUES			
Receita	2015	2016	Change %
Charged service	13,504	5,628	-58.3%
Telecoms services	133,894	137,498	2.7%
Services rendered	130,687	167,272	28.0%
Subsidy payments received	995,616	1,000,745	0.5%
Rental and leasing	93,119	105,156	12.9%
Outras	74,366	4,775	-93.6%
Total	1,441,186	1,421,074	-1.4%

## OPERATIONAL COSTS AND EXPENSES

Operational costs and expenses, excluding Financial Revenue (expenses) in 2016 were R\$ 15.903 billion, 13.04% less than in 2015 (R\$ 18.288 billion). There is more on the breakdown of Operational costs and expenses in the Note 25 to Cemig's Standardized Financial Statements – DFP 2016.

## EBITDA (EARNINGS BEFORE INTEREST, TAX, DEPRECIATION AND AMORTIZATION)

EBITDA – R\$ MILLION	2015	2016	CHANGE %
Net profit for the period	2,469	334	-86.5%
+ Income tax and Social Contribution tax	893	33	-96.3%
+ Financial revenue (expense)	1,341	1,437	-7.2%
+ Depreciation and amortization	835	834	-0.1%
EBITDA	5,538	2,638	-52.4%



Cemig's 2016 Ebitda was 52.37% lower than in 2015. This due, mainly, to the lower net profit in 2016 compared to 2015. The resulting Ebitda margin was lower, at 14.05% in 2016, than in 2015 (when Ebitda margin was 25.32%).

## INCOME AND SOCIAL CONTRIBUTION TAXES

In 2016, the expense on income tax and the Social Contribution tax totaled R\$ 33 million, on pre-tax profit of R\$ 368 million, an effective rate of 8.97%. In 2015, the expense on income tax and the Social Contribution tax totaled R\$ 893 million, on pre-tax profit of R\$ 3.362 billion, an effective rate of 26.55%. There is a reconciliation of these effective rates with the nominal tax rates in Note 10 to Cemig's Standardized Financial Statements – [DFP 2016](#).

## NET FINANCIAL REVENUE (EXPENSES)

Cemig reports Net financial expenses of R\$ 1.437 billion in 2016, compared to net financial expenses of R\$ 1.341 billion in 2015. The main factors in Financial revenue (expenses) are in Note 27 to Cemig's Standardized Financial Statements – [DFP 2016](#).

## LIQUIDITY AND CAPITAL RESOURCES

Our business is capital-intensive. Historically, we have a need for capital to finance the construction of new generation facilities and expansion and modernization of the existing generation, transmission and distribution facilities.

Our liquidity requirements are also affected by our dividend policy. We finance our liquidity and capital needs principally with cash generated by operations and, on a lesser scale, with funds from financing.

Cemig has assumed a significant amount of debt to finance the capital expenses that are necessary for compliance with its long term growth objectives. On December 31, 2016 consolidated current liabilities exceeded consolidated current assets by R\$ 3.162 billion. On December 31, 2016, short-term loans and financings totaled R\$ 4.837 billion, and long-term loans, financing and debentures totaled R\$ 10.342 billion. Maturities in the first, second, third and fourth quarters of 2017 were R\$ 783 million, R\$ 1.017 billion, R\$ 579 million and R\$ 2.458 billion, respectively. The Company had positive operating cash flows in 2016 and 2015, respectively, of R\$ 1.213 billion and R\$ 3.007 billion.

If, for any reason, Cemig has difficulty in obtaining financings, this could compromise its conditions for making investments in the amounts necessary to maintain the present level of investments or its long-term objectives, and could compromise its ability to pay financial obligations for principal and interest owed to its creditors by agreed maturity dates, considering that the cash flow from its operations would be insufficient to cover the investment program and all of its debt servicing. A reduction in the investment program or the sale of assets could significantly affect the result of its operations.

There are more details in Note 1 to Cemig's Standardized Financial Statements – DFP 2016.

## CASH AND CASH EQUIVALENTS

Cash and cash equivalents at December 31, 2016 totaled R\$ 995 million, compared to R\$ 925 million on December 31, 2015. No cash nor cash equivalents were held in any other currency than the Real. The main components of this variation:

### Cash flow of operational activities

The totals of Net cash generated by operational activities in 2016 and 2015 were, respectively, R\$ 1.213 billion and R\$ 3.007 billion. The lower figure for net cash from operations in 2016 than in 2015 principally reflects the payment in 2016, by Cemig GT, of the Concession Grant Fee, of R\$ 2.216 billion, for the concessions of 18 hydroelectric plants, awarded at the Aneel auction of December 2015.

### Cash flow of investment activities

The Company used net cash of R\$ 614 million in investment activities in 2016, compared to net cash of R\$ 3.217 billion used in investment activities in 2015. The figure for cash consumed in investment activities in 2016 arises principally from injection of capital totaling R\$ 1.455 billion into investees, partially offset by funds invested in Securities, totaling R\$ 1.401 billion.

### Cash flow of financing activities

In 2016 financing activities resulted in a net outflow of R\$ 529 million, comprising: R\$ 5.592 billion paid in amortization of financings; R\$ 675 million paid in dividends and Interest on Equity; and inflow from financings of R\$ 5.737 billion.

Net cash generated by financing activities in 2015 totaled R\$ 247 million, comprising amortizations of financings totaling R\$ 4.696 billion, and payments of R\$ 796 million in dividends and Interest on Equity; partially offset by inflow of funds from financings totaling R\$ 5.739 billion.

### Funding and debt management policy

The Company maintains its commitment to ensure that its credit quality is preserved at satisfactory levels which denote low credit risk, to enable it to benefit from financial costs that are compatible with the profitability of the business, and ensure the Company's sustainability.

A major challenge that faced Cemig in 2016 was the refinancing of its short-term debt. There was a high concentration of debt becoming due in the first half in Cemig D; and in the second half in Cemig GT. These two subsidiaries succeeded in refinancing this debt, distributing the new debt over a period of up to five years, showing their capacity to access the funding market even in more challenging credit and macroeconomic scenarios.

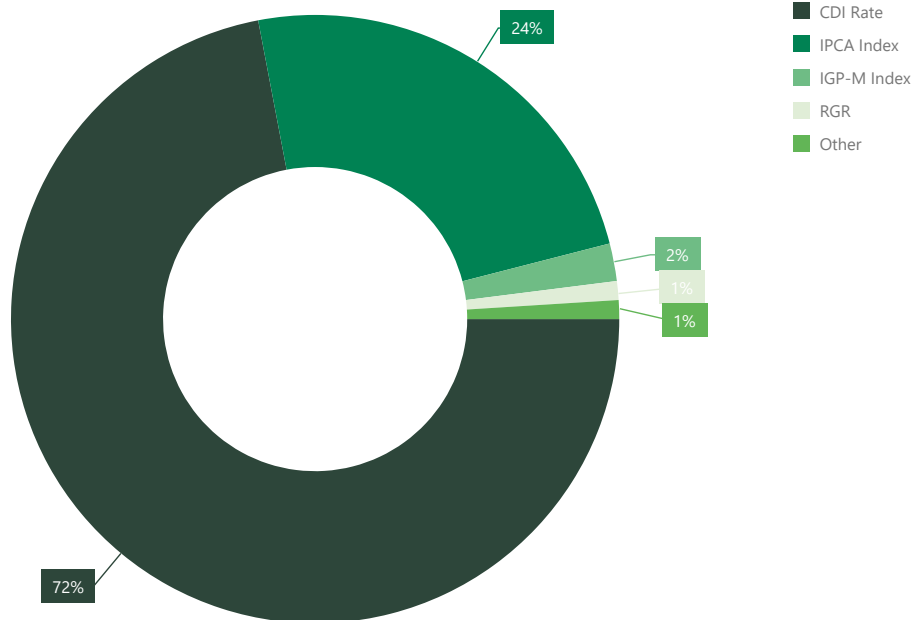
While Cemig D reduced its indebtedness by R\$ 822 million in 2016, Cemig GT, as a result of the debt contracted to finance the payment of the concession grant fee for the 18 hydroelectric plants won at Aneel's Auction 12 of December 2015, increased its indebtedness by approximately R\$ 922 million in the year.



That is to say, in spite of the significant investment in the year, with the highlight of the R\$ 2.2 billion payment for the concession grant fee, the Company has made efforts to reduce its indebtedness to the reference levels stated in its bylaws.

The details of funding raised, including costs and maturities, are given in Note 20 to Cemig's Standardized Financial Statements – DFP 2016.

Indexor of debt at December 31, 2016



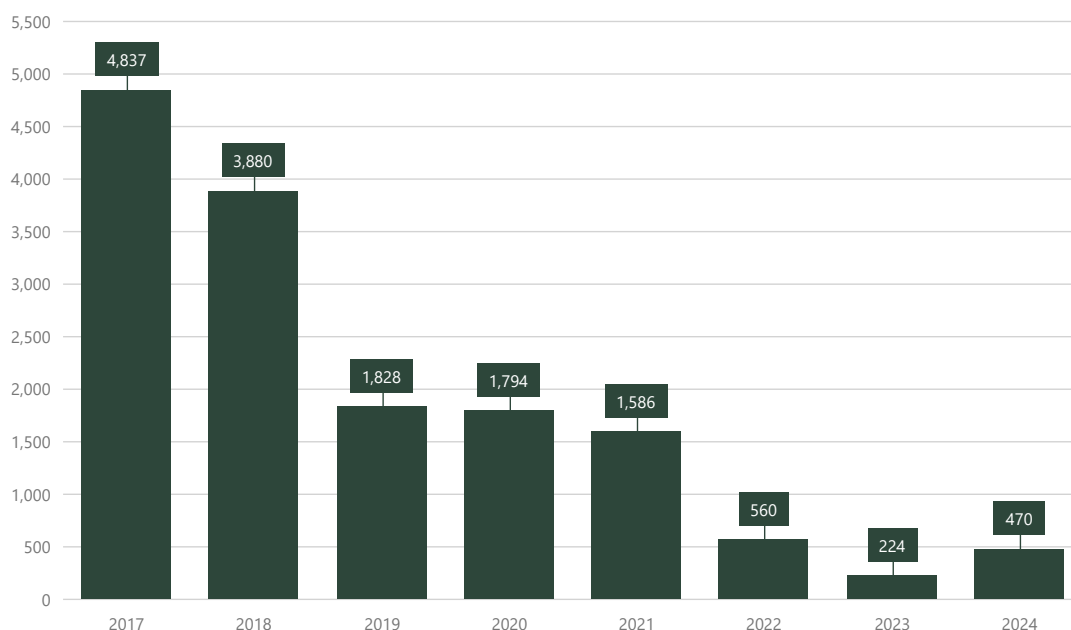
The composition of the Company's debt is a reflection of the sources of funding available to its subsidiaries through instruments referenced to the local interest rate, and also its intention to avoid exposure to debt in foreign currency (currently 0.20% of the total). The average cost of Cemig GT's debt – which is, thus, influenced by the country's policy of currently high interest rates – is 8.40% p.a. in constant currency (15.89% p.a. nominal).

In spite of the current market conditions, management has managed its debt with a focus on lengthening of maturities, to avoid pressures on cash flow that could affect liquidity and suggest refinancing risk.

Cemig GT's debt on December 31, 2016 totaled R\$ 15.179 billion, and had average tenor of 2.8 years. There are more details in Note 20 to Cemig's Standardized Financial Statements – DFP 2016.

This chart shows the present amortization timetable:

Debt maturity timetable (R\$ million)



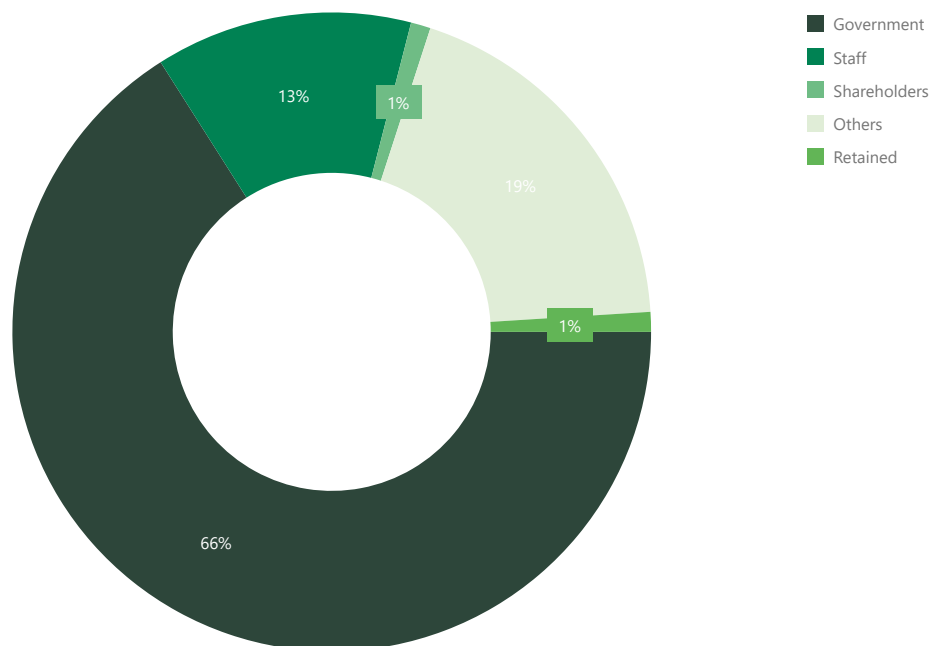
A large proportion of Cemig's debt continues to have maturities in the short term. This reflects the more restrictive market conditions of recent years; but the Company is taking measures to lengthen the debt profile and seeking to reduce the cost of raising funds. As an example of this, on December 29, 2016 Cemig GT made its seventh issue of non-convertible debentures, for R\$ 2,240,000, in a single series, with maturity at five years.

In 2016 the risk rating agencies made changes to their ratings for Cemig, Cemig D and Cemig GT, reflecting the deterioration of the country's economic situation. Standard & Poor's downgraded its Brazilian ratings for the three companies from brAA- to brBBB+, and its global ratings from BB to B+. Fitch also downgraded its Brazilian rating of the three companies from AA- (bra) to A(bra). In February, Moody's reduced its rating for the three companies on the Brazilian scale from Aa2.br to Baa1.br, and on its global rating, from Ba1 to B1.

## DISTRIBUTION OF ADDED VALUE (DVA)

The Value Added Distribution (*Demonstração do Valor Adicionado*, or DVA) is an indicator of the Company's generation of wealth, and its importance for society in general: the added value created in 2016 was R\$ 14.74 billion, which compares to R\$ 18.165 billion in 2015.

Distribution of Added Value - 2016

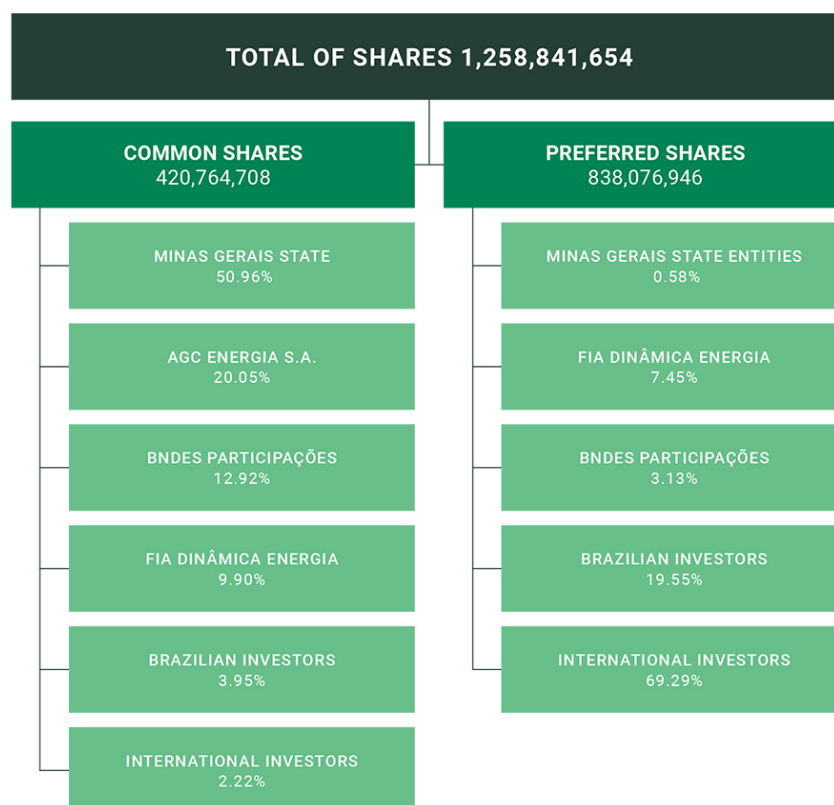


## CAPITAL MARKETS AND DIVIDENDS

Cemig's shares were initially listed on the stock exchange of Minas Gerais State on October 14, 1960, and have been traded on the São Paulo stock exchange (Bovespa) since 1972 – under the tickers CMIG3 for the ON (common) shares, and CMIG4 for the preferred shares (PN). Cemig has been listed at Corporate Governance Level 1 on the São Paulo stock exchange (BM&F Bovespa) since October 2001. ADRs for Cemig's shares have traded on the New York stock exchange since 1993 (with tickers CIG and CIG/C) – and at Level 2, since 2001. Cemig shares have traded on the Madrid stock exchange (ticker: XCMIG) since 2002.

### Stockholding structure

This Company's share capital on December 31, 2016 was R\$ 9,773 billion, as follows:



## Share prices

The closing prices of Cemig's securities in São Paulo (Bovespa), New York (NYSE) and Madrid (Latibex) in 2015 and 2016 were as follows:

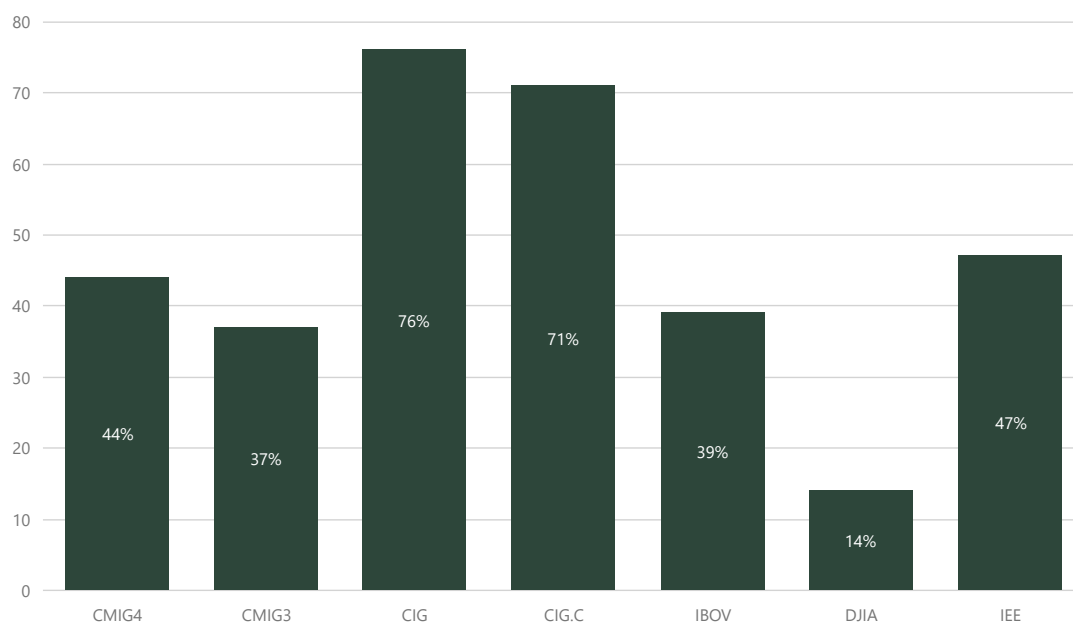
SECURITY	TICKER	CURRENCY	CLOSING OF 2015	CLOSING OF 2016
Cemig PN	CMIG4	R\$	5.97	7.71
Cemig ON	CMIG3	R\$	6.28	7.88
ADR PN	CIG	US\$	1.46	2.28
ADR ON	CIG.C	US\$	1.74	2.53
Cemig PN (Latibex)	XCMIG	Euro	1.43	2.25

Total trading volume in the preferred shares, CMIG4, in 2016 was R\$ 13.3 billion, with daily average volume of approximately R\$ 53.5 million. The total volume is 18% higher than in 2015, making Cemig's preferred (PN) shares one of the most traded on the Bovespa, thus offering investors an enhanced degree of security and liquidity.

The average daily volume of trading in the preferred shares on the NYSE in 2016 was US\$ 9.7 million, with total volume of US\$ 2.45 billion – underlining Cemig's position as a global investment option.

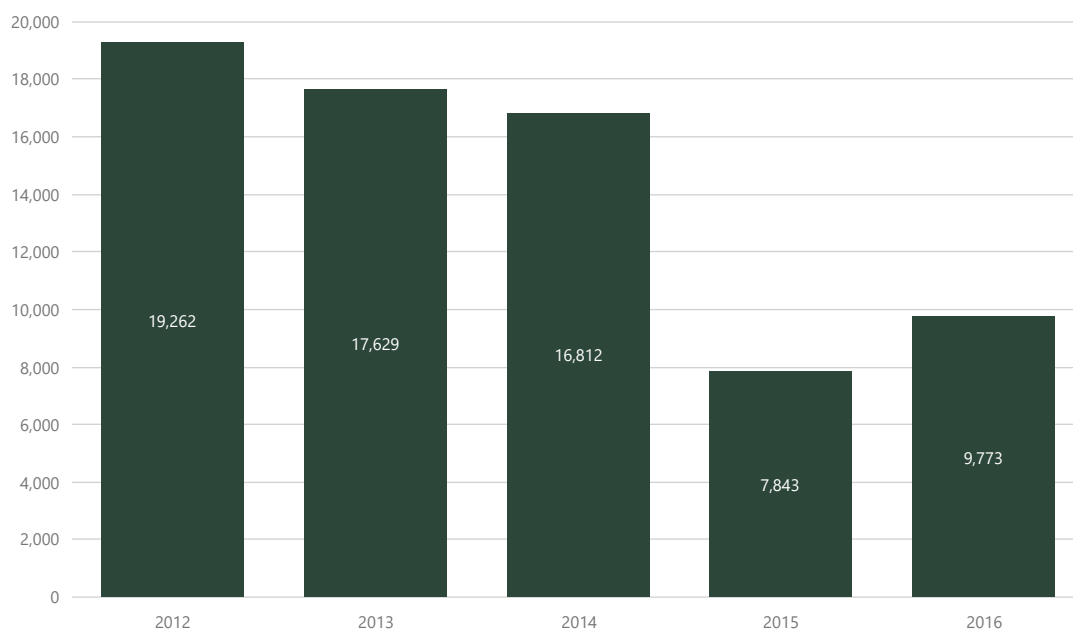
On the São Paulo exchange, Cemig was the electricity sector company with the third highest trading volume. And on the NYSE, Cemig's ADRs were the most highly traded of all ADRs in 2016. This table shows the changes in the price of Cemig's equity securities in 2016 compared to stock indices:

Change in share prices in 2016

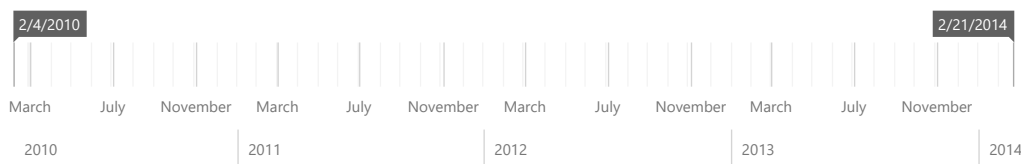
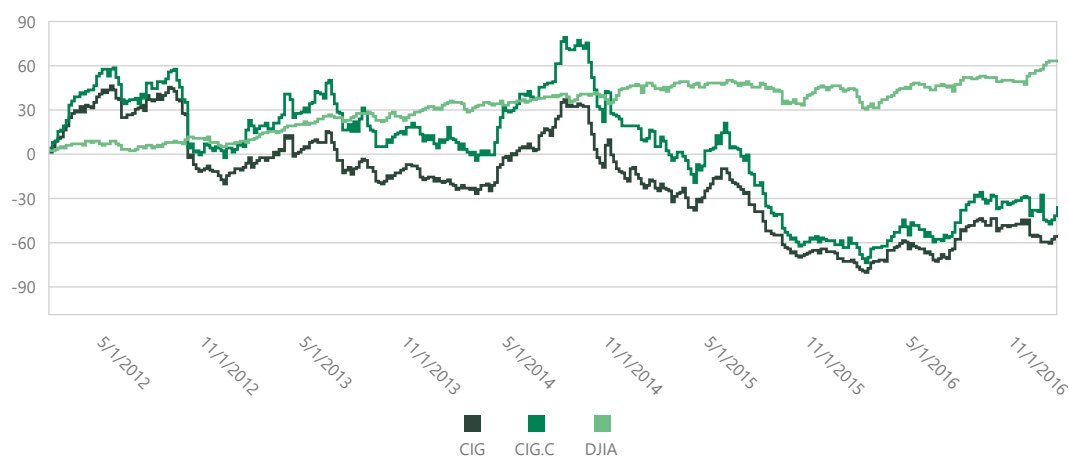
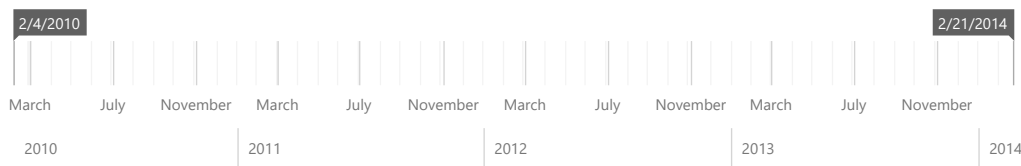
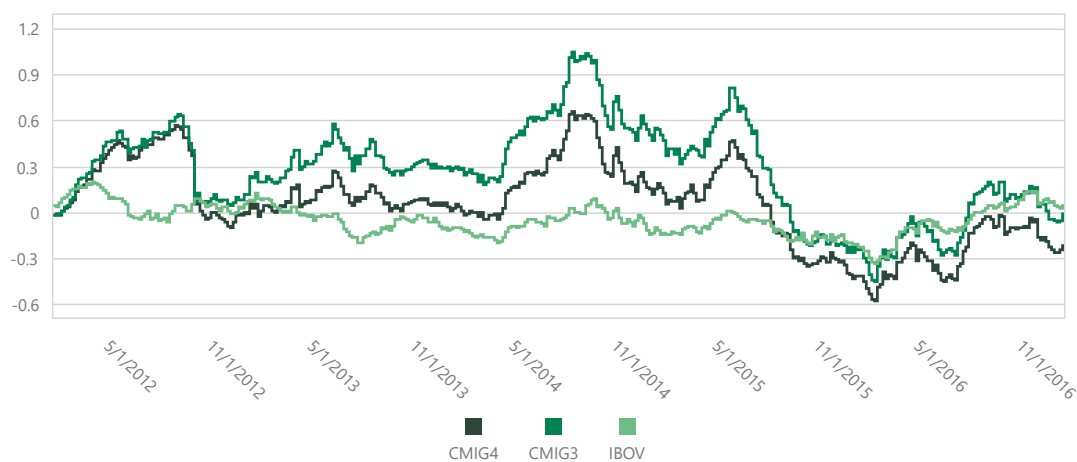


Market capitalization calculated as the totality of the company's shares at market price on the closing day of each year.

Cemig - Market Capitalisation (R\$ million)



These charts show changes in our stock prices over recent years, compared to other indicators:

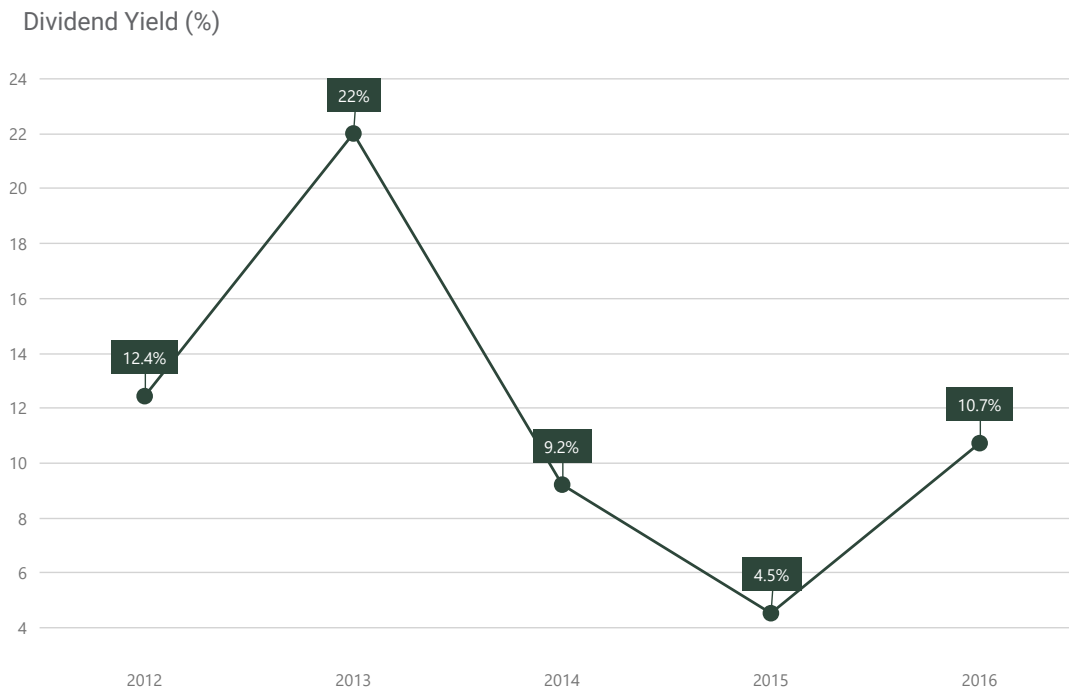


Source: Economática

### Dividend payment policy

In its by-laws Cemig assumes the undertaking to distribute, every year, a minimum dividend of 50% of the net profit for the previous year. Additionally, extraordinary dividends can be distributed each two years, or more frequently, if cash availability permits.

Dividends are usually paid in two equal installments: The first by June 30 and the second by December 30 of the year subsequent to the year for which they are calculated.



### Proposal for allocation of Net profit

The Board of Directors decided to propose to the Annual General Meeting to be held on April 12, 2017 that the net profit for 2016, of R\$ 334 million, and R\$ 37 million from Retained Earnings, should be allocated as follows:

- R\$ 204 million in the form of the minimum obligatory dividend, to be paid in two equal installments, by June 30 and December 30, 2017, to holders of preferred shares whose names are on the Company's Nominal Share Registry on the date on which the Annual General Meeting is held.
- R\$ 161 million to be held in Stockholders' equity in the Retained earnings reserve, to provide funding for the Company's consolidated planned investments in 2017, in accordance with a capital budget.
- R\$ 7 million to be held in Stockholders' equity in the Tax incentives reserve, for tax incentive amounts gained in 2016 due to investment in the region of Sudene.

Additionally, in December 2016 the Company declared payment of R\$ 380 million in the form of interest on equity, to be paid in two equal installments, by June 30 and December 30, 2017, to holders of preferred and common shares whose names were on the Company's nominal share registry on December 26, 2016. The total amount of Interest on Equity will have counterpart in the Retained Earnings Reserve account.

## MANAGEMENT OF PEOPLE

### MANAGEMENT OF PEOPLE DMA

SDG8

To achieve its vision for the future, Cemig needs people who are capable, productive and able to support the challenges and aspirations described in the corporate strategy. The Company uses its Human Resources Policy as a guide for employment relations, adopting a people management model that adds value to the businesses. In the Planning Cycle for 2016-20, four priority challenges were identified, as pillars for management of people: to increase productivity; strengthening of meritocracy; development of people and leadership; and workplace health and safety.

For optimized management of these challenges and the workforce, the Company has built a strategic plan based on the premise of valuing human beings, which will make a decisive contribution to achieving the corporate strategic objectives.

Three important human management tools employed in 2016 were the creation of the Strategic HR Program, the 2016 Performance Evaluation, the Leadership Development Program, the initiatives of the Cemig Women's Committee, and the Voluntary Retirement Program.

The Strategic HR Program: was tailored to the strategic corporate planning aims, and includes 19 initiatives to support senior management in taking decisions on human resources and meeting the four challenges identified. Actions taken include review of the Jobs, Careers and Remuneration Plan; creation of a process of headcount management; programs for development of people and leadership; a risks and accident prevention plan; and actions to promote employees' health.

The main benefits expected are: an updated Human Resources Policy that is aligned with today's context; achievement of new levels of productivity; creation, restructuring, updating and implementation of efficient people managing processes, among others.

Details on the other highlights can be found throughout the chapter.

## WORKFORCE PROFILE

G4-10  
LA1  
LA12

### EMPLOYEES BY GENDER AND FUNCTIONAL CATEGORY



The work of management of people also includes management of the contracts and working relationships of employees contracted as Temporary Labor, under-age registered apprentices, and interns. Temporary Labor Contracts are made for specific and temporary conditions, where there is no possibility of filling the vacancy in any other way, with a defined period.



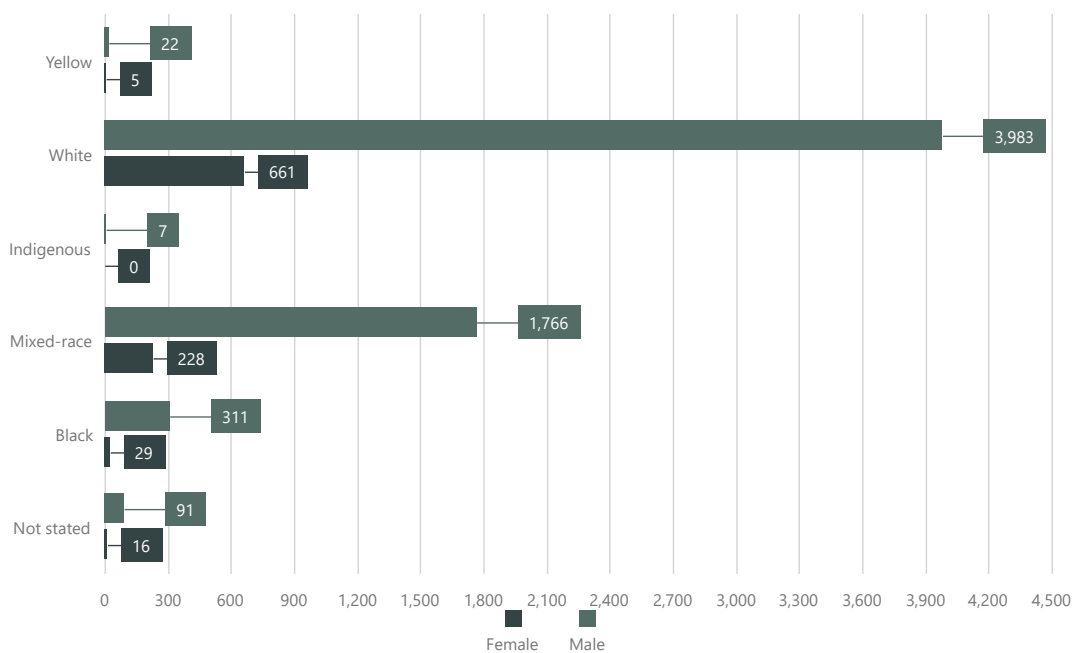
Cemig's internship program aims to give students of technical and university courses with opportunities for professional development by the association of theory and practice. The *Cemig Apprentices Program* provides teenagers from less privileged backgrounds with development of new competences, through a professional apprenticeship, under supervision of tutors who are employed at Cemig.

Year	CEMIG'S OWN STAFF								Temporary					
	LEADERSHIP		UNIVERSITY LEVEL		TECHNICAL LEVEL		TOTAL		Temporary		Interns		Minors, Apprentices	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2016	225	30	1,028	270	4,927	639	6,180	939	81	111	83	114	87	117
	255		1,298		5,566		7,119		192		197		204	
2015	229	33	1,099	293	5,459	747	6,787	1,073	40	56	162	164	102	153
	262		1,392		6,206		7,860		96		326		255	
2014	212	29	1,050	288	5,572	770	6,834	1,087	149	252	171	165	117	138
	241		1,338		6,342		7,921		401		336		255	

M: Male F: Female

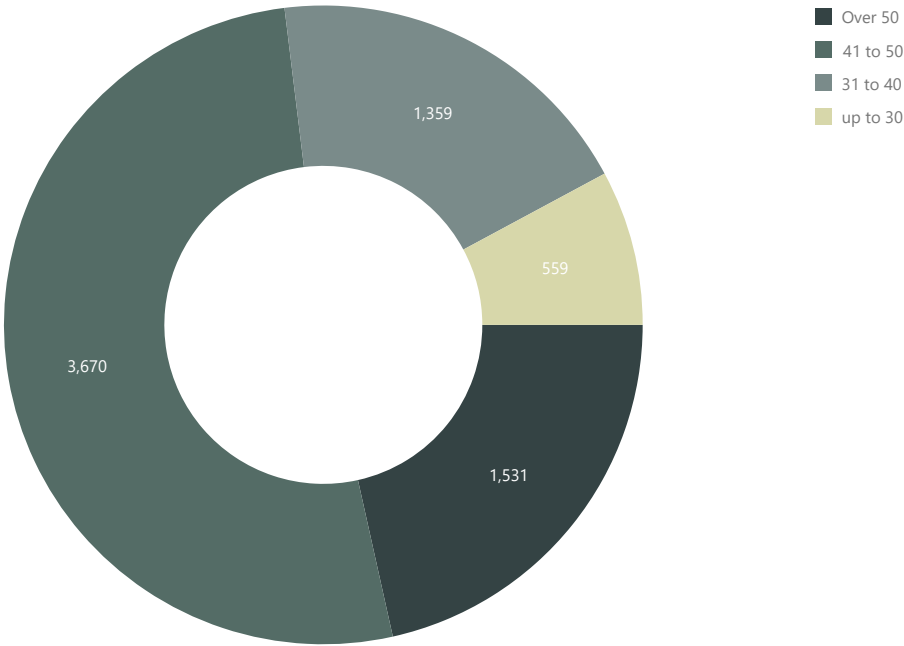
Due to the nature of the company's current business and operations, 99.5% of its workforce are in the State of Minas Gerais. Only 32 employees work outside the State. Employees black, mixed-race or indigenous origin are 33.26% of the company's employees, and 11.06% of these are women.

Employees by race, gender



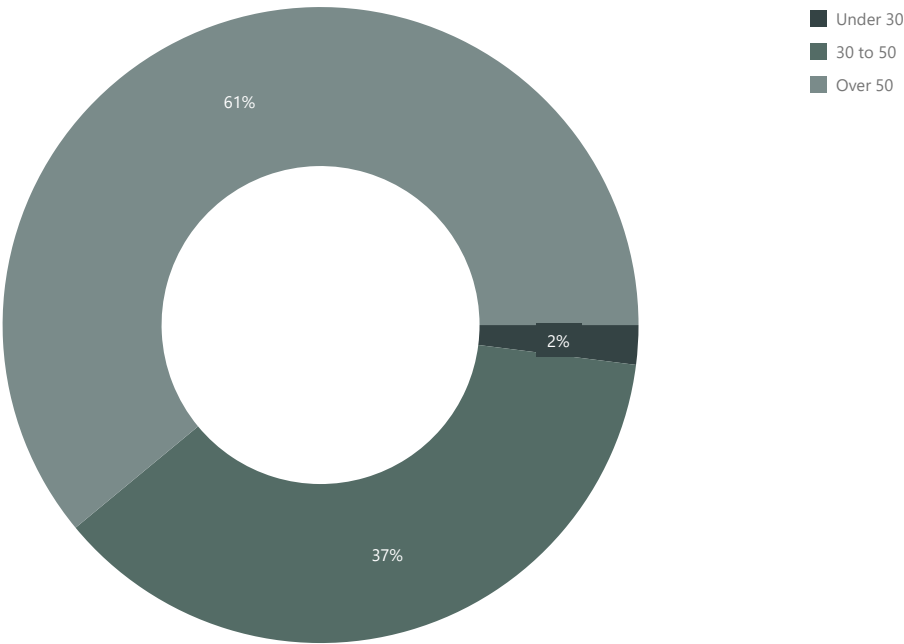
The diversity of generations can be seen in the stratification of the workforce – seniority and experience are provided by the 21.5% of Cemig's professionals who are over the age of 50.

Employees by age



Of senior management, 61% are over the age of 50.

Ages (in years) of Directors and Board Members



In 2016 Cemig's total headcount was significantly reduced, due to the PDVP 2016 - Voluntary Retirement Program, which continues the Company's practice of assisting retirement of those employees who fulfill the complete conditions. A total of 822 people left the Company in 2016 – a total turnover for the Company of 6.2% – comprising 7.4% for men and 6.0% for women. Due to the characteristics of the program none of these were layoffs or in any way multiple dismissals. Cemig, as a company with mixed government and private-sector stockholdings, is part of Brazil's Indirect Public Administration, and is subject to entry of new employees by public competition. In 2016 no public competition was held. On the other hand, 66 employees were hired as a result of Public Competition 01 of 2012, and one as a result of Public Competition 01 of 2014.

Outsourced employees are managed by specific contracts made by the business areas that contract them, including provisions relating to questions of health and safety, a subject that is present at the various stages of contracting. There are

more detail in the item *Suppliers*.

## COMPENSATION, BENEFITS AND PREPARATION FOR RETIREMENT

LA2  
LA3  
LA10  
EC3  
EC5  
EU15  
SDG8

Cemig provides its employees with remuneration and benefits in harmony with the best practices in the market, aiming always to sustain the Company's attractiveness, and in line with Sustainable Development Goal 8 – “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”. For this purpose Cemig has a Jobs, Career and Remuneration Plan (the PCCR), in which remuneration is set, taking into account job assessments, made in accordance with a specific methodology. This plan is oriented to attract, develop, retain and attribute value to the Company's best professional talents, who are necessary for the conduct of its business, preserving the corporate culture and alignment with its objective, its competitiveness and the goal of longevity in its market, without losing sight of the specifics of its segment of operation. It also establishes criteria for job changes and promotions, based on factors including the employee's performance.

Under the reformulated strategic planning, completion of the new PCCR is scheduled for 2017. The objective is to adapt it to the new reality of the corporation's businesses, the Company's strategic planning, and alignment with the other HR processes.

This table shows ratios comparing the lowest base salary paid by Cemig, and the lowest remuneration, with the current minimum wage:

COMPANY	CEMIG H	CEMIG GT	CEMIG D
Lowest base salary/ minimum wage at Dec. 31, 2016	3.74	2.16	2.16
Lowest remuneration/ minimum wage at Dec. 31, 2016	3.74	2.81	2.43

Cemig pays its own employees a variable remuneration – the Profit-Sharing, or PLR - *Participação nos Lucros e Resultados*, which is usually agreed annually with employees and labor union representatives. The Profit-Sharing amount paid is based on whether each area meets specific targets, and also common corporate targets, aligned with the company's strategic objectives. As well as its remuneration programs Cemig offers its employees a series of benefits, administered by itself, or by the pension fund, Forluz, or by the health insurance plan, Cemig Saúde:

- Benefits administered directly by Cemig: mid-month advance on salary; advance against end-of-year '13th-salary' mandatory bonus, in any month of the year, at the employee's request; advance against salary on return from vacation, repaid by installments; reimbursement of expenses for disabled employees and/or dependents; education assistance; funeral assistance; paternity leave if mother suffers illness; salary complement for employees on leave from work due to INSS health issues; five days' leave on civil marriage (rather than the legal requirement of three days); five days' leave to accompany ill relations; meal and food vouchers maintained for six months if off work – and in the case of work accidents, for 30 months; and day-care center support after termination of INSS leave until the child is seven years old, for: female employees; employees who are widowers with guardianship of children; a married male employee whose wife is ill; and a single divorced or legally separated parent who has guardianship of children.
- Benefits administered by Cemig's Pension Fund (Forluz): the Private Pension Plan.
- Benefits administered by Cemig Saúde: Cover for expenses on medical consultations, examinations and tests, outpatient attendance, hospitalization, surgery, obstetric care and dental treatment for employees and dependents. Cemig also has health plans administered by Cemig Saúde such as the diabetes care program, lectures for parents of adolescents, a course for people caring for the elderly, a program for giving up smoking, and the program for management of chronic diseases, focusing on high blood pressure, diabetes, obesity and cardiopathies.

The Retirement Preparation Program (PPA – Programa de Preparação para Aposentadoria) has been running since 1995. It comprises lectures preparing Cemig employees for retirement, especially when it is close. Subjects covered include health, psychology, finances, entrepreneurship, health plans, life insurance, and public and private savings/pension plans. The

related seminar was given four times in 2016, with 138 participants, for 2,760 training-hours. There is also a program of continuous preparation – the Forluz Para Viver Melhor Pension Plan Education Program, which deals with questions such as budget management, investments, overcoming of debt and how to live better within one's financial possibilities. The diagram below shows the data on employees who are currently qualified for retirement.

EMPLOYEES WHO WILL BE QUALIFIED FOR RETIREMENT (%)					
FROM 2016 TO 2020			FROM 2021 TO 2025		
LEADERSHIP POSITIONS	UNIVERSITY LEVEL	TECHNICAL- OPERATIONAL	LEADERSHIP POSITIONS	UNIVERSITY LEVEL	TECHNICAL- OPERATIONAL
1.04%	3.16%	13.44%	1.11%	3.61%	21.03%

In 2016, maternity leave was granted to 35 women, of whom 9 were still on leave on January 1, 2017; all the others returned to work following the conclusion of their leave. None of them left the Company. Figures 12 months after return from leave show a 100% retention rate. Among men, in 2016, 89 had the right to paternity leave. Of these only two left the Company. The residence rate was 97.7% after the 12 months following the paternity leave.

## DIVERSITY, EQUALITY OF OPPORTUNITY, AND HUMAN RIGHTS

HR3

One of Cemig's principal values is Ethics. So strong is this value for the company that in its *Statement of Ethical Principles and Code of Professional Conduct*, under Principle No 1 – 'Commitment to ethics and transparency', the document requires all readers to adopt criteria of ethics and integrity, good faith and transparency, in all their conduct.

LA13

Being a signatory of the United Nations Global Compact, which encourages practices to eliminate any kind of employment discrimination, Cemig has a Corporate Social Responsibility booklet disseminating practices specified in the Compact and in Social Accountability Standard 8000 (SA 8000), which encourages creation of good and dignified working conditions.

SDG5

SDG10

Concerned to meet employees' needs, Cemig offers guidance and support through its Employees with Disabilities Program. This reimburses 50% of certain expenses of employees who are physically handicapped, or of physically and/or mentally handicapped dependents. These expenses may be for tuition at special schools, a variety of therapy options (art therapy, music therapy, play therapy, hydrotherapy, equine therapy, swimming, physiotherapy, speech/hearing therapy), prostheses, disposable diapers, or other needs, subject to prior analysis by the Company's Medical Department.

In 2016 Cemig carried out a due diligence on human rights, and this did in fact identify real and potential negative impacts arising from the Company's activities, which it now aims to avoid and/or mitigate. Using a tailored methodology, stakeholders with the highest risks of violation of UN principles of human rights were identified, potential problems were brought to light, and action for mitigation and monitoring put in place.

Situations thought to involve discrimination can be reported through the Company's anonymous complaint hotline. In 2016 Cemig received 207 general reports, recorded by the anonymous Whistleblowers' Channel, and/or received by the Ethics Committee at its email, or by physical correspondence or telephone. All these were sent for investigation. After completion, the responses are made available to the reporting or complaining parties. Of this total, 26 reports presented information related to equality of opportunity or human rights. None of the complaints related to diversity. With the exception of the accusations that are still being investigated, and those found to have no basis in truth, in three cases Cemig adopted corrective measures to avoid recurrence of the same type of event.

A traditionally male working environment, Cemig has sought to hire and encourage women to join its staff in both technical and management positions. It offers equal opportunity and differentiated benefits, such as pre-natal, post-partum and newborn care in the first three months of life, and daycare assistance.

### The Women in Cemig Committee

This Women in Cemig Committee – CCM (Comitê Cemig Mulher)– was created in 2015 to take action to expand the presence and participation of women in corporate issues, promoting equality of opportunities, non-discrimination, inclusion and diversity; and to provide spaces for reflection about human relationships in the work environment with a view to apportioning the greatest possible value to all the Company's employees, and their personal growth.

In 2016 the CCM promoted actions evidencing the Company's commitment to continuous improvement in the process of people management, and the organizational atmosphere and culture. One of these actions was Cemig's voluntary adoption of the Program for Gender and Race Equality, in April 2016, seeking to disseminate new concepts in management of people and in the organization's culture for achieving equality between women and men in the world of work. This action is in line with Sustainable Development Goal 5 – "To achieve gender equality and empower all women and girls", set by the United Nations in 2015 at the Sustainable Development Summit.

To participate in the program Cemig built a sustainable Action Plan for promoting gender and race equality in the Company, with eight dimensions in two components:

**Management of people:**

1. Recruitment and selection;
2. Professional qualification and training;
3. Promotion and Job, Career, Salary and Remuneration Plan
4. Benefits policy;
5. Health and safety programs.

**Organizational culture:**

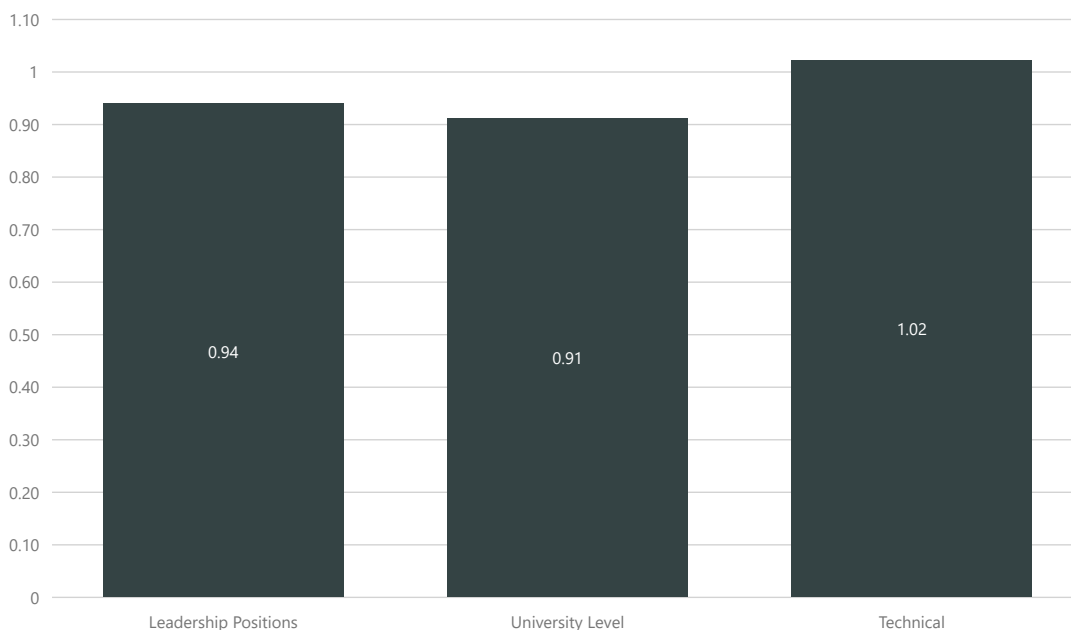
6. Mechanisms to combat inequality practices, gender and race discrimination, bullying and sexual harassment;
7. Professional qualification practice in the organization's relationships network;
8. External and internal institutional advertising.

This program covers execution and monitoring of the action plan for 24 months and is scheduled to deliver a final report in 2018. Another important initiative was the *Theater Workshop*, with employees, aiming to work on the human activities of relationship, trust, creativeness, inspiration, and both vertical and horizontal social/environmental adaption.

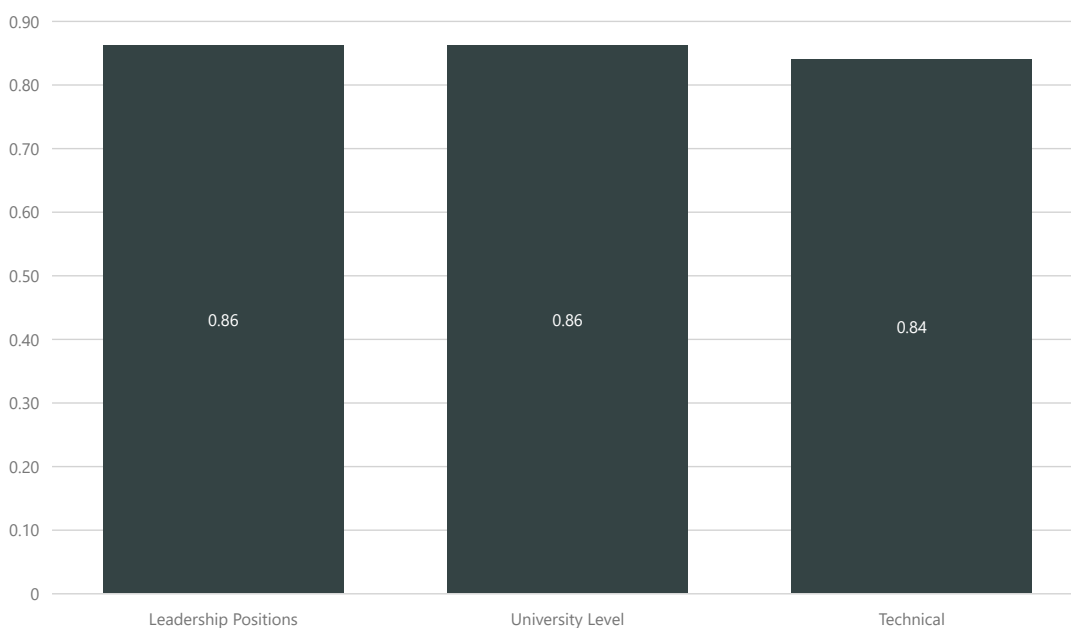
Another highlight was Cemig's participation in the Intersector Committee for Gender Equality. This was instituted by the Minas Gerais State Human Rights, Social Participation and Citizenship Management Unit (Sedpac) through its Policy for Women Sub-department (SPM-MG), and aims to help make public policies for women multi-sectorial.

Currently, the company's own structure is comprised of 13.19% of women occupying 11.48% of technical positions, 20.80% of university-level positions and 11.76% of leadership positions. Of the total women, 27.90% are black, mixed race or yellow. The ratio between women's and men's average salaries is close to one, which is a demonstration that the competencies and the strength of the workforce tends to be valued in a way that is evenly-based independent of gender or location.

Proportion of average base salaries women / men



Proportion Average remuneration of women / men



At the technical employee level, where there is the biggest difference between remuneration of women and men, this is partly due to the extra pay for hazardous work which, when added to the base salary, is a part of the final remuneration for people working in areas of risk. The higher quantity of men than women who operate in risk areas results in a difference of the average final remuneration between the genders.

In relation to the difference in remuneration level of employees who take leadership positions and are part of the university-level plan, Cemig has taken action to bring the ratio between women's and men's remuneration increasingly close to one.

## PERFORMANCE MANAGEMENT

has helped improve Cemig's performance, through alignment between employee's activities and the initiatives set out by the Company's Strategic Planning, also helping to promote collaborative dialogue and planning of employee's careers.

Cemig's 2016 People Development Program was created to put this process into effect. After the restructuring process, the practice of Performance Evaluation was resumed in 2016 – this is an opportunity for employees to develop so that both the Company and the employees improve their results and profitability.

Based on results delivered, and aligned with the Company's results, competencies were evaluated taking into account the set of key factors: focus on a sustainable result, commitment, human relations, communication, health and safety in the workplace, and teamwork.

At the time of the feedback conversation, there was planning of employees' careers, with building of development plans, taking into consideration practical actions and measurable results.

To monitor best market practices and adapt the Company for this process to work, it was essential to establish a methodology in a way that was coherent with the organizational strategy. For this, the Company reviewed its performance management with well-defined objectives: To assess the degree of contribution of each employee to achieving the pre-established results, with a view to alignment of delivered performance with the Company's strategic planning; to ensure the Company had knowledge about its employees and continuous feedback, aiming to ensure success and longevity for Cemig; and to achieve a methodology that ensures growth takes place in an ordered way and as planned, creating a culture powered by results and high performance.

In the result, 100% of the employees actively working were evaluated, and 490 people were trained in effective evaluation and management of the feedback process.

The work of feedback and discussion with employees following evaluation, for learning and development, is planned to begin in the second half of 2017.

## ORGANIZATIONAL LEARNING

LA9

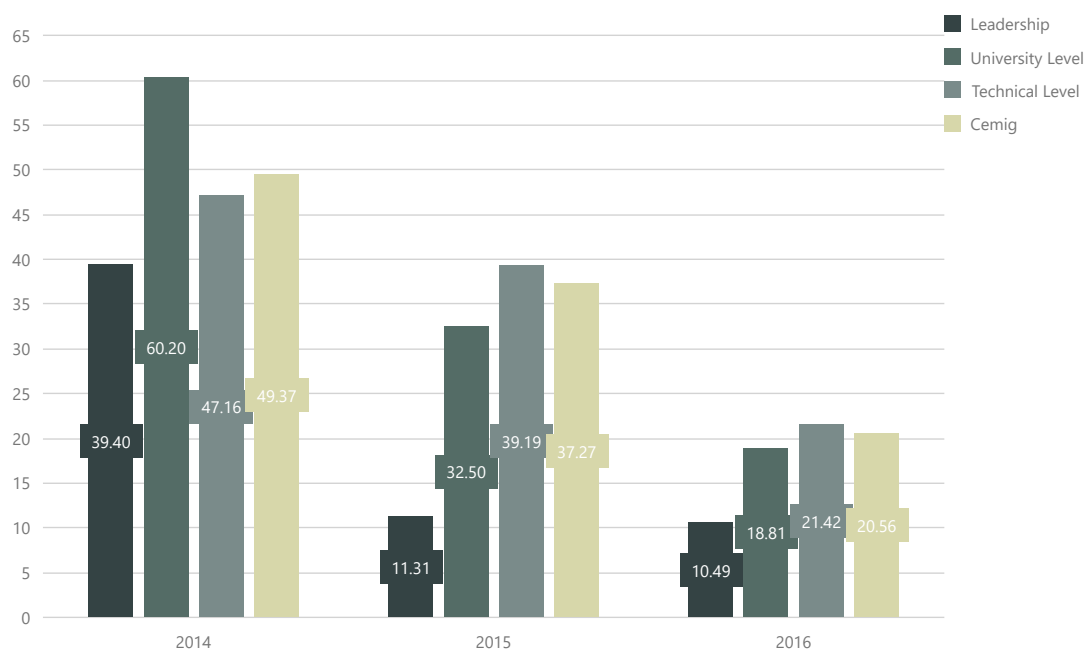
SDG4

Cemig's corporate university – UniverCemig – is a center that brings together and fosters continuous and proactive learning processes, to develop the whole of the Cemig value chain, and that of the electricity sector, with constant focus on achieving entrepreneurial results. Its campus is in the city of Sete Lagoas, where the in-person courses of the university are held. This campus has certification by a company accredited by Inmetro under three international standards: ISO 9001, ISO 14001, and OHSAS 18001.

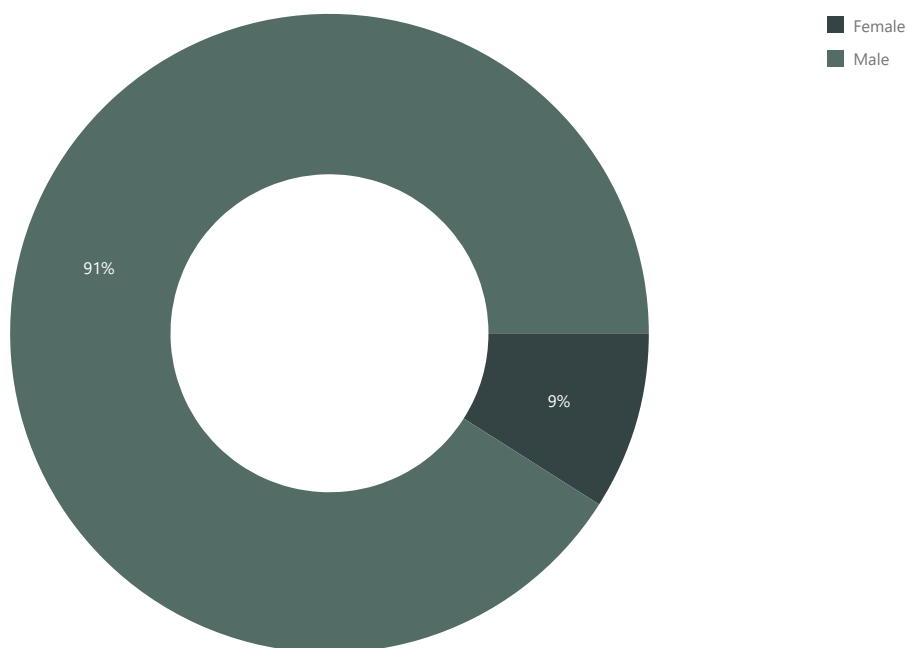
At the end of every year UniverCemig assesses the demand for training courses needed for the following year. This data is then used to program training and information for the Company's areas.

For the year 2016 with lower financial resources available, reflecting the macroeconomic situation and the crisis in the Brazilian electricity sector, a strategy was adopted of meeting the demands that are priority for the Company's business, such as courses on safety, which have a direct impact on operation efficiency, and those that fulfill legal requirements. This can be seen in the total number of hours' training per employee, which fell to 20.56 hours/employee in 2016. This was found to be the case for all categories of Cemig's employees, and both genders. On the other hand, the figures for participation in training of employees at other companies – the great majority of them providers of services to Cemig – was higher than in previous years.


Average hours' training, by employee level



Hours of training by gender



YEAR	CEMIG		OTHER COMPANIES(*)		TOTAL	
	Number of participation	Man-hour trained	Number of participation	Man-hour trained	Number of participation	Man-hour trained
2013	13,867	424,469	930	42,368	14,797	466,837
2014	23,707	391,170	2,438	61,982	26,145	453,152
2015	12,152	299,367	2,234	111,100	14,386	410,467
2016	6,276	146,338	2,867	90,009	9,143	236,347

In 2016 UniverCemig offered 6,276 participations and 146,338 man-hours of training to employees of Cemig's own staff. The total invested in training and development action was R\$ 23.7 million, or R\$ 3,333.00 on average for each of Cemig's own employees. This amount includes training experienced by employees outside UniverCemig. For the online courses a total of R\$ 37,840.88 was invested, for approximately 18,764 employees, including management, members of the audit board, outsourced workers and interns. As well as the number of hours of training, it is important to assess effectiveness. For this, Cemig uses the Course Quality Index 



Note: To arrive at the IQC an assessment is made of content, balanced between theory and practice, number of hours, teaching material, methods and techniques used, and applicability. For the IQI, the following are assessed: Technical ability, planning and organization, work safety and enthusiasm for the work. These indicators come from the assessment of the reaction to the training by the clients participating in the courses.

- IQC

(Índice de Qualidade do Curso), and the Instructor Quality Index – IQI (Índice de Qualidade do Instrutor): together they give the Training Efficiency, which came out at 93.32%, exceeding the 75% target set for 2016.

### Outstanding training in 2016:

- UniverCemig makes external technical cooperation programs, such as the working agreement with UNIFEMM – the University Center of Sete Lagoas, which gives 5% of its electrical engineering course places to employees of Cemig, with full-cost grant of the monthly fees. This agreement also aims to develop trained manpower for electric power systems, able to take over responsibilities in any company in the electricity sector as well as those that provide services to Cemig. In 2016 Cemig had 35 employees studying free of charge from the first to the tenth level, an annual benefit worth approximately R\$ 535,000.
- Another highlight was the course given outside Brazil by UniverCemig – Initial Training in Live Wire Working at Medium Voltage: 13.8kV to 34.5kV – with a total class time of 240 hours, for 10 employees of Compañía Eléctrica Sucre SA, in the city of Sucre in Bolivia. This training generated revenue for Cemig of US\$27,817.10, as well as providing an exchange of experiences between the professionals involved, more knowledge of the Cemig brand outside Brazil, and the possibility of new business transactions – this is the second course given by UniverCemig in Bolivia.
- Training of 84 employees of outsourced companies in dealing with programmed handling and events at equipment in substations – a total number of 1,344 training man hours were given. This training prepares electricians to make inspections and other operations under the coordination of the Distribution Operations Center in substations that do not have operators, in a way that is safe for the employee, third parties and the system's equipment – able to considerably reduce time of supply outages for clients.
- Considering its value chain, and aiming to improve quality, productivity and the safety culture of work at the companies supplying services of operation and maintenance to distribution networks, UniverCemig developed a training matrix for outsourced companies, including the principal trainings and requirements demanded by the Company. The total number of these qualification training sessions totaled 2,865 participations, with 89,969 training man-hours, and revenue of more than R\$ 1.5 million for Cemig. With the widespread adoption of the Training Matrix the number of accidents with outsourced workers is expected to be reduced. Also expected are: Higher service provision quality; improvement in the safety indices of the outsourced workers; safety for the electricity system, Cemig's facilities, and those owned by other companies and outsourced operators; electricity supply quality, continuity and reliability; and improvement in the SAIDI and SAIFI supply quality indicators and the Client Satisfaction Index – IASC (Índice de Satisfação dos Clientes).

Highlights of training of outsourced workers in health and safety subjects:

TRAINING FOR OUTSOURCED PERSONNEL			
Description	Number of participations		Man/hour trained
Defensive driving light / large vehicles	189		5,332
Defensive driving light vehicles/trucks	266		5,320
Use of chainsaws and pruning equipment	195		4,680
Crane trailer and mounted crane operation	229		3,664
Aerial basket operation - light / medium vehicle	117		1,904
Courses related to the rule NR10	47		1,880
Vehicle crane operation for electrician	51		1,504
Training of inspection agents in ND-4.6X	141		1,092
Pilotage in adverse conditions - 4x4 vehicle	35		676
Courses related to the rules IO-DDC-0001 (IDDC)	39		624

## LABOR AND UNION PRACTICES

GC4-11

LA4

LA8

GC3

Through its public adherence to the Global Compact, and also internally through its Human Resources Policy, Cemig recognizes unions as legitimate representatives of employees, and respects employees' union affiliation choices. It also passes on to these entities the amounts discounted from payroll of the employees who are union members. In its Organizational Instruction (IO) 07 – "Management of the Statement of Ethical Principles", Cemig underlines its commitment to defending freedom of association and real recognition of the right to collective bargaining.

The Company has set up a specific department to deal with labor union relations, and maintains constant contact with these entities, seeking always to use all means that are acceptable from a business point of view to achieve negotiated solutions in an ethical and respectful fashion.

At present, 100% of the employees are covered by collective bargaining agreements, and 4,395 employees are affiliated to unions.

Every year, Cemig takes part in collective negotiations with the representatives of the employees to establish the collective work agreements, aiming to contribute to a good organizational climate, achievement of strategic objectives in negotiation of the collective work agreements and specific work agreements for participation in profit sharing (PLR), using the guidelines set by the Board of Directors as a reference.

Cemig's collective agreements are negotiated and entered into by a single agreement with unions of each of the various categories, such as engineers, secretaries, industrial technicians, managers, lawyers, and others, and with the union of electricity workers, who represent the employees of the administrative-operational technical staff. As a result 100% of the employees are covered by collective agreements and have all the agreed prerogatives guaranteed.

The Collective Agreement (Acordo Coletivo de Trabalho, or ACT) has nine clauses dealing with occupational health and safety, including: The commitment to make studies seeking solutions for collective protection, and reaffirmation that protection should include the use of IPE and CPE, inspection of outsourced companies for workplace safety, issuance of healthy working conditions certificate, access for union directors in meetings of the Internal Accident Prevention Committees (CIPAs) and sending of copies of meeting minutes to the unions; provision of information on frequency and type of illnesses and accidents, notification and convocation of unions in the event of serious or fatal accidents so they can monitor the investigation of causes, and payment of additional wage levels for hazardous and harder work.

Where there are significant changes, Cemig aims to ensure discussions with employees, through their union representatives, and can sign collective agreements – such as the Cemig Saúde Technical Adjustment Special Collective Agreement, which included the results of negotiations on the technical adjustment of the health plan, the sponsor's contributions, the contributions table for special dependents, the minimum and maximum amounts of contribution, and the limits for co-participation. In the 2016-17 Collective Work Agreement, the sole sub-paragraph of Clause 34 specifies disclosure to employees and their representatives of any introduction of new technologies and/or procedures for automation or centralization of activities, to seek solutions and suggestions.

## OCCUPATIONAL SAFETY, HEALTH AND WELL-BEING (OSHW)

DMA

EU16

LA5

SDG3

Since 2007 Cemig's Occupational Health and Safety policy, aligned with principle No. 3 of its statement of Ethical Principles and Code of Professional Conduct, has presented one of the objectives of the company's strategic corporate map, which is to establish Safety as a value in the corporate culture. This strategic objective is monitored by the company's Accident Frequency Rate (Taxa de Frequência de Acidentes, or TFA). The policy, which is intensely publicized, establishes the high importance of the subject for the Company's business and for adequate protection of the whole of its workforce, whether its own employees, contracted individuals or outsourced companies. Performance in health and safety directly affects the




organizational climate, and can also have an effect on the Company's brand and reputation, and/or cause the Company to be faced with employment-law or other legal contingencies.

The following are principles of policy of the Company: identification, evaluation and control of risks to occupational health, hygiene and safety; a proactive approach at all times in actions for prevention; compliance with legislation and internal rules; the worker's right to refuse to expose himself to unsafe situations; and his accountability – whatever his/her hierarchical level – for any omission in the commitment to promote Occupational Health and Safety.


As a consequence of this policy, since 2009 Cemig has had on its intranet a Technical Manual of Health and Safety in the Workplace, which contains a series of internal instructions with which compliance is mandatory. The Company holds periodic audits and establishes criteria and procedures for accountability and penalties for non-compliance with the policy, rules, instructions, procedures or orientations. Cemig has further information and campaigns on its site, to incentivate practices that can continually reduce the number of accidents and illnesses, not only to the Company's employees but also to third parties, and for safe use of electricity by clients.

Based on OHSAS standard 18001, Cemig's Health and Safety Management System focuses on prevention of diseases, and work injuries. This certification covers all the processes related to generation and transmission, and part of the processes of electricity distribution. Both Univercemig and Cemig's Property and Industrial Safety Management are also certified in this system. Whether or not an area is certified, an internal procedure, the *Hira-Cemig Model*, requires that the principal health and safety risks, including psycho-social risks, should be identified and assessed, and that controls able to mitigate them to acceptable levels should be established.

This table shows the coverage of the Workplace Health and Safety controls in Cemig:

ACTIVITY	OHSAS 18001	HIRA-CEMIG MODEL
Generation 		
Note: As % of total MW generated in the large plants	99%	1%
Transmission 		
Note: As % of total length of Cemig GT's transmission lines	100%	0%
Distribution 		
Note: As % of all consumers	5%	95%

The Hira-Cemig Model has been adopted since 2015 as a more precise control in risk management, and Cemig also has other tools that help in this process. Examples are:

- **Risk analysis**, carried out prior to each operational activity. The specific aspects of each situation are taken into account, including workers' physical and mental condition in the period before they start the activity.
  - **The Monitoring and Auditing System for Analysis of Safety Practices (SIMASP)**, which standardizes and streamlines work safety inspections and provides data for the Safety Practice Indicator (ISP) – a measure of compliance with occupational safety and health requirements 
- Note: Data on sub-contractors are managed by the contracting departments. and procedures in the work of the company's own staff and sub-contractors.
- **The Job Risk and Accident Monitoring System (SMART)**, which is run each month for accident management, generating statistical reports based on the registration of accidents, broken down by type.
  - **The Environmental Risk Prevention Program (PPRA)**, required by law: this is executed annually at each company facility, and consists of anticipating, recognizing, evaluating and controlling physical, chemical and biological risks, serving as one of the sources for drawing up Hira-Cemig risk profiles.

- **The Interlude for Safety** – a forum held monthly for presenting and discussing issues relating to workplace health and safety, and sometimes used for alignment with policy and dissemination of information.
- **Internal Accident Prevention Committees - CIPAs (Comissões Internas de Prevenção de Acidentes):** These are made up of representatives of the employees and the employer, and operate autonomously and independently, working to prevent accidents and occupational diseases. Before each year of office, all members of all committees receive training, the program content of which is defined by law, through UniverCemig. The Company has 73 CIPAs, which cover 100% of the employees.

Other tools for monitoring employee health and well-being include medical tests, periodic and special medical inventories, psychological evaluations and social inventories, managed of health report letters, psychological assessments, and social inventories, conducted locally at the employees' place of work. There are also campaigns and incentives for early detection of heart disease, diabetes, dyslipidemia, breast cancer, prostate cancer, cancer of the intestine and flu vaccination. The Company also has OHSAS 18001 certification.

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

STRATEGIC OBJECTIVE	PROGRAMS	POSITION
Establish safety as a value in the corporate culture	Professional Rehabilitation Program	This provides redirection for employees whose working capacity has been reduced by accident or illness, and usually means a change of function. The program is a joint effort of Cemig's medical, psychological, social and workplace safety departments, and has been homologated by the INSS national social security service. The program is currently being restructured.
	Personal and Family Budget Planning Program	This aims to raise employees' awareness on the importance of balancing one's finances, through lectures, social service and loans.
Promote a motivating work environment	Social intervention	This service aims to provide orientation on health treatment and cover its expenses for employees who have suffered work accidents and those retired due to incapacity arising from work accident or work-related illness.
	Holiday period attendance	Continuous availability on weekends and public holidays, to provide social service to employees who have suffered work accidents, and family members of any employees that have suffered fatal accidents, whether work-related or not.

In light of technological developments in the electricity sector, with a consequent need for review of working methods, the Company maintains internal committees that address technical matters directly or indirectly related to WHS issues, in addition to actively participating in a variety of working groups at the national level, as well as on ABNT (Brazilian Technical Standards Association) commissions and study groups.

The Integrated Work Accidents Risk Protection Group was established in November 2015 with members from various hierarchy levels, from director level to technical-level staff. In 2016 it held more than 30 meetings, on more than 40 varied subjects, to design and build a Workplace Health and Safety strategy able to take the action necessary to achieve the established Zero Target for serious and fatal accidents and those causing more than 15 days' time off work.

One of the steps taken was Cemig's adherence to the Ibero-American Work Safety and Health League, and the non-profit technical cooperation working agreement signed with the Ibero-American Social Security Organization (OISS), to implement and monitor preventative actions in Work Health and Safety.

In December 2015 representatives of the OISS visited Cemig to get to know the facilities and the processes of the company, to prepare a Work Plan. As a result of this visit they prepared an Integrated Work Risks and Accidents Plan containing 18 actions and presented it to the members of the Accident Risk Prevention Work group, with five main parts:

1. Commitment from Senior Management of Cemig to lead the strengthening of a Prevention Culture in the company.

2. Alignment of Cemig's internal occupational health and safety work rules.
3. Enhancement of employees' preventive technical knowledge in occupational health and safety at their workplaces.
4. Enhancement of employees' qualifications in Occupational Health and Safety Management, at UniverCemig.
5. Establishment of a system of homologation and requirements for the outsourced companies serving Cemig in work health and safety related matters.

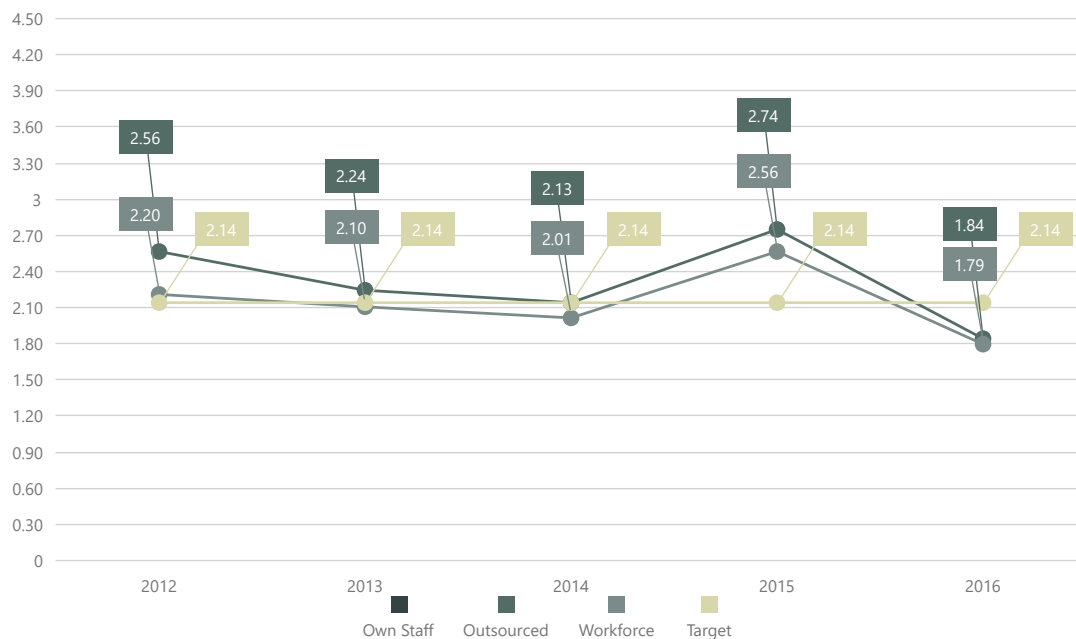
LA6

## Results of Indicators:

In 2016, Cemig's indicator of Frequency of Accidents with Time off Work (*Taxa de Frequência de Acidentes com Afastamento*, or TFA) for the workforce was 1.79 accidents per million hours worked, 30% less than in 2015, and 16.36% lower than the limit of 2.14. The result is a milestone, as it was the lowest annual value ever achieved for TFA since the beginning of its assessment 21 years ago. Compared to 2015, the TFA figures in 2016 were 16.66% lower for payroll staff, and 32.85% lower for outsourced contractor personnel.

There was also a reduction in rates obtained for own employees by 17.16% and for contracted by 32.85% in relation to the previous year. The number of employees injured in the work with remoteness, which is used to calculate the TFA, reduced by 7.14% for own employees and 50.94% for contractors, with this, the workforce data fell by 41, 79%.

Accident frequency rate



Cemig has a software system recording all accidents occurring on the Company's premises involving its own staff, subcontractors or subcontracting firms, and the accidents involving the public in its concession area.

The system monitors the Frequency and Severity Rates of accidents, adopting the guidelines referenced in Brazilian Technical Standard (ABNT) NBR 14280.

TYPE OF ACCIDENT	CATEGORY	2012	2013	2014	2015	2016
WORK ACCIDENTS WITHOUT LOST TIME	Employees	47	38	36	39	24
	Outsourced	194	159	119	175	122
	Total	241	197	155	214	146
WORK ACCIDENTS WITH LOST TIME	Employees	16	23	24	28	25
	Outsourced	169	90	75	106	52
	Total	185	113	99	134	78
OCCUPATIONAL ILLNESSES	Employees	1	0	0	3	0
	Outsourced	NA	NA	NA	0	0
	Total	NA	NA	NA	3	0
DAYS LOST	Employees	639	411	886	398	378
	Outsourced	1,627	2,427	1,937	2,387	1.596
	Total	2,266	2,838	2,823	2,785	1.974
ABSENTEE RATE	Employees	1.50	1.26	1.05	1.23	0.90
	Outsourced	NA	NA	NA	NA	NA
	Total	NA	NA	NA	NA	NA
WORK-RELATED FATALITIES	Employees	0	1	0	0	1
	Contratados	2	3	2	5	1
	Total	2	4	2	5	2

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The two deaths in 2016 were:

- A traffic accident involving one of the Company's own employees;
- An accident in which an employee of an outsourced contractor fell from a height.

As well as the external campaign an internal campaign publicized the principles, to reach the entire workforce through internal media and actions involving the CIPAs (Accident Prevention Committees).

## SUPPLIERS

## SUPPLY CHAIN MANAGEMENT DMA

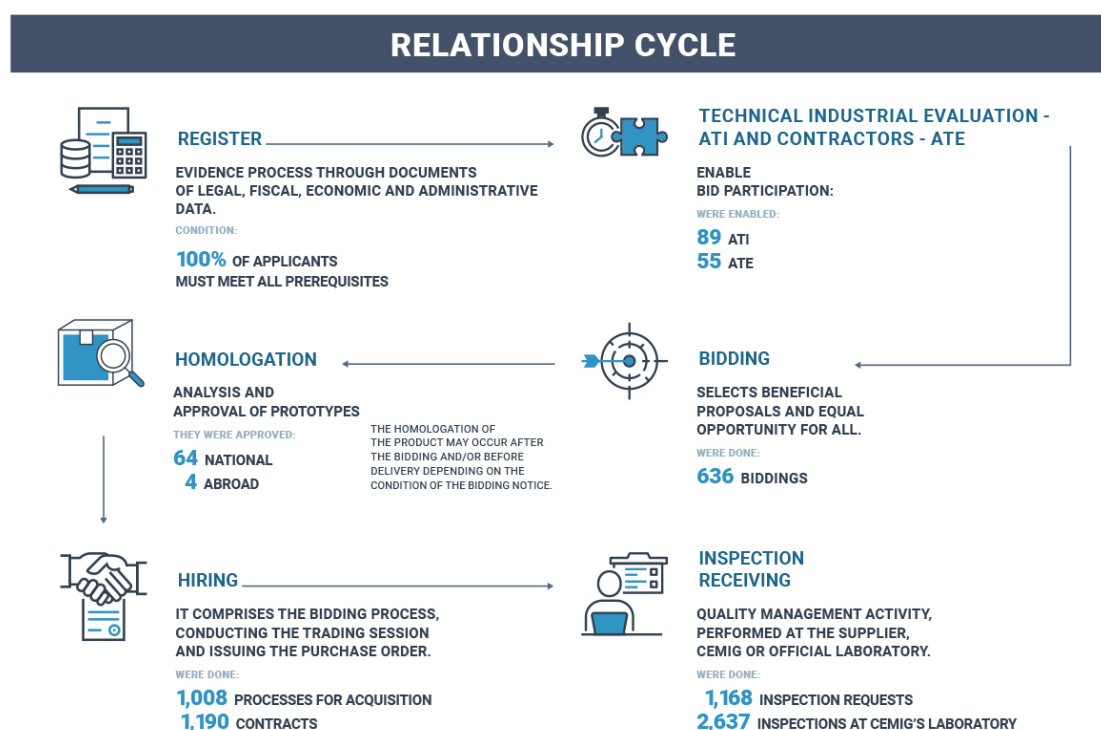
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Three main documents – Cemig's Supply Policy; its Statement of Ethical Principles and Code of Professional Conduct; and its Anti-fraud Policy – orient Cemig's relations with the supply chain, supported by the Supplier Relations Manual, which is permanently available on Cemig's Suppliers' website.

Based on these policies, principles and guidelines, five priority commitments have been defined as a strategy for managing the supply chain: (1) commitment to the public good, and respect for the principles of legality; (2) commitment to business ethics; (3) commitment to equality of treatment; (4) commitment to transparency; and (5) commitment to social and environmental responsibility. These pledges are in keeping with the [Principles of the UN's Global Compact](#), of which Cemig is a signatory.

For the Company to generate value, uphold its image and minimize the risk of associating with companies that do not comply with employment, environmental or tax legislation, Cemig manages its suppliers rigorously. To achieve fair prices while meeting its technical and commercial requirements for products and services, the Company incentivizes competitiveness in its tender bid processes, and also checks the economic and financial sustainability of its suppliers, minimizing risks of interruption of supply and after-sale guarantee problems.

The supplier relationship begins with a detailed registration process, in which 100% of candidates must satisfy legal, technical, financial, social, environmental and health and safety criteria to participate in tenders. The Company does not record how many companies are not accepted. The relationship cycle can be shown as follows:



Cemig's principal action in relation to its supply chain is preventive, but there are mechanisms for mitigation (general supply clauses, and provisions for fines and cancellation of contract), and also mediation (e.g. follow-up on termination of employees of sub-contracted companies).

A further procedure has recently been formalized: an assessment of risks to sustainability in the supply chain, in all purchasing processes in progress at Cemig and its subsidiaries. This assessment examines any economic, environmental and social responsibility risks to which the company is exposed due to the actions of its suppliers. These risks could cause damage to Cemig's brand, image or reputation in the eyes of the numerous stakeholders, or losses relating to the market and the Company's competitiveness, with the possibility even of criminal or civil liability being argued against the Company. The Company also seeks to use management of the supply chain as an opportunity to improve its financial performance over the long term.

In line with these concepts, the company has identified which of its suppliers have high sustainability risk, considering the potential negative impacts that could result from serious non-compliances on their part. This identification is updated

annually, prompting follow-up and oversight of suppliers from the registration stage through to technical evaluation and oversight of contract execution.

Cemig has 81,354 suppliers registered: Of these, 64,800 (79.65%) are in Minas Gerais, 15,690 (19.29%) are in other states, and 864 (1.06%) are international. In 2016 Cemig registered 1,769 new suppliers, of which 1,228 (69.42%) were from Minas Gerais, 502 (28.38%) from other states and 39 (2.20%) international. The proportion of outlays with local suppliers in 2016 was 32.58% for materials acquisitions, and 29.15% for services, so that overall 29.84% of expenditure goes to Minas Gerais suppliers.

In 2016, analysis of the 636 suppliers with contracts in force concluded that 84 should be defined as of high sustainability risk (including the contractors that provided services on 'P.A.R.T.' works and are receiving special attention from the areas that contracted them).

For already approved suppliers, there are extensive requirements and diligence involved in this mapping potential risks and probability of occurrence, and tangible and intangible impacts in terms of financial value which can be of strategic importance to the Company. This analysis is conducted to measure risks and losses that could result from failures, in the supply chain, to uphold environmental, social and governance legislation and requirements.

Among factors considered as having the potential to generate negative impacts are: environmental operating licenses, products and services, waste management, water use permits, fundamental human rights considerations, child labor and forced labor, freedom of association, working conditions, occupational health and safety conditions, business ethics, corruption and anti-trust practices.

To prevent and mitigate risk, the Company adopts risk management measures that, primarily, include transparency in all [bidding processes](#). In addition, Cemig encourages improvement in the management of its service providers through a contractual clause requiring amortization of any penalty payments by as much as 50%, if compliance is proven with requirements such as: ISO 9001, ISO 14001 and OHSAS 18001 certifications; proof of training of technical staff; and having service managers enrolled in or graduated from corporate management courses.

For suppliers with low performance grades or showing negative or potentially negative conduct in assessments, inspections or audits, penalties may be imposed in the form of penalty payments, warnings, meetings, cancellation of orders or contracts, revocation of approvals or internal proceedings for suspension of registration – depending on the seriousness and/or recurrence of the circumstances in question.

In 2016, Cemig initiated 31 administrative proceedings: 19 were for breach of contract (failure to meet deadlines, non-delivery of items, irregular service); four for serious accidents; and eight for suspicion of falsification of documents and fraud. No proceedings relating to environmental impacts or human rights were opened.

Because its controlling stockholder is in the public sector, and it is thus subject to the Law on Public Competitions (Law 8666/1993), Cemig does not engage in direct contracting of suppliers, nor does it preferentially hire local suppliers. There are, however, a large number of registries of local suppliers on the portal.

One of the requirements for registry of new suppliers, or renewal of registry, is an obligatory statement that the supplier does not employ anyone under age 18 in nocturnal, dangerous or unhealthy work, nor anyone under 16 in any work, as required by Law 8666/93

Other legal requirements are obligatory in tenders and bids, such as no use of child labor, or other degrading or forced labor, and the clauses protecting human rights. These can be used as exclusion criteria. The Company's contracts and tenders also contain clauses related to compliance with the 'Anti-corruption law', Law 12846, of August 1, 2013.

The areas responsible for contracting check all these requirements during execution of contracts, to see whether the conditions laid down in the call for bids and the contract are being maintained, in all the supply chains. There are also audits



held internally or carried out by outside firms on ISO 9001, ISO 14001, and OHSAS 18001, accompanied and monitored by managers of contracts. Finally, payment for services rendered is contingent on submission of documents proving payment of the employment-law-related charges on payroll, and of the employees' salaries themselves – so that contractual penalties can be applied if a supplier is not meeting its social obligations.



To measure the performance of suppliers or contractors, Cemig uses the Contracted Services Quality Index – IQSC (Índice de Qualidade dos Serviços Contratados), in which its score was 65.46% in 2016 – this was lower than the target that had been set, due to (a) the effects of the macroeconomic stress on contractors, and (b) work safety indices, as reported in the chapter Health and Safety.

The IQSC is a combination of indices for quality, safety, waste management, and environment, and is used to provide a balanced and weighted reflection of the performance of the companies contracted. Since 2014, as existing contracts expire, they have been replaced by Performance Results (PR) Contracts.

In addition to the indices that make up the IQSC, the parameter Deadline was included in the Performance Result ('RP') calculation. It is most significant in improvement of client satisfaction.

To sustain their RP score, contracted companies are evaluated monthly according to criteria for Evaluation, Inspection and Receipt of Contracted Distribution Services, to ascertain the quality of the services according to contractual requirements related to Safety, Quality, Deadlines and Environment, in accordance with the weights and targets established for the period of validity of the contract. A progressive increase in the target is also established in the first four years of the contract.

The table below presents the targets for the year 2021.

CATEGORY	INDICATOR	TARGET, 2021
Safety	TFTC 	
	Note: Outsourced supplier accident frequency rate	2.5
	TG  Note:Severity indicator	230
	Other safety indicators	94%
Quality	Quality indicators	96%
Deadline	Deadline indicators	89%
Environment	Waste management quality index	98%

To ensure supplier oversight, Cemig maintains its practice of daily inspections of contractors: there were 9,697 safety inspections to analyze Safety Practices, which can be expressed as a total of 160,776 inspection man-hours. Service quality inspections, which are also routine procedures, to assess the quality of services and waste management, totaled 46,964 procedures – summing emergency and commercial services.

For assessment of the performance of suppliers of material, the Suppliers' Performance Index – IDF (Índice de Desempenho de Fornecedores), which was put in place in 2007, is used. It comprises the following parameters: price; supply; client registry; quality; and guarantee/service. Each of these parameters has sub-criteria. These are: price – level and history; supply – compliance with deadlines and quantities, delivery rules for packaging, and tax invoices; client registry – up to date, and penalties; quality – inspection on receipt, and Technical-Industrial Evaluation - ATI(Avaliação Técnica Industrial); services/guarantee – return times on activation, retention times and material receipt times, recurrence of problems, and documentation errors. The indicator has an annual target of 80%, and was 81.52% in 2016.

## COMMUNICATION CHANNELS WITH SUPPLIERS

Cemig has created a Procurement Website for supplier engagement. It is an open, direct-interaction channel that gives access to all procedures for tender processes, and announces contracts made – enabling suppliers to interact and follow up

on processes and results. It also enables suppliers to post proposals and bids, register authorizing documentation and take part in electronic auctions.

The site is accessible to the public and allows stakeholders in general to follow these processes, contributing to greater transparency and authenticity. As well as these means of communication there is also, in the footnote of each message sent by the supply areas, a link with an email address for complaints, messages of praise, etc.

E-mails of complaints and suggestions are another a standard communications channel in all management units engaged with suppliers.

Cemig has now restructured and standardized this system for e-mail communication – for improved visibility, and to encourage use by other stakeholders. The most frequent requests have been for explanations and information about tenders and contracts. The complete inventory of ways suppliers can make contact and interact to address specific questions could be summed up as: phone, e-mail, publications in the Official Gazette (Diário Oficial), exchanges on the Procurement Portal - [PEC](#) (Portal Eletrônico de Compras) during online auctions, fax, correspondence, and meetings and visits.

All requests for information received through any of the channels are analyzed and forwarded for appropriate treatment. In 2016 there were five complaints by suppliers. One was dealt with through a report on non-compliance, and four answered and dealt with by email to the supplier.

### The Cemig suppliers' award – the 2016 ranking

As a way of encouraging quality in the provision of goods and services, and of recognizing the harmony between suppliers and the Company in reaching common objectives, a number of suppliers of materials and services were honored at the Cemig Suppliers Awards event, held in October 2016.

In 2016, a universe of 356 suppliers received purchase orders or contracts from Cemig. Of these, the awards singled out 70 for recognition of performance based on criteria such as quality, safety, guarantees and price. Of this total, 39 achieved the grade of excellence in 'Assured Provision of Material.' As well as trophies, they were awarded certificates exempting their deliveries from prior inspection of goods by Cemig for a period of one year.

Three suppliers were recognized for the significant contribution to society of their practices in Social and Environmental Responsibility, and Job Safety. The recognition for job safety is a feature introduced to these awards in 2013.

## COMMUNITY

### RELATIONSHIP WITH THE COMMUNITY

S01

Cemig's strategic positioning in relation to the local communities in which it operates is expressed in the Cemig Policy for Communication with the Community. This document deals with social, environmental and economic aspects to be implemented in all the Company's projects, and in which communication and social commitment are the bridge to guarantee of human rights, sustainability and entrepreneurial social responsibility. The document reiterates Cemig's commitment to the transparency of its management, the sense of co-responsibility and the stimulus for local economic and social development, giving a public expression to the assumptions and fundamentals that orient the Company's decisions on strategies and practices of communication.

Some tools used to practice these principles include seminars, face-to-face involvement, workshops, inaugurations, book launches, participation in decision and discussion forums, and in-person meetings in communities.

One of the highlights was the Urban Arborization Circuits held in the cities of São João Evangelista and Três Marias. This project, held annually in various regions of the state, as per a mapping carried out by the technical staff, aims to present and open opportunities of dialog on good tree practices and enhancement of the work of the professionals involved in urban planning, electricity distribution and arborization.

In this year's events 140 people took part – including Cemig professionals, representatives of municipal prefectures, university students, NGOs and public bodies connected to environmental management of the municipalities involved.

Another program that was continued in 2016 was the service to communities affected by the Irapé hydroelectric plant. This involvement is part of the conditions for the license that was given. The service given to the 632 families involved is on the 'on-site listening' model – to capture the demands presented by those who have been resettled, and maintain the engagement with that community. In 2016 priority was given to monthly face-to-face meetings with the homes of the people resettled, to check that the works built by Cemig were going ahead and working well, and to deliver consent forms and collect signatures for the grant/transfer of the use of water resources of the water supply system of the related farm properties. So far, Cemig has handed 536 titles of property to the resettlers.

To commemorate the ten-year anniversary of construction of the project the population of the host town of the plant, Grão Mogol, received the project 'A night of cinema', sponsored by Cemig via the Rouanet Law. This is a traveling open air cinema show which reported, through culture and entertainment, on these ten years of the Company and the town's residents living side by side.

Another highlight was the inauguration of the project for signposting in the Estrada Real do Sumidouro in Sumidouro State Park, at Lagoa Santa, in a partnership with Cemig, the park, the Caves Association, and other institutions. The project will benefit the residents of the counties/municipalities of Jaboticatubas, Pedro Leopoldo, Lagoa Santa and Matozinhos, as well as the thousands of tourists that visit the park annually.

The area to be signposted includes the park and also a group of state conservation units, promoting not only traffic education but awareness of the value of the elements of nature and culture of the region.

To comply with a condition for renewal of the Operational License of the Aimorés-Mascarenhas 230kV Transmission Line, which connects the county of Aimorés in Minas Gerais State to Baixo Guandu in Espírito Santo, it was necessary to carry out a local diagnostic process to identify the highest-priority stakeholders for the work of raising consciousness on safety and on living with a transmission line.

Face-to-face meeting was the tool chosen to carry out the field analysis, in which routines for planting and various types of crop, as the principal economic activity of the region, were identified. Partnerships and communications media that were more effective in accordance with the conditions of the region were also decided.

Based on the diagnosis obtained in the work of listening and dialog, awareness campaigns were held in the main schools, involving some 220 pupils and teachers, with distribution of teaching and technical material on subjects such as the importance of preventing crop-burning, avoiding invasion of the power line pathways, and safety in the electricity network – and also information on the channels of dialog that the community makes available to present its questions to the Company.

## TERRITORY MANAGEMENT

To build substations, power plants and repeater stations, Cemig sometimes has to acquire the property of residents in communities where the company is establishing a project, or rights of way to implement distribution and transmission lines, or distribution networks. To guide this process, there is Aneel Normative Resolution 560 of July 2, 2013, providing orientation

on areas declared to be of public utility for the purposes of expropriation and establishment of rights of way needed for installation of electricity generation, transmission and distribution facilities.

Feasibility studies carried out by specific internal teams identify people who will be affected by projects. These studies ascertain whether the options for routes will affect preservation areas, legal-reserve areas, or sites being or to be divided for new housing; whether recent improvements will need to be eliminated; whether owners accept the proposed project; and amounts of compensation to be paid. The best route is chosen after analysis of these studies.

In 2016, 969 negotiations were held with proprietors for implementation of 161 Cemig projects. Of these, eight were acquisitions for building of substations, for a total of R\$ 1.61 million; 244 were contracts for easements to set up distribution networks, in the amount of R\$ 1.275 million; and 717 were easements for distribution lines, for a total of R\$ 6.660 million – a total amount of approximately R\$ 9 million.

No significant negative impacts were found in the process of expropriation for construction of the Company's substations, and no resettlements of families were necessary in 2016.

Cemig respects the individual integrity of each citizen, and the history and culture of the communities affected by projects, and also values amicable negotiations – seeking to compensate property owners in affected areas with the fair market price, based on appraisals drawn up in accordance with Brazilian Technical Standard NBR 14.653.



In 2016 Cemig held its 17th ceremony event for delivery of land titles. This one was in the municipality of Matheus Leme, Minas Gerais, regularizing the lands of the Contendas Farm property.

### Socio-environmental programs of Guanhães Energia S.A.

For the social issues inherent to construction of the four Small Hydroelectric Plants of Guanhães Energia S.A., a series of programs have been developed: Community Communication, Environmental Education, Social Assistance Plan, and the Productive Restructuring Program.

The dealings with the communities local to the project all take place in different ways, according to the target public and the interests of each sector of society. Leaders of the municipal and community bodies are continuously visited, to maintain an open dialog with the people, who are the local interlocutors and opinion formers.

This work is carried out by teams specialized in environmental education and social communication, and by the team of the Social Service Post - PAS (Posto de Atendimento Social), which has a social assistant and a psychologist on staff.

Socio-environmental programs and campaigns are held for the general public, organized jointly with the municipal social services bodies.

Those who are directly affected by the project receive periodic visits from the PAS team, to monitor the situation, get to know of any needs, both of the relocated families and also those who have remained, but whose properties have been in any way affected.

Further, periodic meetings are held in the areas directly affected by the project, to listen and discuss common problems with the communities. Crafts workshops are held in these meetings, and help to forge closer links between the members of the

community; they can also help provide extra income for the families involved, with sale of the work produced.

The information bulletins produced every two months and distributed to the population of the Directly Affected Area (DAA) also function as channels of communication. These bulletins provide information about the progress of works, offer reports on health and environmental education, and any significant news in the period.

To accompany the local socioeconomic changes, interviews are held quarterly with proprietors, residents of each section of the DAA, resettled families, and municipal authorities, using pre-structured questionnaires. These questionnaires aim to transmit to Cemig the view that the affected communities have of the project, and what changes the project has brought to the family and the home, and the way in which the population in general lives.

Surveys are also carried out with the various sectors of the municipal administration, to gather information on how the project is affecting and/or interfering with the public services of the municipality (such as health, education, housing, tax collection and garbage collection).

Four socioeconomic monitoring campaigns were carried out in 2016 in the region where the projects are being put in place.

The Land and Improvements Negotiation Program has followed the stages specified in the Environmental Control Plan approved by the State's Environmental and Sustainable Development Department, and the State's Social Welfare Council, and involve both individual and collective negotiations. Meetings were scheduled with proprietors, ensuring that the whole population affected was served, to minimize the social impacts caused on residential properties and the operations carried out on each individual one affected. The negotiations were accompanied by the team of the Social Welfare Post (PAS).

For more information [click here](#).

## CORPORATE CITIZENSHIP AND PHILANTHROPY

SDG1

In line with its Vision, Mission and Values, Cemig creates shared value, joining philanthropic strategies and corporate citizenship with business objectives and promoting economic and social development of the communities in which it operates.

SDG3

SDG4

SDG11

To this end, Cemig has developed a strategy for sustainable community development, creating sustainable value in partnership with government entities (state Health, Education and Culture Departments, federal Sports and Health Ministries), municipal prefectures (Municipal Councils for the Rights of Children and Adolescents), and philanthropic institutions. It also receives support from employees, through the projects and actions of the Corporate Voluntary Work Program, and support from the public: clients themselves make donations through their electricity bills (the client 'Sponsorship Program'). Operating in an emerging market, Cemig has defined the priorities of its strategy for Corporate Citizenship and Philanthropy as follows:

- social and educational development;
- strengthening of the cultural sector; and
- growth in the sports sector, strengthening the Company's brand and image in the market and in society.

These priorities are aligned with the following Sustainable Development Goals (SDGs) 

Note: The Sustainable Development Goals are targets accepted and assumed by all the member nations of the UN in August-September 2015. They generated a worldwide agenda adopted at the UN Summit on Sustainable Development. The Goals were constructed as a sustainable agenda to guide society's activities up to 2030. There are a total of 17 goals, and 169 targets, divided into five areas: People, Planet, Peace, Prosperity and Partnerships.

- Goal 1: 'End poverty in all its forms everywhere.'
- Goal 3: 'Ensure healthy lives and promote well-being for all at all ages.'
- Goal 4: 'Ensure inclusive and quality education for all and promote lifelong learning.'

- Goal 11: 'Making Cities and Human Settlements Inclusive, Safe, Resilient and Sustainable', "especially goal 11. 4 – 'Strengthen efforts to protect and safeguard the world's cultural and natural heritage'

Cemig's [Sponsorship Policy](#) is a document that reiterates the Company's commitment to management transparency, making public the funding assumptions, underpinnings and origins that guide its decisions regarding sponsorships, support programs, partnerships and the use of federal incentive laws in its various social, cultural and sports investments.

The document also underlines Cemig's commitment to society, investing in culture, education, health and sport, and contributing to preservation of the permanent cultural heritage.

Cemig also has an internal Service Instruction (IS58 – Preparation and Management of Corporate Social Responsibility Projects) which establishes duties and responsibilities for all agents involved, designed to ensure sound management of social projects.

The following Cemig programs, which strive to enhance social and educational development, are particularly notable:

- the Grant Program;
- the Sponsorship Program;
- the Corporate Volunteering Program, including the AI 6% contribution program;
- the Fields of Light Program;
- Health Projects; and
- the Energy Efficiency Program.

Through the Grant Program, Cemig offers philanthropic institutions a 25% discount on electricity bills, calculated on average consumption over the last 12 months. To qualify for the Program, social welfare entities have to have a Regularization Certificate issued by the Minas Gerais State Development Department. In 2016 a total of 1,134 entities benefited from the program, for a total of R\$ 8.9 million in discounts on electricity bills. The savings generated can be used for social welfare purposes. For the Company, the program also reduces power bill payment defaults, since only institutions with no arrears can receive the benefit.

In the Sponsorship Program, donations in favor of the institutions are raised from third parties (the 'Sponsors'), by additions to their electricity bills which are then 100% passed on to the institution's bank account. Sponsors who enroll in the program can choose which registered institutions to donate to and the amount to be debited on the electricity bill. In 2016, 203 institutions received an aggregate R\$ 50.27 million in donations through the program. Thus, using its electricity billing system, Cemig establishes a partnership with society (clients, who become sponsors of the institutions) that benefits society and also enhances its image as a company committed to the development of local communities. The institutions, for their part, receive secure donations making use of Cemig's infrastructure and capillarity, without their having any costs of their own on communication or printing of billing or payment slips.

### Corporate Volunteer Program

The AI6% – Developing Citizens Program is part of the Corporate Volunteering Program. To qualify, the institution needs to have a Cemig employee already volunteering, who will be the institution's 'godparent' in dealing with the Program Organization, acting internally as a fund-raiser for the institution. The program's objectives, and more information, can be seen at [Cemig's website](#).

The 'godparents' have the responsibility of encouraging their colleagues to re-allocate up to 6% of their income tax payable to Funds for Children and Adolescents (FIAs). These philanthropic institutions carry out a number of activities:

- actions to protect and defend the rights of children and adolescents in a situation of risk or vulnerability;
- actions of protection against violence;
- programs combating child labor;

- programs of work training for adolescents; and
- initiatives of orientation, family support and socio-educational measures.

AI6% campaign targets are as follows:

A total of 2,133 employees took part in the 2016-17 Campaign and voluntarily allocated R\$ 1.3 million, to benefit approximately 25,000 children and adolescents in a situation of vulnerability, served by 199 institutions. Cemig also allocated part of its income tax payable to the same FIAs, investing a total of R\$ 249,600.00. In total, R\$ 1.56 million was allocated to entities in 101 municipalities/counties of the Company's operational area.

Of the institutions participating in the program in 2015 which gave account of use of the proceeds in 2016, approximately 33% went to support for people with special needs, and 37% to support the families, as follows:

TYPE OF INSTITUTION	
Shelters	7
Support for people with special needs	63
Support for families	72
Training for work / income generation	3
Foster homes	3
Day centers	11
Working for rights	4
Chemical addiction / Hospitalization programs	5
Others (sport, culture, etc.)	24
Hospitalization programs	1
<b>OVERALL TOTAL</b>	<b>193</b>

In 2016 Cemig carried out one more module of the 'Shared Knowledge Journey Program'. This stage took the form of a Projects Preparation Workshop, lasting four hours, in which 30 institutions participated. This program was begun in 2015, by a partnership between the Organizing Committee of the AI6% – 'Developing Citizens' program with the Cemig Volunteer Group of the Social Responsibility Committee, with UniverCemig, Cemig's Energy Efficiency Management group, and CeMAIS – the Minas Gerais Inter-sector Alliances Center, and has so far provided training for 50 institutions that benefit from the AI6% program. This training was the result of reflection on the reality of the Third Sector entities, and aims to contribute to technical enhancement of the professionals who operate in the Third Sector, to enable them to manage their organizations with a sense of entrepreneurial opportunity and create the conditions for their institutions to be self-sufficient in financial and organizational terms.

The Company carries out other volunteer-work initiatives, such as incentivating employees' voluntary participation in campaigns such as National Food Collection Day, organized by Companhia das Obras do Brasil – created in Italy in 1986 and brought to Brazil in 1999 – and celebration of Volunteers' Day – 'V Day', which is always held on the last Sunday of August.

"V-Day" is a date focused on mobilizing and fostering solidarity actions, held annually in a previously selected community. It is a joint effort with various companies of the Cemig Group (Cemig Saúde, Cemig Telecom, Gremig, AIC, Indi, Axxiom and Forluz) to encourage employees to do voluntary work. Another participant is CeMAIS, a Public Utility Organization - OSCIP (Organização da Sociedade Civil de Interesse Público), a community organizer that promotes inter-sector alliances in favor of sustainable development and strengthening of the third sector – and also more than 20 partners including volunteering professionals and companies that give their time and services to make this event a reality.

The 2016 version was held at the Pavonianas Social Works Association, in the Vila Paris district in the Center-South of Belo Horizonte, supported by 120 volunteers providing a series of free services to residents of the communities such as issuance of identity cards, medical and ophthalmological services, orientations on dental care, a bazaar, a beauty wholesale, and play events for children. The participating public was estimated at 1,200 people.


Another of the Program's initiatives was 'Christmas with Servas'. This was a partnership action, in 2016, between Cemig and the Minas Gerais Social Care Service (Servas) to collect toys for the children of Barra Longa, where numerous families lost



their home in the collapse of the iron ore tailings dam of the mining company Samarco. 250 toys were collected.

The Cemig 'Christmas Carriage' also visited 15 towns and cities giving presents to children.



In 2016, 3,942 hours were dedicated to the Volunteer Program, including its planning and organization, technical visits, and participation in courses and conferences by members of the Corporate Volunteer Group. 

Note: In 2015, 6,617.68 hours, and in 2014, 3,590.83 hours, were dedicated to the Volunteer Program, including its planning and organization, as well as technical visits and participation in courses and conferences by members of the Corporate Volunteer Group — resulting in an average of 2.17 hours/employee. (The figures we had published previously were 15,904 hours for 2015; and 17,187 hours for 2014.)

## The Fields of Light Program

This program began in 2005, and since then has enhanced approximately 870 amateur playing fields. An innovation in the current project has included multi-sport courts in the project. A total of 250 amateur football fields and 50 multi-sport facilities will receive electric lighting, to improve quality of life and social inclusion in less-privileged communities through the practice of sport, leisure and culture, principally at night.

As a further result, this is expected to improve Cemig's image as a company committed to acting with social responsibility. To take part in the program the municipal prefecture should be up to date with its payments to Cemig, and take responsibility for the management activity of the result of the facilities, including safety, maintenance of the facilities and payment of the electricity bills.

The fields or facilities that receive the lighting must belong to the municipalities, which must be within Cemig's concession area.

The investment programmed is in the order of R\$ 15 million, and will be used to prepare the lighting projects, acquire the materials and carry out the works. Of the 300 fields/facilities to be illuminated, planned in the project, 65 have been completed and 24 are in execution. The total invested in 2016 was R\$ 6.16 million.

## SOCIAL INVESTMENT DMA

### Sponsorships in health, culture and sport

2016 was a year of great challenges, especially in economic terms, due to the overall adverse phase in the country's economy. Cultural and social activities were particularly affected. To maintain the sponsorship projects, Cemig made partnerships with other companies in the group – Taesa, TBE, Light and Aliança Energia – which invested R\$ 7.44 million in funding under federal laws, in important projects in the State.

### Health



Cemig participated in Health Ministry Programs in conjunction with the government of Minas Gerais through the Health Secretariat, as follows:

- The National Healthcare Program (Pronas), benefiting four entities of the APAE (Association of Parents and Friends of the Disabled): Cristais, Três Pontas, Dolores de Campo and Caratinga;
- The National Oncological Support Program (Pronon), benefiting one benchmark oncology treatment hospital in Minas Gerais: the Mário Penna Hospital, with a line of research on prospecting for biomarkers in cancer patients at the Mário Penna Research Center Laboratory (CPMP). (The survey's full name is Project for Development of Biomarker Panels as Predictive Instruments for Clinical Prognosis and Response in treatment of cancer of the uterus, ovary and breast: Strategy for a Personalized Oncology).

## The Elderly Fund

Cemig participated in the Elderly Fund with three projects, investing R\$ 250,000 in 2016. This fund is managed by the *State Councils for Rights of the Elderly*, to carry out programs in the area of policy promoting protection, advocacy and care in relation to rights of the elderly.

One of the projects supported is in partnership with CeMAIS (the Minas Gerais Center for Inter-sector Alliances), through the REDE CeMAIS 3i Project. This project aims to improve quality of life for people living in long-term care homes in Belo Horizonte by providing a plan of advice and assistance in management for directors and managers of 28 institutions, and encouragement to work as a network.

The project aims to service four different publics: elderly people serviced in the 28 long-term care homes or Belo Horizonte; the managers of those homes, the Directors of those homes, and the members of the Municipal Council for the Elderly. The public directly benefited comprises the 1,132 elderly people currently served by these 28 care homes in the municipality of Belo Horizonte. Also benefited will be 56 managers of those homes, who will take part in six training modules in management or 'Shared Knowledge Journey Cycles', and 28 managers of these homes who will take part in monthly meetings of directors. The project also provides workshops for the 34 members of the Belo Horizonte Municipal Council for the Elderly, aiming to enhance their work.

## Sports

Another one of the Company's objectives is to uphold Cemig's commitment to the realities and demands of the local environments in which it operates, contributing to the development of sports in line with public policies in the communities where it operates. For the community, the program creates benefits in terms of redemption of social values and citizenship, especially for children and teenagers, by encouraging sports and generating opportunities for local youths to become athletes. For Cemig, it enhances its image as a company committed to the development of healthy habits and the welfare and development of local communities. In 2016 the Company invested a total of R\$ 1.22 million in sports.

## Culture

Strengthening the cultural sector is also one of the Company's Corporate Citizenship priorities. By promoting culture, Cemig benefits local society by generating leisure opportunities, while also preserving the memory and identity of the communities where it operates – and also the Company's own history, as Cemig itself has strong cultural roots in the state and countrywide. The practice also strengthens Cemig's reputation with the various stakeholders, as a company that is a guardian of cultural heritage and stimulates artistic expression.

In its cultural initiatives Cemig partners with the Minas Gerais State Culture Department, a policy that ensures alignment with public policies – a strategic factor for assertively choosing projects it wants to sponsor or wishes to participate in and assuring continuity of structuring actions in this field.

Cemig is concerned with taking culture to the whole of the State of Minas Gerais, decentralizing actions from the State's capital city. It is estimated that more a million people had access to some social-cultural activity through the investments made by the Company in more than 100 cities in all the regions of the state.

The culture sponsorships covered 123 projects in 2016 (88 non-incentive and 35 incentive projects), with a total investment of R\$ 11.24 million. Cemig's cultural sponsorships were mentioned 278 times in the media in the year, with 100% of the reports being in favor (this includes those classified as neutral). This content represented a measurement in terms of advertising value, of R\$ 2,144,613.23 in content published by the press. Considering the printed vehicles, a space of 528,040 cm<sup>2</sup> was conquered, while 164,500 cm<sup>2</sup> was originated by material encouraged. The estimated return of printed media for the analyzed period was R \$ 14.8 million, of which R \$ 6.2 million corresponded to the incentive material.

Some of the cultural projects supported:

#### Art at Inhotim

The Inhotim Institute, in Brumadinho, Minas Gerais, is open to the public and is both a botanical garden and a contemporary art museum, with a museum complex with numerous pavilions and galleries with artwork and sculpture in the open air. It receives some 30,000 visitors per month.



#### Popular Art Center (CAP)

Cemig's Popular Art Center, which is part of the Cultural Circuit of Liberdade Square in Belo Horizonte, exhibits the cultural riches of the people of Minas to the public, through documentaries, photographs, paintings, weaving, ceramics and works in wood and metal. This gives the visitor a chance to feel life in the various regions of the state. Its internal walls have graffiti by various artists, changed every six months and reflecting the versatility of the state's artists.

The Cemig CAP received 12,000 visitors in 2016.



#### The Minas Gerais Philharmonic Orchestra

In 2008, through a public utility institution sponsored by the state government, the Minas Gerais Philharmonic was born, with the audacious target of being a Brazilian orchestra of first-degree excellence, with a vigorous programming.

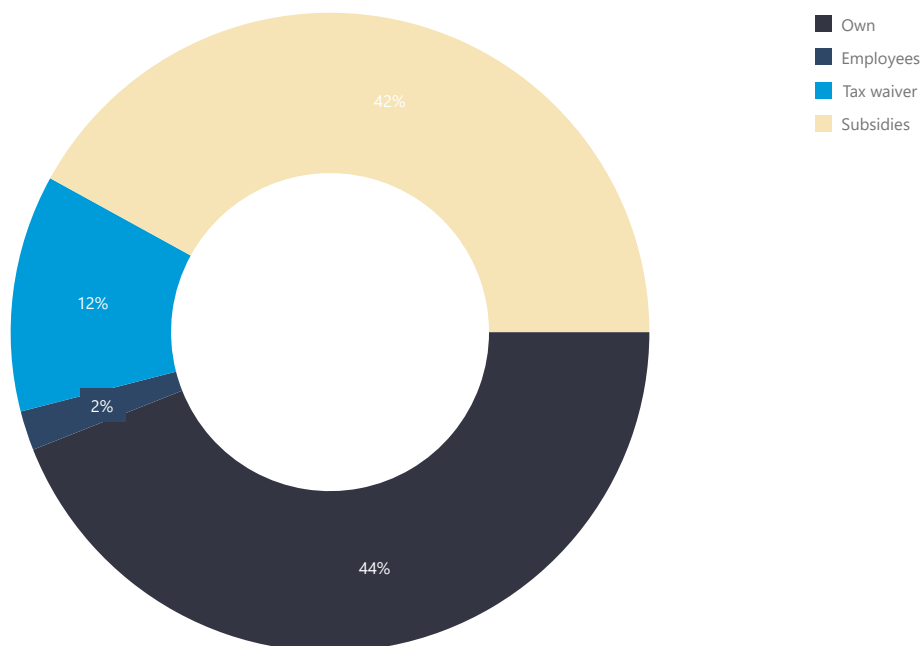
It has developed as a benchmark in Brazil, winning international awards and becoming the pride of the state's population.

Cemig sponsored the orchestra in 2016, and as well as monthly concerts gave the mothers of Belo Horizonte the gift of a public presentation on Mothers' Day, in a public square.

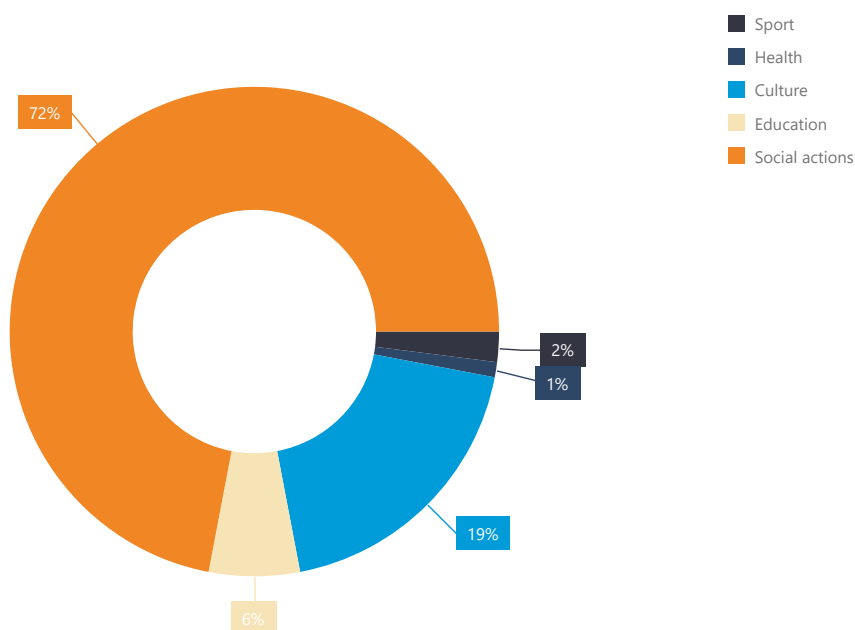
This table gives the details of Cemig's social investments:

AREA OF INVESTMENT	2016			2015		
AMOUNTS IN R\$	OWN	TAX WAIVER	TOTAL	OWN	TAX WAIVER	TOTAL
CULTURE	6,120,918	5,123,332	11,244,250	6,379,129	12,655.890	19,035,
EDUCATION	2,299,520	1,070,020	3,369,540	455,000	-	455,
SPORT	752,445	469,577	1,222,022	-	1,939,200	1,939,
SOCIAL ACTIONS	16,193,000	25,112,334	41,305,334	7,800,000	44,582,607	52,382,
FIA, AI6% AND DONATIONS	16,193,000	1,810,334	18,003,334	7,800,000	5,483,310	
SUBSIDIES	-	23,302,000	23,302,000	-	39,099,297	
HEALTH	-	499,154	499,154	-	1,939,200	1,939,
TOTAL	25,365,883	32,274,418	57,640,300	14,634,129	61,116,897	75,751,

Origins of funds used



Areas of Social Investment



## ENVIRONMENTAL STRATEGY

Cemig's environmental strategy seeks to balance development, environmental protection, preservation of biodiversity, rational use of natural resources, and compliance with environmental legislation with the Company's Business Mission and Vision and its Strategic Planning. Its formulation takes into account current and future risks and opportunities, challenges, medium- and long-term scenarios and the expectations of the public with whom Cemig interacts. All of this process is oriented by Cemig's Environmental, Biodiversity and Water Resources policies, and by its Climate Change Commitment and internal procedures. These documents were prepared as evidence of the alignment of the Company's planning and strategic management with sustainable development and sharing of value with employees and with society in the regions where it operates.

The Socio-Environmental Adaptation Program is multiannual and takes a cross-sectional approach throughout Cemig. It is the tool used to detail corporate strategy at a tactical level, in which the strategic guiding points are established. Through a prioritization matrix, the operation of the strategy is driven based on definition of programs and initiatives with their respective responsibilities, actions, goals, objectives, indicators and allocation of resources – comprising topics such as: Biodiversity; Water; and Climate Change. The goals relative to these and other topics are shown under the [Strategy](#) chapter in this report.


The involvement of Cemig's many stakeholders through activities networks and the building of partnerships to help prepare and implement all programs is considered to be of fundamental importance. The environmental strategy, and its tactical and operational implementation, are presented below.



The Environmental Adaptation Committee is periodically monitored by Socio-Environmental Adaptation Committee – which comprises representatives from all the Chief Officers' Departments, each of which evaluates its compliance with the actions proposed.


### Environmental management

Cemig's environmental management is based on its policies and directives, which are aligned with the company's strategic plan and cover all of the operation and support processes from planning through construction, operation up to final decommissioning of facilities. The structuring of these management systems ensures that their basic premises and assumptions are applied throughout the whole of the company's workforce.

Cemig's Environmental Management System (*Sistema de Gestão Ambiental* – SGA) facilitates adoption of best practices for minimizing environmental risk and optimizing operational costs. Acting preventatively, it aims to minimize possible environmental impacts, reduce the number of environmental events, give employees appropriate preparation for dealing with emergencies, and achieve greater assertiveness in conduct of the environmental strategy and the commitments assumed with the bodies in authority. Through the adoption of Brazilian Standards NBR ISO 14001:2004, or its own internal management system, named SGA Level 1 

Note: SGA Level 1: Certification of the Environmental Management System under NBR ISO 14001 is only possible for areas that already have an environmental license; and since many of the facilities were built prior to the environmental legislation, they are currently still in the process of corrective licensing with the environmental authorities. These facilities had good Environmental Management practices, but were impeded from obtaining certification. For this purpose, Cemig developed its SGA Level 1 as a step toward certification with ISO 14001. In practice, over time, as these facilities obtain their environmental operating licenses, they subsequently, at the first external audit, were recommended for certification under ISO 14001. This also indicates the rigor of the practices of SGA Level 1.





, which

was developed on the basis of NBR ISO 14001:2004, the areas of the company can now conduct their activities in a controlled manner and focus on compliance with the legal requirements that are applicable to environmental management. To ensure control, both systems are verified by independent audits carried out by a certifying organization accredited by CGCRE. 

Note: CGCRE: The Inmetro Accreditation System is the body that gives Brazilian Government accreditation to Assurance Organizations. Within Inmetro it is the main body with total responsibility and authority over all aspects of assurance, including accreditation decisions.

Cemig is in the process of adapting its Management System to the requirements of ISO 14001:2015 and ISO 9001:2015. The ISO 2015 Transition Project aims to improve alignment between the management systems and the strategic guidelines, introducing various concepts into the management system: the mentality of risk; analysis of the requirements of the relevant stakeholders; organizational learning; management of change; and greater involvement of the leadership at all levels. The project began in 2015 and is scheduled for completion in September 2018, with various phases, including: training of the people involved; review of all the documentation of the management system; redefinition of the scopes of certification; review of the results measurement systems; and audits.

There is also an internal procedure that sets minimum requirements for environmental adaptation for the areas that do not have certification from their Environmental Management System. Their compliance is periodically audited by the Company's internal Audit Team. The table below shows the data for the coverage of Cemig's Environmental Management System in 2016. It ensures 100% coverage of the electricity generated, transmitted and distributed to consumers:

COVERAGE OF THE ENVIRONMENTAL MANAGEMENT SYSTEM IN CEMIG				
Activity	ISO 14001	SGA Level 1	Minimum Requirements 	
Generation 	Note: As % total MW generated in the large plants		Note: The minimum requirements apply only where the SGA is not in place - i.e. neither based on 14001, nor based on Level 1	
	81%	18%		1%
Transmission 	Note: As % of total length of Cemig GT's transmission Lines			
	74%	26%		0%
Distribution 	Note: As % of all consumers			
	2%	11%		87%

## ENVIRONMENTAL COMPLIANCE

EN29

As well as being a legal obligation, environmental licensing of Cemig's activities aims to ensure that its operation and expansion take place in compliance with the environmental and sustainability criteria, and in harmony with the Company's environmental policy.

GC7

GC8

Environmental licensing can have a preventive character (in the case of new construction) or a corrective function (for facilities that are already built). For the environmental licensing of the facilities installed before 2007, the Company has grouped them by region, dividing the system into seven regional networks: *Central, East, West, North, South, Mantiqueira* and the *Minas Triangle*. At present, five of the seven regional networks already have licenses, while the Center and East Networks are in the process of analysis by the environmental authority. Cemig D now has 68.66% of its facilities duly licensed, and 31.34% in the process of licensing. Cemig has reached the target of 100% compliance with the periods stipulated for obtaining environmental licenses.

Cemig GT now has 75.3% of its projects duly licensed, and 24.7% in the process of obtaining of the environmental licenses. The percentage of operating generation and transmission facilities with environmental licenses in effect remains the same as in 2015, since no new operational licenses were issued in 2016.

The risks related to the environmental licensing process are described in the [Reference Form](#) and in the [20F Form](#).

Cemig received three significant 

Note: Environmental infringement notices are considered significant if the fine is greater than US\$ 10,000. (Definition suggested by the Dow Jones Sustainability Index - 2017).

environmental infringement notices in 2016, representing a total amount of R\$ 321,326.80. The Company is dealing with the demands, having submitted its responses to the public and environmental bodies concerned. Note that these are the amounts in the Infringement Notices, and depending on the proceedings, they may be reduced, or annulled.

There was only one case of a non-monetary sanction, relating to suppression of vegetation in a Permanent Environment Protection Area (APP) on a property in Lagoa da Prata, in the state (Official Letter PJ/MP/LP 358/2016 – Civil Investigation: 0372.16.000519-8) which will require replanting of 400 trees, under Copam decision 114, of April 10, 2008.

## FUNDS INVESTED

EN31

In 2016, Cemig invested approximately R\$ 52.7 million for environment purposes. Funds used for waste management totaled R\$ 551,800. Expenditure on R&D projects was R\$ 2.9 million; and the remaining R\$ 49.3 million was spent on compliance with environmental conditions, and environmental improvements. As mentioned in the item Environmental Strategy, the Environmental Adaptation Committee periodically reviews the prioritization and allocation of these funds.

The environmental investments can be broken down into capital investments, expenses and R&D projects as follows:

FUNDS INVESTED IN ENVIRONMENT (R\$)					
	2012	2013	2014	2015	2016
Capital expenditure	16,960,000	6,579,000	3,872,000	6,819,664	8,177,000
Total expenses	35,810,000	35,779,958	37,219,780	38,527,936	41,628,515
R&D	6,663,207	10,017,000	11,746,000	8,492,661	2,856,000

## MATERIALS

EN1

Materials from non-renewable sources, and those with greater intensity of use and operational significance, consumed by Cemig, and the respective quantities consumed are described in the table below. Consumption of materials for public lighting was higher, due to the launch of the *Campos de Luz II* ("Fields of Light") program by the state government in 2016 – which aims to illuminate some 115 amateur football fields and multi-sport facilities in 94 cities in the state. The investment was estimated at R\$ 15 million, used for acquisition of materials and the works involved. Additional information about the program can be found in [The Fields of Light Program](#) section of this Report.

YEAR	DISTRIBUTION TRANSFORMERS (units)	CONCRETE POLES (units)	CABLES (m)	CABLES (kg)	METERS (units)	PUBLIC LIGHTING (LAMPS, RELAYS, REACTORS, LAMP HOUSINGS, ARMS, PLUGS, IGNITERS, ETC.) (units)
2012	13,393	49,001	11,915,226	2,606,570	548,993	744,091
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

## WASTE

EN2

Reverse logistics and final disposal of waste are the responsibility of an area that has been certified by SGA Level 1 (Level 1 of the Environmental Management System), which receives waste that has been duly identified, separated and packed by the areas that generated it. In 2016 approximately 46,100 tons of industrial waste was disposed of in an environmentally appropriate manner: 98.7% was sold or recycled; 0.7% was regenerated; and 0.6% was co-processed, incinerated or sent to industrial landfill.

EN23

EN24

SDG12

The disposed waste consists mainly of cables and wires, transformer scrap, scrap metal, scrapped meters, poles, cross-arms, and wood shavings and residue. Sale of 45,500 tons of waste generated R\$ 11.1 million, an increase of approximately 13.4% over the previous year's revenues from the same source.

A total of R\$ 1.62 million was spent in 2016 on disposal of 597.6 tons of solid waste impregnated with oil and solvents, IPE, fiber and fiberglass waste, asbestos waste and items contaminated by PCBs or insulating mineral oil – in total, 14.1% more than in the previous year. This increase reflects the fact that all the wastes disposed of in the year were not necessarily generated in the year. This was due to temporary storage in which the waste is characterized, separated, packed and identified before being allocated. Another important component was the disposal of 187.5 tons of contaminated waste, and equipment containing PCBs. These materials were sent for thermal destruction in a company licensed for this type of work.

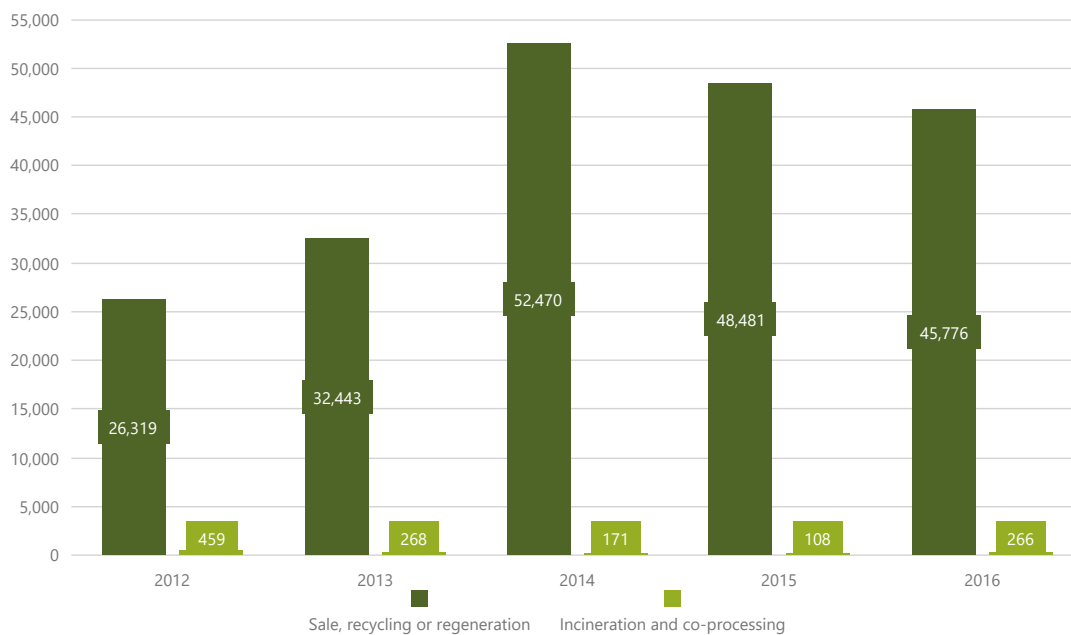
Of the total of oil-related wastes disposed of, 322.8 tons of insulating mineral oil were regenerated and reused by the Company – 10.8% more than in 2015. This measure, as well as offering environmental benefits such as non-generation of contaminated waste, enabled Cemig to save some R\$ 3.3 million in oil acquisition expenditure alone, without taking into account waste disposal costs.

The total of wastes impregnated with oil was reduced by about 22.7% from the previous year, due to greater control in the activities of maintenance of equipment, which also contributed directly to reduction of the costs of final disposal by R\$ 11,700.

There were no significant spills or leakages in 2016.



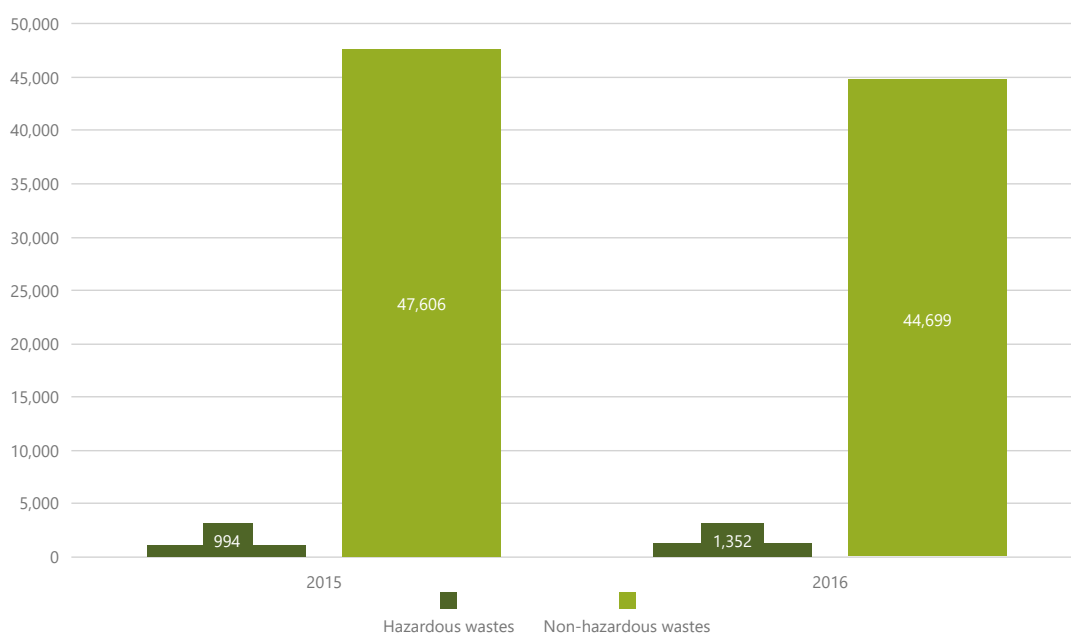
### Final disposal of wastes (t)



The total of oil regenerated in 2015 was rectified

**Wastes sent to landfill in 2016=9 tons**

### Hazardous and non-hazardous wastes (t)



To adapt to the legislation on the environment and workplace safety Cemig has created technical specification ET-02.118-Cemig-760 which sets the minimum requirements, where applicable, for manufacture, handling, storage, transport, packaging and final disposal of materials acquired by Cemig, as well as information on compliance with the legal requirements, and the services contracted when the materials are used and the wastes produced.

## ENERGY

Cemig's energy consumption, by type:

TOTAL ENERGY CONSUMPTION (GIGAJOULES – GJ)								
YEAR	ELECTRICITY	CHANGE FROM PRIOR PERIOD (%)	FUEL FOR FLEET, EMERGENCY GENERATORS, EQUIPMENT AND MACHINERY*	CHANGE FROM PRIOR PERIOD (%)	FUEL FOR THERMAL PLANTS **	CHANGE FROM PRIOR PERIOD (%)	TOTAL	CHANGE FROM PRIOR PERIOD (%)
2012	159,345	-5.57	183,195	-9.75	545,986	438.90	888,476	87.85
2013	157,487	-1.17	176,615	-3.57	1,923,927	252.38	2,258,029	154.15
2014	158,993	0.96	173,807	-1.59	8,054,794	318.66	8,387,594	271.46
2015	160,042	0.66	164,894	-5.13	1,965,111	-75.60	2,290,047	-72.70
2016	156,373	-2.29	162,030	-1.74	1,709	-99.91	320,112	-86.02

\* The fuel consumption figures for the years 2013, 2014 and 2015 were rectified during the GHG Inventory Audit.

\*\* The amount of residual oil consumption at Igarapé Thermal Plant in 2014 was rectified during GHG Inventory Audit.

The method used for calculation of some of the components of this table is based on the tool in the GHG Protocol, which is audited by an outside body within the scope of Cemig's GHG Inventory.

Total consumption of energy was 86.02% lower than in 2015, mainly due to: the Igarapé Thermal Plant not being dispatched for generation in 2016; ending of the commercial operation of the Ipatinga thermal plant (the contract for which ended in December 2014); and the lower time of operation of the Barreiro thermal plant in the year: 713.95 hours compared to 6,641.62 hours in 2015 (due to one of the blast furnaces of Vallourec being banked).

This total consumption of electricity 2.29% lower than in 2015 helped meet the target established by Cemig for reduction of consumption: in 2015 Cemig's consumption was 5.2% lower than in 2011, the base year for comparison; and in 2016 it was 7.3% lower.

For more information about Cemig's Objectives and Goals, please [click here](#).

The fuel consumption of Cemig's vehicle fleet was reduced by 1.22% from 2015 to 2016 – a saving of approximately R\$ 1.6 million for the Company. Comparing the years 2012 and 2016, Cemig reduced its annual consumption by 10.16%, that is, there was a reduction in consumption of more than one million liters. This reduction in consumption was due to updating of the vehicle fleet under the Fleet Optimization Program of 2015. The overall optimization was possible because all vehicles replaced in 2010 came with the Electronic Management System installed. This enables use of the vehicles to be constantly monitored. From 2012 to 2016, the total number of vehicles was reduced by 630. Also, with the new fleet replacement program in 2016, some 93% of the pickup truck fleet began to use S10 Diesel, which has a lower sulfur content, as principal fuel.

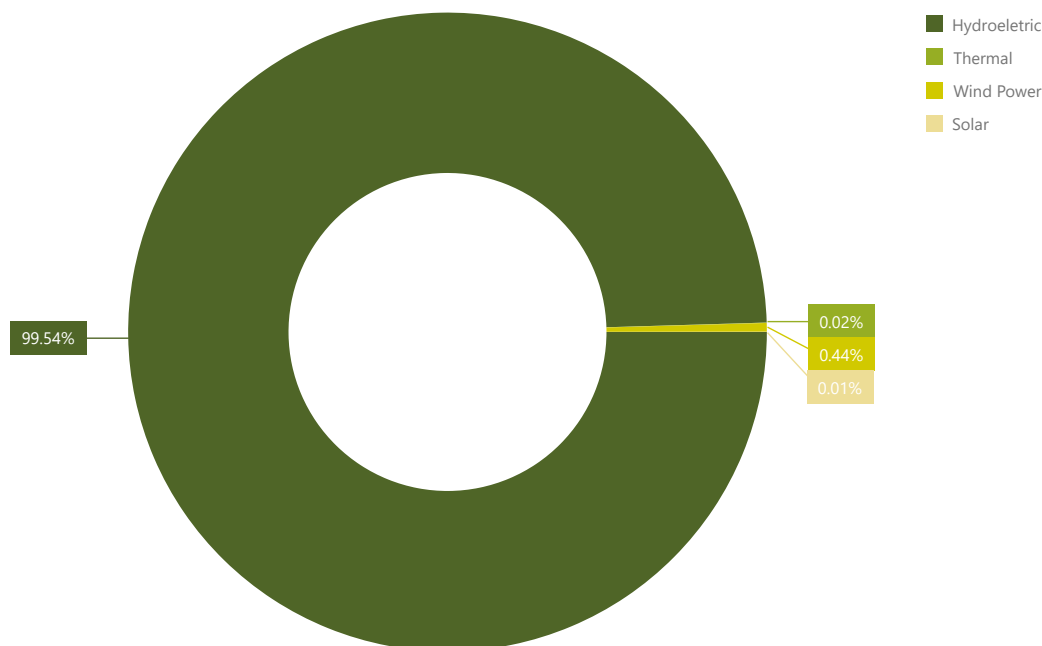
This table below gives Cemig's various electricity generation sources, by installed capacity and net total generation. It is worth noting that nearly 100% of the power generated comes from sources that do not emit greenhouse gases.

CEMIG'S GENERATING PARK								
Source	Installed Capacity - MW				Net generation - MWh			
	2015	%	2016	%	2015	%	2016	%
Hydroelectric	7,233	97.39	7,668	97.53	18,609,916	98.00	23,172,051	99.54
Thermal - fuel oil	131	1.76	131	1.67	167,645	0.88	-	-
Thermal - process gases	13	0.17	13	0.17	53,975	0.28	4,879	0.02
Wind Power	49	0.66	49	0.62	158,003	0.83	101,470	0.44
Solar	1.42	0.02	1.42	0.02	-	-	1,718	0.01
Total	7,427	100	7,862	100	18,989,539	100	23,280,118	100

Note: Renova wind farms, in which Cemig stake is equal to 34.15%, were not considered.

In 2016 there was lower generation of energy from thermal plants, mainly due to the non-dispatch of the Igarapé Plant by the ONS (The National System Operator) and also to the shorter operating time of the Barreiro Plant, which operated 713.95 hours in 2016 against 6,641.62 hours in 2015, because of the shutdown of one of the blast furnaces by Vallourec. The Cemig - Vallourec contract for the operation of the Barreiro Plant was terminated in December 2016.

Generating Park - Net generation by source - MWh



## WATER RESOURCES

### WATER RESOURCES DMA

EN9

Since water is the main raw material for Cemig's production of electricity – and a resource that is sensitive to changes in climate, vulnerable to the consequences of exploitation of other natural resources, seriously impacted by human activities and subject to the regulatory environment – Cemig takes water management and conservation very seriously. The publication of Cemig's [Water Resources Policy](#) in 2016 underlines this commitment of the Company.

EN26

SDG6


The dispatching of the thermal plants in the National Grid is the responsibility of the National System Operator (ONS). The ONS is a legal entity under private law, in the form of a non-profit civil association. It is responsible for the coordination and control of operation of the facilities of the Brazilian generation and transmission grid, under the inspection and regulation by the regulator, Aneel.

Cemig's operation of reservoirs for generation of hydroelectric power essentially requires consideration of the multiple uses of water by other users in a river basin; and this in turn, leads to the need to take into account a range of constraints – environmental, safety, irrigation systems, human consumption, waterways and bridges, among others – which Cemig rigorously respects. In periods of severe drought, as experienced in the years 2013–2016, monitoring and prediction of reservoir levels, and constant dialogue with government, civil society and users, have been central to ensuring continuity for both power generation and also other uses of this vital resource.

We have been reporting on the management of storage in the reservoir of the Três Marias hydroelectric plant since the 2014 annual report. And, as reported, flows into this reservoir since 2013 have been very low compared to the historic average. Cemig's reservoir management measures – such as downstream environmental tests, setting of new machinery operating levels, simulations of future reservoir storage quantities and multiple use downstream water capture point levels – made it possible to avoid depletion of the reservoir's stock of water over this period. Due to the flexibility of the minimum flows coordinated with the other users of the lower São Francisco River, it was possible to achieve a more appropriate operation to serve all the uses of this river basin.

In 2016 the committee of the National Waters Agency discussed integrated management of the basin of the São Francisco River. In twice-monthly or weekly meetings, all the principal parties involved discussed the found and expected impacts of inflows for optimal management of the finite resource available in the form of regularization of outflows. These meetings were attended by: the National Water Agency, the National System Operator, the National Natural Disasters Monitoring Centre, the São Francisco Valley Development Company, the Pirapora and Jaíba Project irrigation associations, the Federal and the State Committees for the São Francisco River Basin, and municipalities located downstream on the São Francisco river and around the Três Marias lake.

From the beginning of the rainy season, the reservoir reached its minimum on January 8, 2016, with 6.7% of the potential volume, and reached a peak at 37.5% in the last week of May. On the other hand, at the start of the 2016-17 cycle the volume was 14.1% of potential (on November 12, 2016), which is much higher than in the previous three years.

There have been important milestones in the management of the São Francisco River basin in 2016, also due to the flexible treatment of the minimum outflow of the group of hydroelectric plants run by the São Francisco Hydroelectric Company (Chesf) – the Sobradinho, Itaparica and Xingó plants. Basically, the system is to provide the 'lung' of storage for the lower São Francisco River in the Sobradinho reservoir, with a volume four times larger than that of the Três Marias hydroelectric plant. This year has proved that reduction of the minimum outflow 

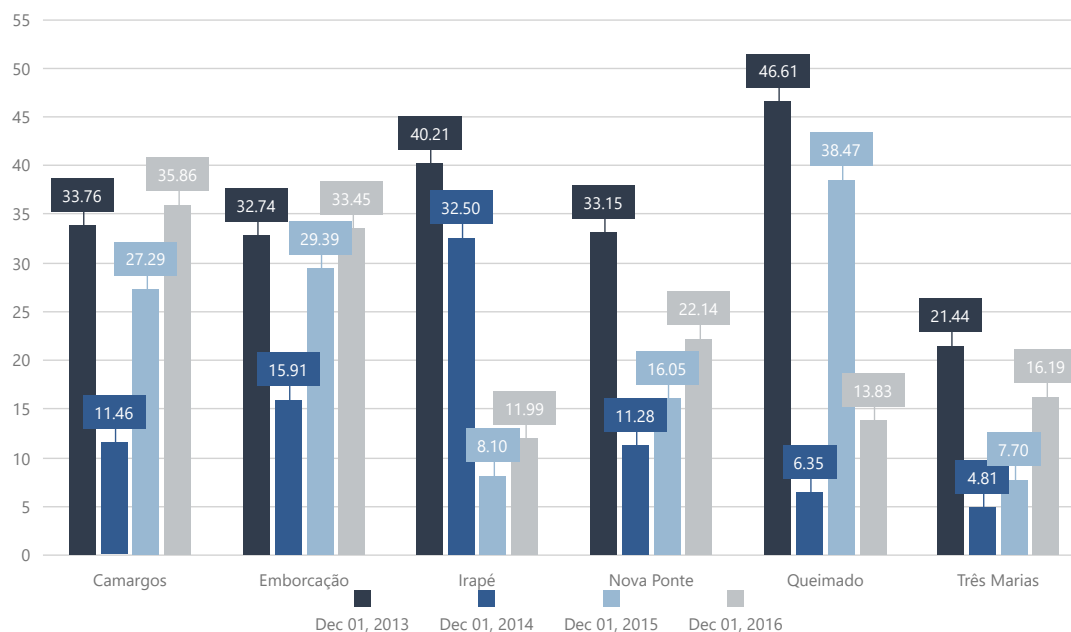
Note: Exit flow of reservoir water.

was a successful decision, preventing the reservoir from reaching an undesirable volume level, with a minimum of 5.6% at the beginning of the current rainy period, much more comfortable than the value of 0.95% at the start of December 2015. Further tests are in progress to assess the effects of using an outflow rate of 700 m<sup>3</sup>/s.

The Três Marias Plant played a fundamental role in the integrated management of the São Francisco River basin, when its outflow was increased to improve the storage conditions in the lower São Francisco River, at the Sobradinho plant. Subsequently, when the incremental Três Marias-Sobradinho basin drained enough water to sustain the level necessary at Sobradinho, the outflow from Três Marias was reduced to the necessary limit agreed with the downstream users to preserve stocks in the reservoir.

The following chart gives data on water storage at Cemig's main reservoirs on December 1, 2016, compared to the same time in 2015, 2014 and 2013. With the exception of the reservoir of the Queimado Hydro Plant, storage has been better than in the previous year, indicating higher inflow indices.

Water Availability – Active Storage (% over total)



Cemig makes daily data on the levels of some of its reservoirs available on its [website](#).

Even though its hydroelectric generation process per se does not consume water, Cemig is a major user of this resource and, therefore, actively participates in joint decision-making bodies and forums, monitoring and proposing decisions for the electricity sector, reconciling with the multiple uses of water in the river basins. It participates in all water resource forums in its areas, such as the National and State Water Resource Councils, River Basin Committees, Technical Chambers and Working Groups. With its activity focused on Minas Gerais, Cemig is a member of 20 state river basin committees and five federal committees. It is also a member of the Brazilian Large Electricity Generators' Association (Abrage) and in 2016 it was coordinator of Abrage's Water Resources Work Group. You can [click here](#) for more details on Cemig's participation in institutional organizations.

Cemig periodically reviews water management indicators, which demonstrate the Company is moving toward meeting its goals and enabling it to make the necessary interventions. Of particular note is the Plant Energy Planning Efficiency Ratio (IEPE), which measures the efficiency of the energy operations of Cemig's hydroelectric plants, comparing actual power generation with optimum generation levels. It tracks observed flows, maintenance of generating units and compliance with operational constraints. This indicator is aligned with the 'Increase operational efficiency' strategic objective in Cemig's corporate business strategy map. A higher result means water use planning for power generation is better. In 2016, because there were practically no overspill in the plants, because of the low water flows, the IEPE result exceeded the target of 92%, reaching 93.44%. The new target, set for 2017, is 92.5%.

To fully ensure regularity in relation to the various uses of water, grants of generation-related concessions are linked to technical studies of the project. These take into account the permissible flow, reservoir characteristics and electrical bus requirements. Cemig manages 145 water resource use processes, which are related to all of the Company's activities, of which 28 are processes of registry for only minimal use and 117 are grant processes.

This [link](#) accesses the map showing Cemig's grant locations.

## RISK ANALYSIS

Based on its Risk Management System, Cemig analyzes scenarios and determines the degree of financial exposure involved, to support the Company's strategic decisions and to establish measures for prevention and control. Currently, the following risks have been mapped: silting up and rupture of reservoirs; weather forecasting errors; loss of small hydro plant physical

offtake guarantee levels due to decreased water availability; regulatory and price structure changes; and potential conflicts with other stakeholders (which might result either from prolonged drought or from floods due to excessive rainfall). For more details on this subject, see:

- [FORM 20-F](#)
- [Climate Change 2016 Information Request](#)

## DAM SAFETY

EU21

The safety of Cemig's dams is grounded on best Brazilian and international practices at all stages of the process. The security program involves field procedure inspections, collection and analysis of instrumentation data, planning and monitoring of maintenance services, analysis of results and classification of structures. Inspection frequency is based on structure classification. Each dam's vulnerabilities are continuously and automatically calculated and monitored by the Dam Control and Safety System (the 'Inspector' system). Developed through an R&D project, Inspector incorporates deterioration georeferencing tools, enabling comprehensive analysis of each dam's behavior. Both Cemig's own professionals and a multidisciplinary team of recognized outside consultants regularly conduct safety reviews. These reviews go carefully into all matters relating to the safety of the dams, which are carefully investigated by highly-qualified specialists.

Cemig is the pioneer in Brazil in the preparation of emergency plans for potential dam burst scenarios. Studies began in 2003. There are currently specific emergency plans available for each dam, covering the following items:

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

Internal training drills for these Emergency Action Plans (PAEs) are held periodically, and can be based on discussion or on operations. Discussions can include seminars, workshops, tabletop exercises or games; the operational activities can be in the form of drill or simulations. The aim of these training events is to evaluate the PAEs and propose improvements, especially in flow of communication and the process of decision-making.

Emergency actions external to the Company, focused on evacuation of people from risk areas, are regarded as the responsibility of the public protection and civil defense authorities. In this case, Cemig's job is to communicate effectively with these institutions and provide support within its areas of competence and attributions.

## HYDRO-METEOROLOGICAL MONITORING

Cemig takes initiatives enabling accurate management of potential impacts to its business resulting from water availability issues. It preventively invests in practices that put it in a more secure situation in relation to various possible scenarios. Among the up-to-date techniques and equipment used are the Storm Location System, the Hydro-meteorological Telemetry and Monitoring System, mathematical hydrologic simulation models, and weather and climate forecasting tools.

Cemig currently operates a hydrometeorological network of 583 monitoring points, with 232 for measuring rain, 224 for river flow rates, 74 monitoring reservoir and river levels, and 53 weather stations that monitor rainfall, temperature, humidity, wind speed and direction, solar radiation and atmospheric pressure. These stations are distributed in strategic locations in the states of Minas Gerais, Goiás, Rio de Janeiro, Espírito Santo and Santa Catarina, and the data is received in real time at the Company's headquarters in Belo Horizonte.

The main instrument for increasing the assertiveness of the Company's hydrological forecasts, the Meteorological Radar, acquired in 2011, enables higher levels of operational safety at its hydroelectric plants and for the general public. It is also of great strategic importance in the control and operation of hydroelectric reservoirs. Through early information about the direction and intensity of rainstorms, it is possible to estimate the amount of water that will reach a reservoir, and thus adjust operations to minimize the effects of floods on populations and on the plant itself. This ability to forecast also means the Company can issue warnings to Civil Defense authorities about storms that could have serious consequences for the population, making it possible to take preventive action. [Click here](#) for more details.

## WATER QUALITY MONITORING

In the hydroelectric plants the principal raw material for production of electricity is water, which runs the turbines, and 100% of it returns to the natural watercourse. The quality of the water in Cemig's reservoirs is monitored regularly in a network including the main river basins in the state of Minas Gerais, with operations in 42 reservoirs and more than 180 stations collecting physical, chemical and biological data.

The samples collected for monitoring of water quality generate a large volume of information, which is analyzed and stored, producing a large database (named Siságua), which makes it possible to accompany changes to reservoirs, and their surrounding areas, in space and time.

Cemig uses the Water Quality Index ("Índice de Qualidade das Águas", or IQA), calculated from results for nine specific parameters, as a concise and objective means of communicating to authorities and the public the influence that activities related to development processes have on the environmental dynamics of aquatic ecosystems. This index points to the degree of contamination of river waters with organic material, nutrients and solids which, normally, are indicators of pollution associated with domestic waste.

The table below shows the IQA results in the second half of 2016 for some of Cemig's plants, in various different river basins:

PLANT	RIVER	IQA	QUALITY LEVEL	RANGE
Cajuru	Pará	81.25	Excellent	$90 < IQA \leq 100$
Jaguara	Grande	90.17	Good	$70 < IQA \leq 90$
Machado Mineiro	Pardo	75.00	Average	$50 < IQA \leq 70$
São Simão	Paranaíba	77.72	Bad	$25 < IQA \leq 50$
Volta Grande	Grande	86.13	Very Bad	$0 < IQA \leq 25$
Irapé	Jequitinhonha	78.40		
Três Marias	São Francisco	82.28		

To classify reservoirs by degrees of water quality degradation, the Paraná Environmental Institute (IPA) has developed a Reservoir Water Quality Index (IQAR), designed to understand the main characteristics of its reservoirs [↗](#)

Note: Characteristics of food/nutrient levels available to fauna and flora living in the reservoirs (trophic), relating to the physical characteristics of the reservoir (morphometric), and in terms of rainfall, and entry and exit volumes (hydrological).

and their trends over time. Cemig has begun calculating the IQAR index for the reservoir of the Volta Grande plant, as a project of its R&D program.

## RESEARCH AND DEVELOPMENT

The Research and Development Projects are management instruments that enable Cemig to identify operations for improvement, establish partnerships and put in place innovations referenced to best practices reported worldwide. The results of Cemig's Research and Development Projects are fundamental in the quest for innovations in methodology, and

solutions for adaptation and mitigation of the effects caused by a project. The aim is to minimize environmental risks, and conflicts relating to multiple use of water, and conserve biodiversity, as part of the quest for sustainable management of water resources.

Through R&D projects, Cemig promotes action for protection of ecosystems and preservation of biodiversity, developing tools that incorporate ecological information on the level of individuals, populations and communities, correlating with the degree of degradation of the environment. Some Cemig projects have evaluated the environmental quality of reservoirs of hydroelectric plants by developing Biotic Integrity Index. This enriches the approaches that can be made in assessing and monitoring bodies of water, innovating in technologies to support management of water resources, and drawing attention to dealing with the problems associated with the uses of these resources.

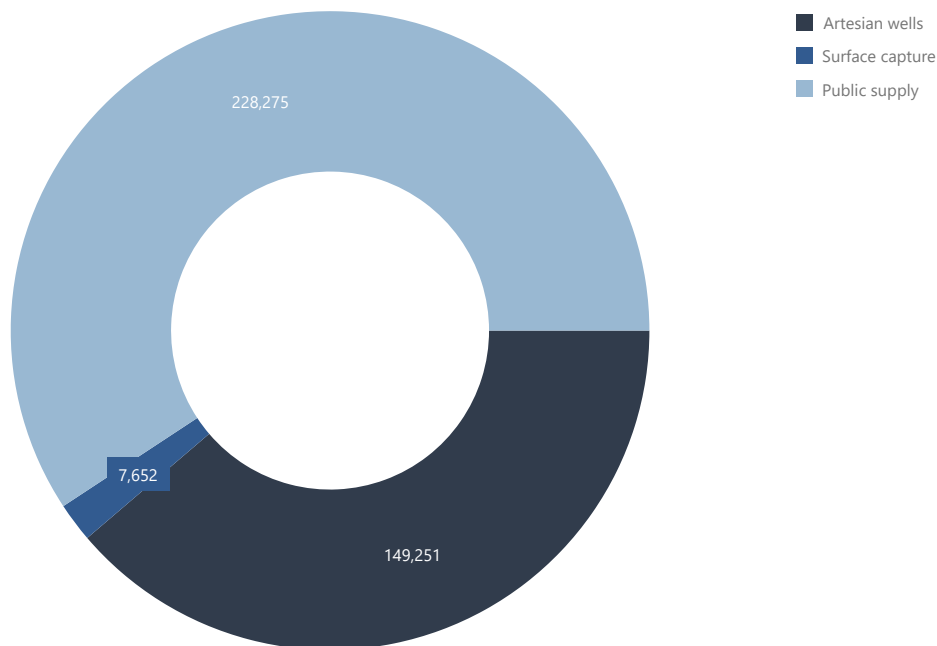
The research projects should be seen as long-term programs to guide and foster scientific output and fill gaps in knowledge, always seeking to make advances in strategies and environmental planning.

For more on Cemig's R&D projects, [click here](#).

## WATER CONSUMPTION, AND EFFLUENTS

Cemig's total water consumption in 2016 was 385,178m<sup>3</sup>, as shown below:

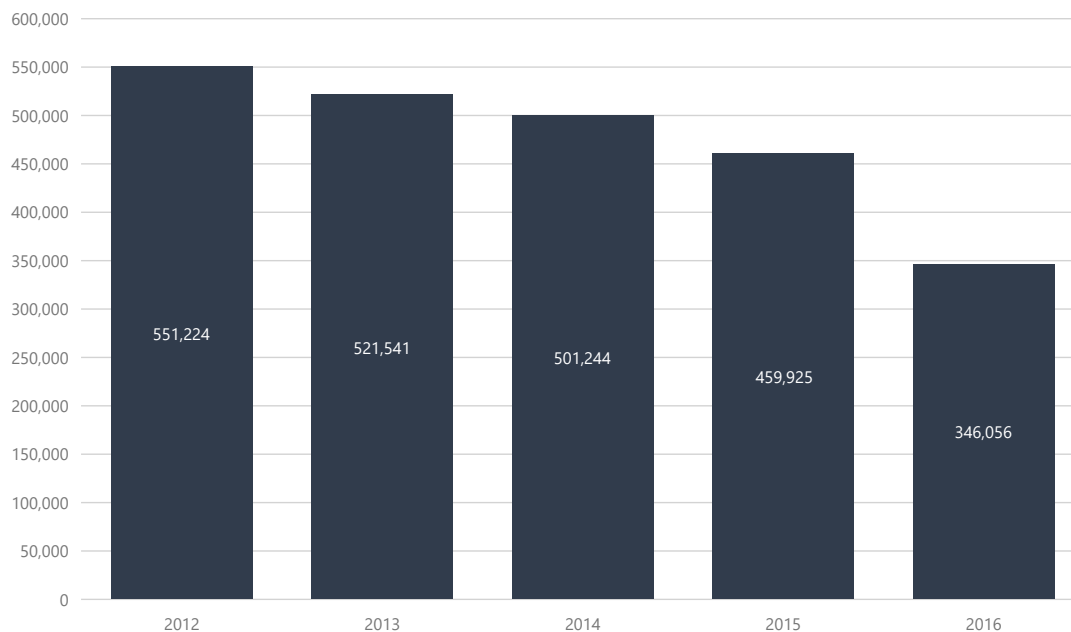
Total water consumption (m<sup>3</sup>)



Cemig's total consumption of water for administrative purposes was 346,056m<sup>3</sup>, including public water supply, surface water and artesian wells – and was reduced by 37% on a comparison with the levels of the last five years, as shown in the next chart. [Note: All Cemig's capture of underground water has the respective grant of rights.](#)



### Water consumption – Administrative (m³)

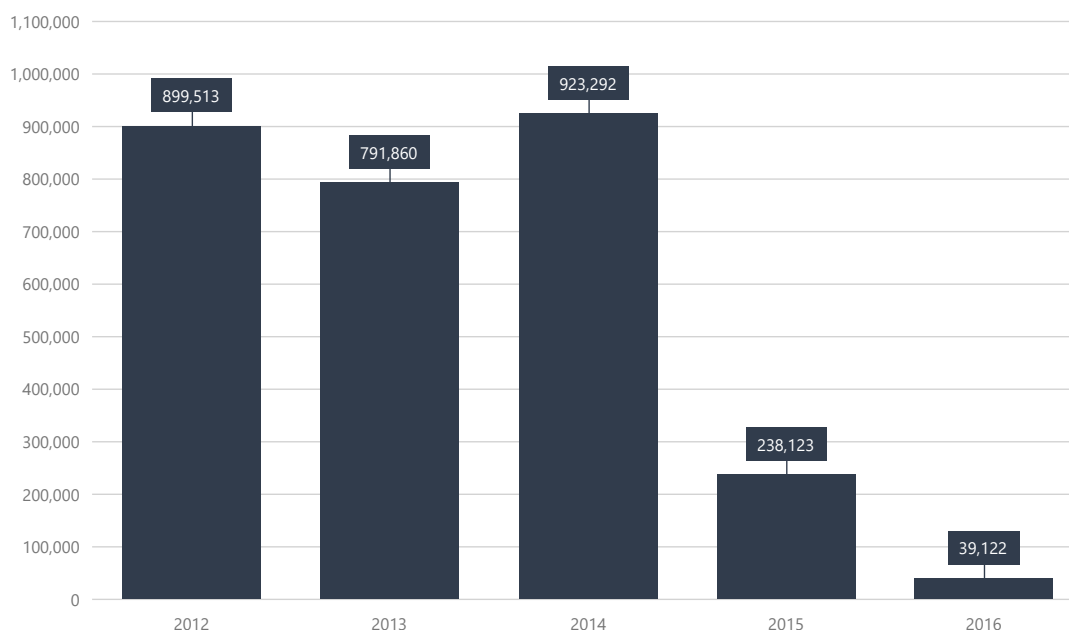


Consumption of water in Cemig's buildings in the metropolitan region of Belo Horizonte was 35.98% lower than in 2010, and 15.32% lower than in 2015. This is the result of measures such as change of processes, management of consumption in the facility, and faster correction of leaks, as well as installation of new equipment, which also reduces consumption.

In 2016 the water company, Copasa, installed a remote reading system in Cemig's head office building, which reports daily consumption, and reduces water bills due to removal from the calculation of the water evaporated from the air conditioning system through towers – previously accounted as sewerage outflow. For an investment of R\$ 8,506.00, this action saved R\$ 61,196.43 in its first seven months of operation, reducing the water bill for the head office by 16.6% – an example of satisfactory water consumption management.

Industrial consumption of water used for cooling in the thermal plants totaled 39,122m<sup>3</sup>, or 83.6% lower than in 2015. This reduction is mainly due to the Igarapé thermal plant not being dispatched in the year; termination of commercial operation of the Ipatinga thermal generation plant (the contract with Usiminas expired in December 2014); and the lower time of operation of the Barreiro thermal plant – it operated for 713.95 hours in 2016, compared to 6,641.62 hours in 2015.

## Water consumption – Industrial (m³)



The water used for the purposes of electricity generation is not characterized as consumption, since all of it returns to the watercourses involved – hence the above figures do not include any reference to this flow.

The goal for reduction of total water consumption was achieved: consumption in 2016 was 76.7% below that of 2011.

For more information about Cemig's Objectives and Goals, please [click here](#).

The Company's thermal plants do not generate effluents, since the production processes at the Ipatinga thermal plant recirculates used water; and at Igarapé, water is returned to the river after use. Their water sources include capture from the river surface, and the public supply.

Effluents generated in administrative units are disposed of in public sewage systems, or in controlled septic tanks, and do not directly affect any waterways. The industrial activity of power generation activity *per se* does not consume water, so is not accounted in the figure for Cemig's total consumption. In 2016, 276,845m³ of sanitary effluents were generated.

## BIODIVERSITY

### BIODIVERSITY DMA

GC7

With a predominantly renewable generating matrix, Cemig and biodiversity are intrinsically interlaced. Cemig's operating area contains two terrestrial biodiversity hotspots: the Cerrado, and the Atlantic Forest; and in the area of freshwater ecosystems, Cemig is responsible for managing more than 3,500 km² of fresh water in its reservoirs. [↗](#)

GC8

Note: 'Hotspots': areas severely threatened and of extreme biological importance for the whole planet.

SDG14

The Company operates in a number of different fields of business. For each project, it conducts special studies to evaluate and establish environmental programs to control, mitigate and compensate negative impacts, and maximize positive ones – in a synergy between research, innovation and practical solutions which, coupled with Cemig's expertise, is able to add value to society and to the biomes in which it operates.

SDG15

Since Cemig's most important generation source is water, a spatial rearrangement is required when building a hydroelectric plant. Thus Cemig has dedicated special attention to conservation of the biodiversity where plants are built, since water and biodiversity are intimately related. There is a legal commitment to recover, protect and conserve forests, rivers and fauna in the area around the project.

Due to the large number of power plants that Cemig manages, their impacts on the aquatic environment, specifically on fish populations, are great and have substantial environmental significance; thus Cemig devotes significant attention and control to those impacts.



Similarly, being Brazil's largest electricity distributor in total length of lines and networks, Cemig understands how seriously vegetation can interfere with electricity lines and, thus, prioritizes action to mitigate the risk of power outages through sustainable vegetation management practices.

Through its Biodiversity Policy, the Company formalizes the relevance of these impact.

## FISH CARE

To establish effective measures for long-term preservation of the fish populations in the water catchment areas where it operates, Cemig created and developed its Peixe Vivo ('Fish Alive') Program. The principles that orient this work done by Cemig are: adoption of scientific criteria for decision-making; establishment of partnerships with other institutions; changes to the practices adopted, based on the information generated; and encouragement for disclosure of the information from the program to the public at large. The results obtained in the projects underline these principles, and generate scientific knowledge for efficacious decision-making.

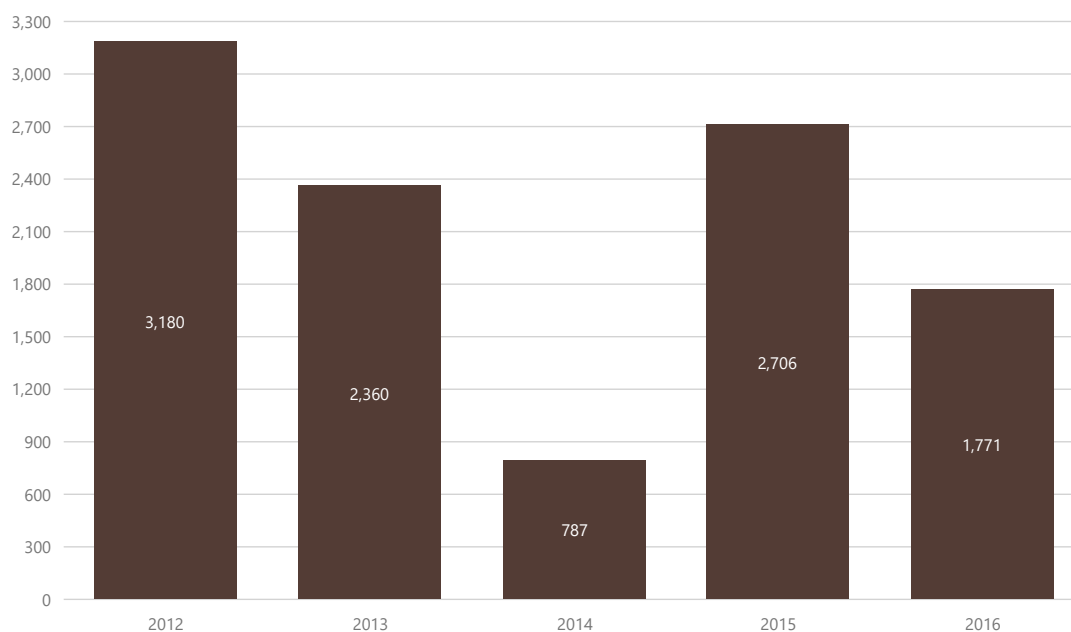
A total of R\$ 4.8 million was invested in projects and actions for preservation of fish populations in 2016, including expenditure on research projects, maintenance of fish farming stations, environmental education, and events centered on relationship with the community. This table shows the main indicators of the Program:

PEIXE VIVO PROGRAM – INDICATORS		2016
	Investment in fish research and handling projects (R\$)	4,805,227
Fish Conservation and River Basin Management programs	Affected Biomass (kg) 	
	Note: Measures the amount of dead fish (in kg), resulting from maintenance and operation of plants.	1,771
Research	Starting in Science (students)	14
	Masters degree (students)	18
	Doctorate (students)	19
	Researchers 	
	Note: Comprises post-doctoral students, technical support and researchers.	50
	Scientific output (papers)	32
Relationship with the community	Participants in fish repopulation actions	846

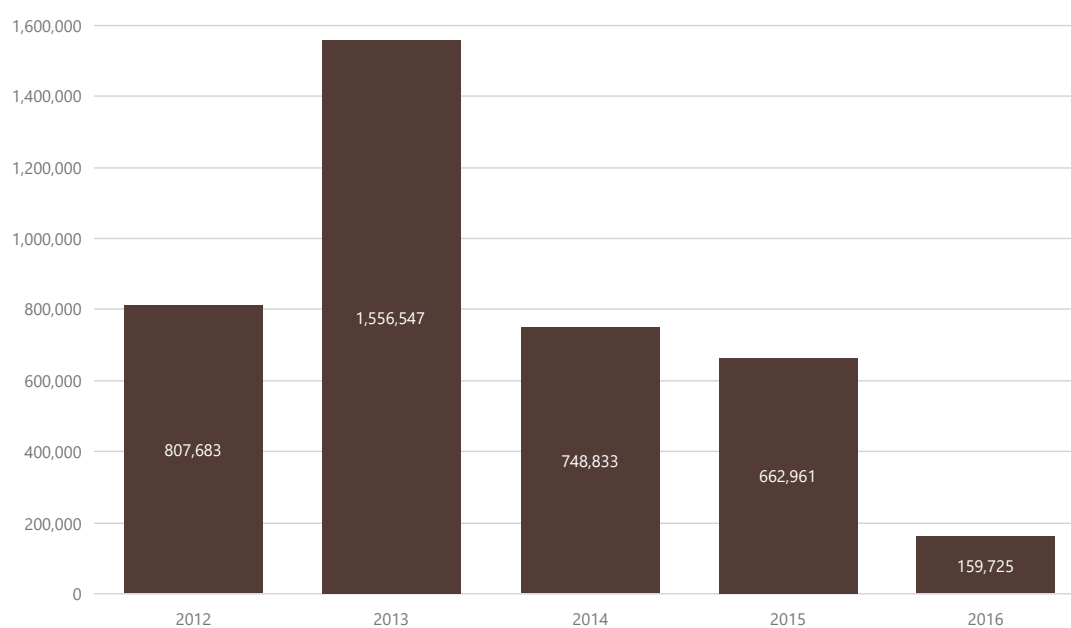
Fish are directly affected by the process of electricity generation by hydroelectric plants, and they can be injured or killed. To measure and mitigate this impact, since 2007 Cemig has used an internal indicator that reflects the efficiency of protective measures during maintenance and operation of hydroelectric plants. This indicator – Affected Biomass (Biomassa Afetada, or BA) – measures the quantity of dead fish (in kg) resulting from maintenance and operation of plants. In 2016 the total biomass affected was 1,771.25 kg. The internal limit established, due to these effects being inherent to the process, is 1,577


Note: Following the constitution of Aliança Geração de Energia S.A., by grouping of the Aimorés, Capim Branco I and II, Funil, Igarapava and Porto Estrela consortia, as from February 27, 2015, these components are no longer under the management of Cemig GT. As a result, the Affected Biomass limit for these plants (235 kg) was removed from the limit of 1,844 kg agreed in January 2015. Thus, the total for the Affected Biomass indicator does not include fish deaths in these plants. This situation continued to be valid in 2016 – with the Affected Biomass of these plants not being accounted in the total reported above.

Affected Biomass (kg)



Number of Fingerlings (thousands)



A total of 160,000 fingerlings were produced, totaling approximately 5 tons, which were released in 17 fish stocking events, with the participation of 846 people from local communities in 10 municipalities. In response to the growing interest by stakeholders, in the medium term the program aims to enhance monitoring of the efficiency of this handling method, putting the project on to a more scientific basis, with, for example, physical and genetic tags and markings on the fish that are released. 

**Note:** The figures for 2016 cover the fish releases for the calendar year (January through December). In previous reports the figures given were for August of one year through July of the next year (the 'fish repopulation year'). For comparability, the past figures have been re-reported on to the January-December basis.

Every two years the Peixe Vivo program publishes its report on achievements, projects in progress, and their results, and reports to stakeholders on the principal activities of interest in the period.

Nine research projects were carried out in 2016, with funds from Aneel and the Company itself; and 32 scientific papers have been published reporting on Peixe Vivo programs and activities.

Here are three examples of research projects currently under management by the program:

- Launch of the fourth book of the Peixe Vivo series: "Fishers of Knowledge" (Pescadores do Saber) – in a partnership with the Federal University of Lavras, created with the mission of dealing with the world environment, redeeming social values, respect for other people and the environment. This is available at Cemig's website
- Launch of the fifth book in the Peixe Vivo series: "Evaluation of the Risk of Fish Deaths in Hydroelectric Plants" (Avaliação de Risco de Morte de Peixes em Usinas Hidrelétricas). This is the result of a research project in partnership with the Federal University of Minas Gerais, since 2009, at the Cemig Group's hydroelectric plants. This is available at Cemig's website.
- The Fishermen's Landing Program: ('Programa de Desembarque Pesqueiro'). This study, begun in 2016, covers the hydroelectric plants of the upper Paraná River (the Jaguara plant), the Rio Grande (the São Simão plant) and the Paranaíba River (the Emborcação plant), and seeks to research and document the situation of fishermen, and fish populations, in the area of the plants. The study provides support to programs aiming to improve the fishing activity, and conserve fish populations.

For more information on Peixe Vivo Program projects, [click here](#).

## VEGETATION MANAGEMENT

EN11  
EN12  
EN13  
EN34  
EUT3

Handling of vegetation adjacent to electricity transport systems is an important subject for Cemig, because it is one of the main causes of outages in supply of its product, and thus adversely affects supply continuity indices, which the regulator, Aneel, employs as a measure of its performance. The Vegetation Handling Program is present in all the phases of Cemig D's projects and facilities – planning, implementation, maintenance and even decommissioning – to reduce or eliminate the negative effects of vegetation, and enhance the positive effects. The negative impacts are mainly on operational performance indicators, and in the form of higher operational costs, and penalties imposed by the regulator – which include indemnities to consumers whose electricity supply continuity indices have not met the regulatory levels. Externally, there is risk of affecting Cemig's image, from the need to intervene in forest formations in the countryside, and public trees in the urban environment – not always well understood by communities.

Positive effects of these efforts include joint initiatives with city halls to enhance professional tree culture practice, and help improve city environments.

At the end of 2016 Cemig Distribuição had 102,301 km of urban networks and 396,326 km of rural networks. These comprise conventional, protected and insulated networks – the first of these having the greatest potential for conflict with vegetation. Handling of vegetation basically consists of periodic interventions to maintain satisfactory co-existence with the electricity system. As well as safety, the main aim is to ensure the performance of the electricity system while maintaining the benefits that vegetation can provide. One of the most important activities in this process, and one which is in high demand, is tree pruning – this needs to be done by duly qualified people so as to provide real solutions to conflicts with the network and at the same time preserve the health of the tree. As well as pruning, handling of vegetation includes suppression of trees, assessment of risk of trees falling, and control of vegetation in the urban context.

In rural environments, handling consists basically of cutting any vegetation whose scale or growth pattern exposes the electricity system to the possibility of outages exceeding the limits established by the sector regulation. Inadequate handling can take the form of lack of preventive pruning and suppression of trees, pruning carried out outside the established standards of quality, or lack of analysis of risk of trees falling on the electrical network. In rural tree management the greatest risks are of inappropriate interventions in Conservation Areas, environmentally protected areas, or without the proper authorizations. The main opportunities related to the area are in development of environmental education projects, mostly on the subject of proper cultivation of trees in urban environments.

To develop these values, Cemig seeks to be involved in organizations related to the subject – it is, for example, a member of the Brazilian Urban Arborization Society, and the International Society of Arboriculture – including research institutions and municipal administrations, and organizes events such as the Cemig Urban Arborization Cycle, the 20<sup>th</sup> Brazilian Urban Arborization Congress, and educational events teaching proper use of power line pathways on rural properties.

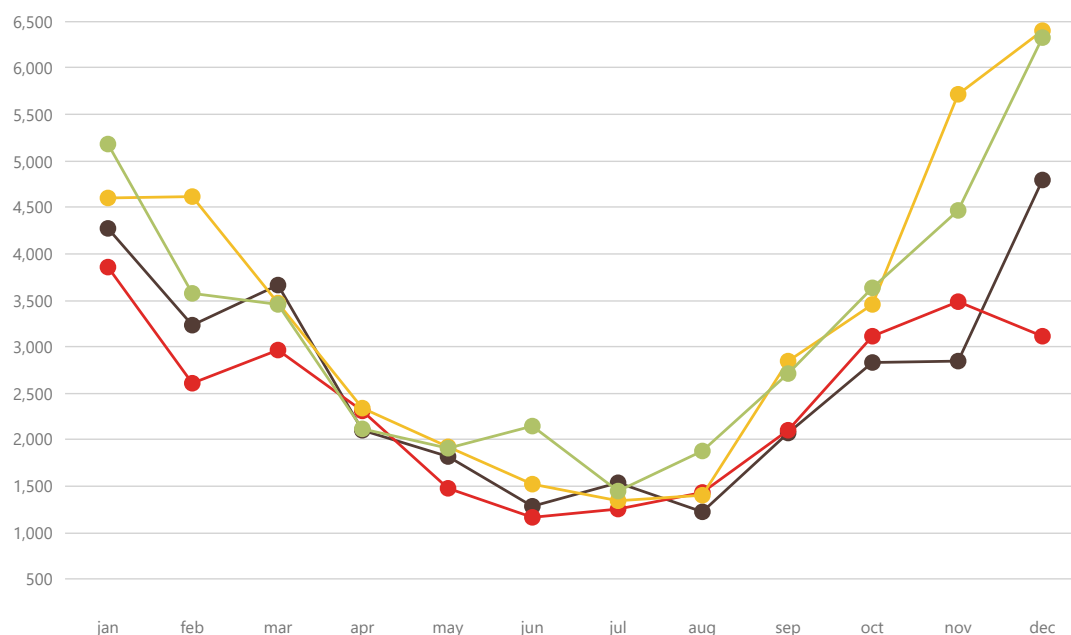
The approach taken to vegetation handling in general is one of preventive maintenance, designed to reduce the probability of failings or outage in the service provided. This involves periodic inspections of the electricity system and listings of the necessary maintenance services, including intervention in vegetation. The aim is to schedule the interventions to take place before any possible failure. They have a standardized frequency, based on knowledge of trees' behavior and response to interventions in both urban and rural environments.

Another aspect of the process, for both prevention and mitigation, is the use of distribution network engineering to reduce outages caused by trees, especially in urban contexts. The growing use of protected and insulated networks tends to reduce these problems, and the Company has adopted the minimum levels of compliance using protected networks at medium voltage and insulated networks and low voltage, in these environments. We are continually seeking to enhance the technology involved including medium-voltage networks with double-layer protection within the standard urban networks – they have much better tolerance of contact with earthed objects (such as trees), meaning less effects when this happens.

As for remedying the impacts caused by trees, the Company is preparing itself for more severe climatic events, increasing the degree of risk from vegetation. Through weather monitoring and forecast systems, it is possible to allocate electricity system repair teams to deal with damaged events in the system more rapidly, reducing time of outages.

Cemig has been compiling and analyzing the Sustained Simple Frequency (FSS) index for tree-related events in its medium and low voltage systems. The aim is to achieve a better characterization of the outages caused by trees and use this to orient efforts to reduce the adverse effects on continuity indicators.


FSS - Number of outages caused by trees



	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2013	4,260	3,221	3,655	2,095	1,807	1,277	1,526	1,215	2,072	2,828	2,836	4,782
2014	3,851	2,597	2,957	2,304	1,476	1,163	1,247	1,419	2,099	3,107	3,479	3,105
2015	4,586	4,615	3,464	2,332	1,911	1,507	1,340	1,398	2,833	3,448	5,710	6,390
2016	5,169	3,574	3,441	2,108	1,905	2,136	1,443	1,868	2,706	3,630	4,459	6,317

All the information demand received through the channels of communication is analyzed and sent to the most appropriate treatment. In 2016, 52,422 complaints and environmental complaints were processed, of which 51,088 were resolved. Among the environmental demands received, the main subjects were: tree touching the net, leakage/ contamination of insulating oil, noise caused by equipment in the network, environment, and others.

## The Mobile Tree Analysis Lab

This is the result of the R&D project “*Development of a Method for Diagnosis of Ill Health in Urban Trees as it Relates to Risk of Falling Trees and Electricity Damage*”. Use of the Mobile Tree Analysis Lab (Lamanar) began in 2015 in partnership with the Technology and Innovation Management Center (CGTI) 


Note: CGTI is a public-interest-registered NGO (an ‘OSCIP’) recognized by Brazil’s Justice Ministry and Science, Technology and Innovation Ministry. It has units in Campinas, Porto Velho, Recife and, the most recent, in Itajubá. For more information, [click here](#).

, and is seen as a tool for assessing the health of trees. It works inside a trailer equipped with devices for rapid analysis of trunks and branches, internal visualization of trunks by mechanical waves or electrical resistance, analysis of trees in the presence of wind, and visualization of roots under the ground through electromagnetic radar. It also has equipment for measurement of distances, heights and tree diameters.

The main objective of the laboratory is development and calibration of methods of assessment of tree health, supported by its instruments. The Lamanar can be used by city halls and research institutions, to enhance the method of assessment developed by R&D.

Using it, it is possible to better analyze the health of trees and monitor them over time, reducing the risks of occurrences in Cemig’s electricity system caused by falling trees, and help enhance the work of professionals in research, teaching and urban tree management.

## Riparian Vegetation Replacement

When a major reservoir is formed by a hydroelectric plant, a large perimeter is formed that usually does not have forests or developed vegetation. These waterside formations are adapted to a drier environment, rather than the newly humid soil caused by a higher water table and variations in the reservoir level . The new situation creates the need for planting, recovery and conservation of wild waterside vegetation around reservoirs, to maintain ecological processes.

In partnership with universities, Cemig has been working for almost 30 years on research supporting programs for implantation of waterside vegetation around its reservoirs. Through its R&D programs, it has sought to study and propose innovations to deal with the electricity sector’s technological challenges. Partnership with farmers around reservoirs has been a fundamental element of success in these actions. In 2016 a total of 46.46 hectares on the banks of Cemig’s reservoirs.

R&D project 484 worked in partnership with the Federal University of Ouro Preto (UFOP) over the years 2012–16 to assess the effectiveness and sustainability of the waterside vegetation at the Volta Grande hydroelectric plant, in conservation of ecological processes and biodiversity.

### The Volta Grande Hydroelectric Plant – a success story

The subject Cemig chose for its 2016 Biodiversity Report was based on R&D Project 484 – “Effectiveness and Sustainability of the Waterside Forests of the Volta Grande Hydroelectric Plant in Conservation of Ecologic Processes and Biodiversity”, a case study on that plant. The work also took the form of a book, Restoration and

Conservation of Waterside Forests in Hydroelectric Reservoirs, recently published in partnership with the Federal University of Ouro Preto.

The work identified the ecosystem services provided by the waterside vegetation of the reservoir. These include conservation of natural ecosystems, and a supply of 'goods and services', such as water and food. Forest not only provides wood, but also seeds, fruit, medicinal and ornamental plants, fibers and coloring materials. The riverside forests also shelter organisms with important functions in the maintenance of the environment; and have a significant influence on the climate, hydrological cycles, biodiversity, quality of the water and the atmosphere, and fertilization of the soil.

The main results obtained by R&D 484, which evaluated the last 30 years of the project of implantation of riparian forests in the Volta Grande HPP, allow the following conclusions:

- The reforested areas around the reservoir, although not recovered for the specific purpose of recovering biodiversity, ecological processes and ecosystem services, present today a set of elements that are important for their own "survival" and longevity;
- These areas harbor a relatively high biodiversity compared to other fragments in the same region, although the similarity of composition, structure and dynamics is below what would be considered ideal;
- The recovery process of riparian forests has already achieved several benefits, among them can be mentioned: erosion control, soil fertility maintenance and hydrological cycles;
- There is a marked increase in plant biodiversity and fauna, biodiversity of aquatic invertebrates, vegetation productivity and carbon sequestration, which brings direct benefits to human life;
- The presence of a greater number of species of fauna can be considered an important tool for the conservation and restoration of fragments of riparian forest due to the ecosystem services provided by these animals; and
- Studies have shown that several species of birds, mammals and invertebrates, such as ants and beetles, act as dispersers of fruits and seeds and as decomposers, contributing to the enrichment of the flora.

For more details on R&D project 484, see the [Prociliar's website](#).

[Click here](#) for Cemig's 2016 Biodiversity Report.

## CONSERVATION UNITS

To conserve biodiversity, Cemig maintains several areas of remaining forests with a high degree of conservation, which are important for the biomes where they are located. Three of these are classified as Private Natural Heritage Reserves (RPPNs) under Federal Law 9985/2000 (which instituted the National Conservation Units System, or SNUC); there are a further five, internally referred to as Environmental Stations, which were not included in any of the official categories of conservation unit.

CONSERVATION UNIT	PROJECT	LOCATION	AREA (HA)
RPPN Fartura	HPP Irapé	Capelinha/Minas Gerais	1,455
RPPN Galheiro	HPP Nova Ponte	Perdizes/Minas Gerais	2,847
RPPN Jacob	HPP Miranda	Nova Ponte/Minas Gerais	358
Igarapé Environmental Station	TPP Igarapé	Juatuba/Minas Gerais	105
Itutinga Environmental Station	HPP Itutinga	Itutinga/Minas Gerais	35
Peti Environmental Station	SHP Peti	São Gonçalo do Rio Abaixo/Minas Gerais	459
Machado Mineiro Environmental Station	SHP Machado Mineiro	Ninheira/Minas Gerais	3
Volta Grande Environmental Station	HPP Volta Grande	Conceição das Alagoas/Minas Gerais Miguelópolis/São Paulo State	391

For more information, see the Cemig's website.



## CLIMATE CHANGE DMA

EC2

EN18

GC7

SDG13

The global importance of debate on climate change underlines the special attention that Cemig dedicates to: consolidation of its matrix of energy sources – predominantly renewable; identification of the business risks and opportunities; and intensification of the quest for solutions for adaptation and mitigation of possible effects that might affect the Company's business

The involvement of senior management, and discussion about the key questions, make this activity more effective, as is shown by the establishment of voluntary targets for reduction of emissions, consumption of electricity, and power losses – even though Cemig already has low levels of greenhouse gas emissions.

Cemig identifies potential risks and opportunities for its businesses and seeks solutions to adapt to and mitigate possible effects that may affect it. The following are aspects of climate change that have influenced Cemig's strategy:

- Development of low-carbon business: Cemig has identified business opportunities and potential market advantage as a result of its low-carbon energy sources, identifying these opportunities as priority in: (i) implementation and renewal of plants generating from renewable sources in which Cemig already has expertise; and (ii) investment in new sources of energy, in particular through its interest in the company, Renova Energia.
- Regulatory changes: Cemig practices environmental due diligence (evaluation of carbon risk) when acquiring new assets, to assess the possible financial impact of the asset increasing its greenhouse gas emissions, in view of the possibility of internalization of costs of emissions as a result of new regulations.
- Need for mitigation of climate change: Although it has a low level of GHG emissions, Cemig makes efforts to reduce its emissions, through approaches which include its targets for reduction of emissions, for consumption of electricity and for electricity losses.
- Need to adapt to climate change: Cemig's generation plant has a low level of GHG emissions, because it is primarily hydroelectric – but as such it is subject to the consequences of climate change. As a result, it invests in improvement of its climate forecasting systems, and improvement of the infrastructure of its plants, transmission lines and distribution networks, to deal with the consequences of this type of event, and also in improvement of the forecasting of availability of water for its hydroelectric plants.

After acting, over the years, for efficient use of electricity by clients (of which one result is lower emissions of greenhouses gases), in 2002 Cemig established a wholly-owned subsidiary operating in energy efficiency, Efficientia(ESCO), which installs energy efficiency projects on the premises of Cemig consumers – mainly industrial clients. It develops energy efficiency projects for clients for improved technical and financial viability; implements plans for cogeneration and utility centers; offers consultancy to optimize industrial companies' energy supply matrix; offers in-person training and distance training on power management; and provides consultancy for ISO 50001 energy efficiency certification. Projects put in place by Efficientia in 2016 avoided emissions of 147.18 tCO<sub>2</sub>e/year in clients of the industrial and commercial sectors. For more about Efficientia see the [website](#).

Projects of Eficiência Energética included in Cemig's [Smart Power Program](#) (Programa Energia Inteligente) are important instruments in reducing indirect emissions by third parties, by reducing final consumers' electricity consumption through replacement of obsolete and high-consumption equipment, and environmental education initiatives. In 2016 these projects avoided issuance of 738 tCO<sub>2</sub>e.

The details on Cemig's initiatives relating to climate change can be found on the [Company's website](#).

Cemig has responded to the annual questionnaire issued by CDP – the London-based Carbon Disclosure Project – since 2007. The CDP is an international non-profit that encourages sustainable economies. The CDP's report is a rigorous survey of risks and opportunities for the Company's business arising from climate change, and its measures for monitoring and control. Cemig sees the CDP as a management tool, in a context of increasing production of information and consistent carbon management initiatives. For more details on the risks and opportunities, see Cemig's 2016 CDP report, in modules 5 and 6.

In 2016 CDP Latin America listed Cemig among the leading companies in treatment of climate change in Latin America, for the quality of information published to investors and the global market.

This is the fifth consecutive year in which CDP has recognized Cemig's leadership. The selection took into account the level of detail in the replies in relation to criteria such as climate change risk management and opportunities, commitment to mitigation, and initiatives to reduce greenhouse gas emissions. The better results indicate a high level of transparency in the publication of the information on the theme, providing investors with consistent content on Cemig's climate change management.

To access the CDP 2016 Report, use [this link](#).

Cemig was included at 24<sup>th</sup> position in the Top 100 Green Utilities ranking by the US consultancy organization Energy Intelligence. This ranks the 100 energy sector companies worldwide with the lowest rates of emission of greenhouse gases (CO<sub>2</sub>) and the largest installed capacities in power generation from renewable sources. The universe of companies analyzed represents more than half the world's power generation capacity.

In 2016 Cemig published its Greenhouse Gas Emissions Inventory, certified by an independent audit. The complete document can be seen on the [Cemig's website](#).

Cemig is participating in the Emissions Trading System Simulation (Simulação de Sistema de Comércio de Emissões), an initiative by the Sustainability Studies Center (GVces) by the São Paulo Business Administration School of the Getúlio Vargas Foundation (FGV EAESP). The project's aim is to create awareness in the business sector on how an emissions trading system works – as one of the principal economic instruments of policies to mitigate greenhouse gas emissions, already working in numerous countries. With this project, Cemig will have the opportunity to operate in the Simulation, based on defined rules and parameters, through the online trading platform of the Rio Janeiro Environmental Exchange (BVRio).

## CDM PROJECTS

EN19

Cemig has Clean Development Mechanism (CDM) projects at different stages of analysis for award of Certified Emission Reductions (CERs), involving large and small hydroelectric plants, and solar and wind power plants, as follows:

PROJECT	STATUS	ESTIMATE OF ANNUAL REDUCTION OF CO <sub>2</sub> e (t)	LINKS
SPC Guanhões, 4 SHPs, 44 MW	Registered	62,949	<a href="http://cdm.unfccc.int/Projects/DB/RI/NA1280831660.48/view">http://cdm.unfccc.int/Projects/DB/RI/NA1280831660.48/view</a>
Baguari Hydroelectric Plant, 140 MW	Registered	63,234	<a href="http://cdm.unfccc.int/Projects/DB/SG/S-UKL1282040767.96/view">http://cdm.unfccc.int/Projects/DB/SG/S-UKL1282040767.96/view</a>
Cachoeirão Hydroelectric Plant, 27 MW	Registered	23,444	<a href="http://cdm.unfccc.int/Projects/DB/RI/NA1305214649.79/view">http://cdm.unfccc.int/Projects/DB/RI/NA1305214649.79/view</a>
TerraForm Global wind farms (2009), 129 MW	Registered	117,424	<a href="http://cdm.unfccc.int/Projects/DB/LR/QA%20Ltd1349355823.93/view">http://cdm.unfccc.int/Projects/DB/LR/QA%20Ltd1349355823.93/view</a>
Settesolar Solar Plant, 3 MW	Registered	942	<a href="http://cdm.unfccc.int/Projects/DB/R/WTUV1356098187.07/view">http://cdm.unfccc.int/Projects/DB/R/WTUV1356098187.07/view</a>
Renova wind farms (2010), 162 MW	Registered	166,924	<a href="http://cdm.unfccc.int/Projects/DB/BV/QI1350473592.78/view">http://cdm.unfccc.int/Projects/DB/BV/QI1350473592.78/view</a>
Pipoca Small Hydro Plant, 20 MW	Registered	17,051	<a href="http://cdm.unfccc.int/Projects/DB/RI/NA1339141027.8/view">http://cdm.unfccc.int/Projects/DB/RI/NA1339141027.8/view</a>
Paracambi Small Hydro Plant, 25 MW	Registered	33,993	<a href="http://cdm.unfccc.int/Projects/DB/RI/NA1392324439.94/view">http://cdm.unfccc.int/Projects/DB/RI/NA1392324439.94/view</a>
Santo Antônio Hydroelectric Plant: 3,568 MW	Registered	4,015,196	<a href="http://cdm.unfccc.int/Projects/DB/PJ/R%20CDM1356613142.79/view">http://cdm.unfccc.int/Projects/DB/PJ/R%20CDM1356613142.79/view</a>
TerraForm Global wind farms (2009), 164 MW	In process of registration	150,801	<a href="http://cdm.unfccc.int/Projects/Validation/DB/XMPL2JRB0KUCLA2A31XXO20P0YLASJ/view.html">http://cdm.unfccc.int/Projects/Validation/DB/XMPL2JRB0KUCLA2A31XXO20P0YLASJ/view.html</a>
Renova wind farms (2011), 213 MW	In process of registration	215,666	<a href="http://cdm.unfccc.int/Projects/Validation/DB/G5GTD3EVZK265RRN4LQK9QF3AK0W5K/view.html">http://cdm.unfccc.int/Projects/Validation/DB/G5GTD3EVZK265RRN4LQK9QF3AK0W5K/view.html</a>

## EMISSIONS

In 2016 Cemig's direct emissions totaled 15,462 tCO<sub>2</sub>e – and were 0.2% of the Company's total Greenhouse Gas (GHG) emissions. Scope 1 emissions were lower than in 2015, mainly due to the non-dispatch of the Igarapé Thermal Plant for power generation in 2016, to the end of the commercial operation of Ipatinga Thermal Plant, whose contract with Usiminas was terminated in December 2014, as well as to the shorter operating time of the Barreiro Thermal Plant, which operated 713.95 hours in 2016 compared to 6,641.62 hours in 2015, because of the shutdown of one of the blast furnaces by Vallourec. The Cemig - Vallourec contract for the operation of the Barreiro plant was terminated in December 2016.

This is a list of Cemig's Scope 1 greenhouse gas emission sources:

EN15

EN16

EN17

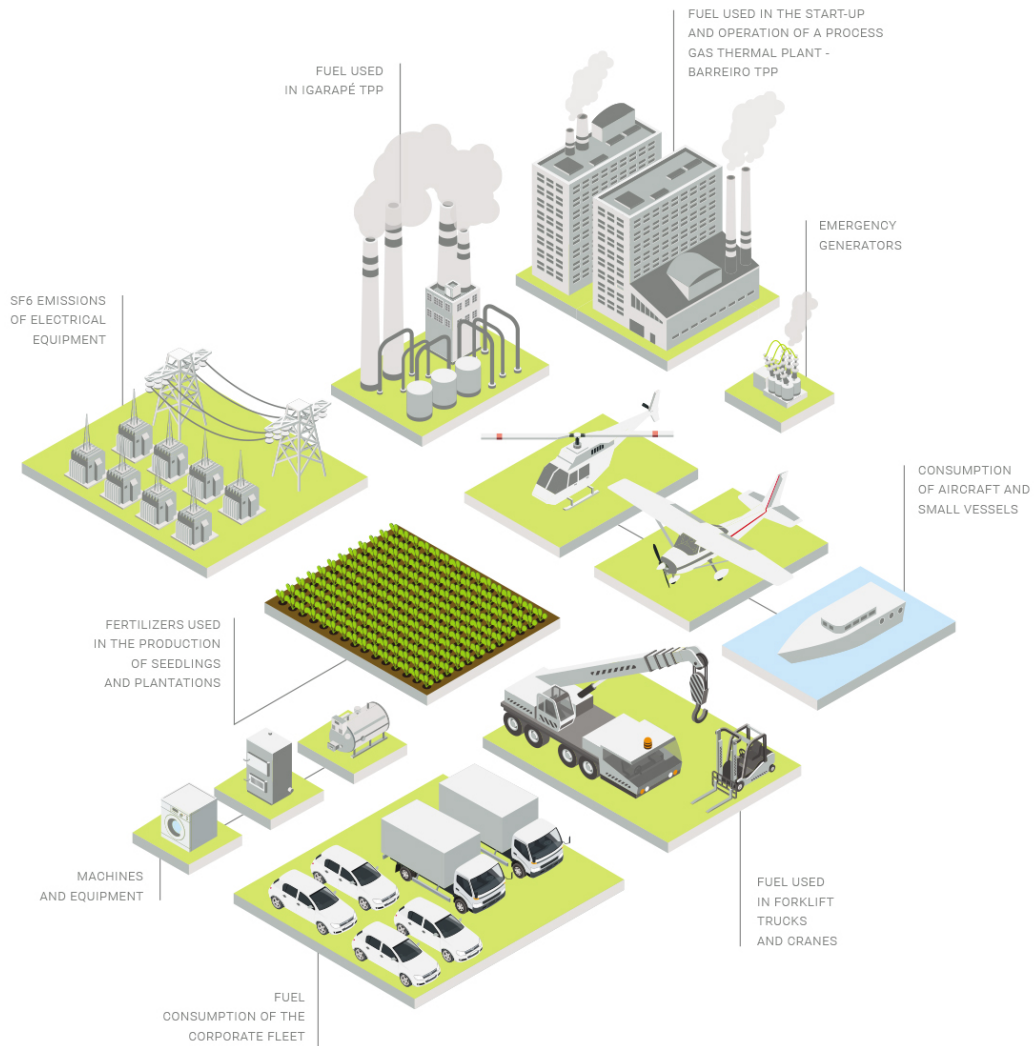
EN18

EN20

EN21

EN30

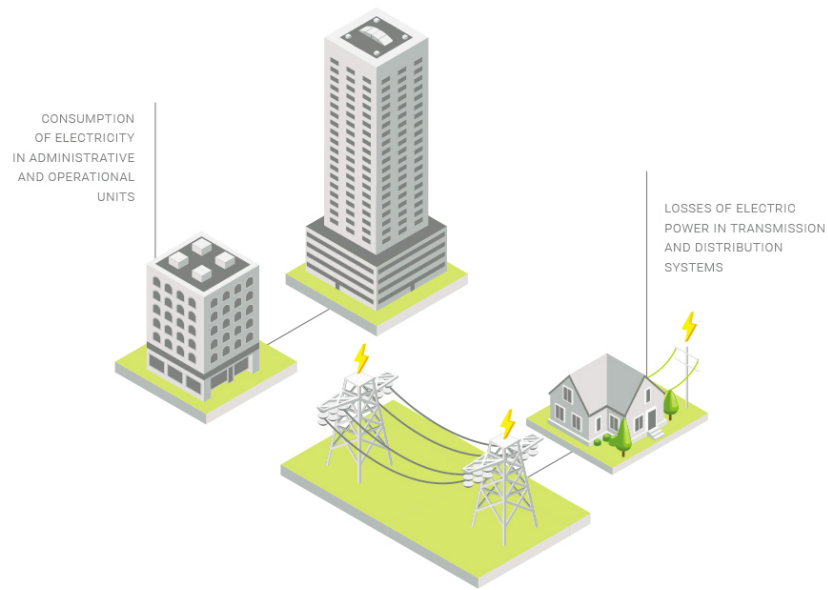
## SCOPE 1 SOURCES OF EMISSION



Cemig's Scope 2 – indirect emissions - in 2016 totaled 552,805 tCO<sub>2e</sub>, or 8.3% of the Company's total emissions. Of this total, 99.4% is attributed to energy losses in the power transmission and distribution systems. Note that Scope 2 is strongly influenced by the emission factor attributed to the national grid, which was 34.3% lower in 2016, at 0.1244 tCO<sub>2e</sub>/MWh, compared to 0.0817 tCO<sub>2e</sub>/MWh in the previous year.

This list shows Cemig's Scope 2 greenhouse gas emission sources:

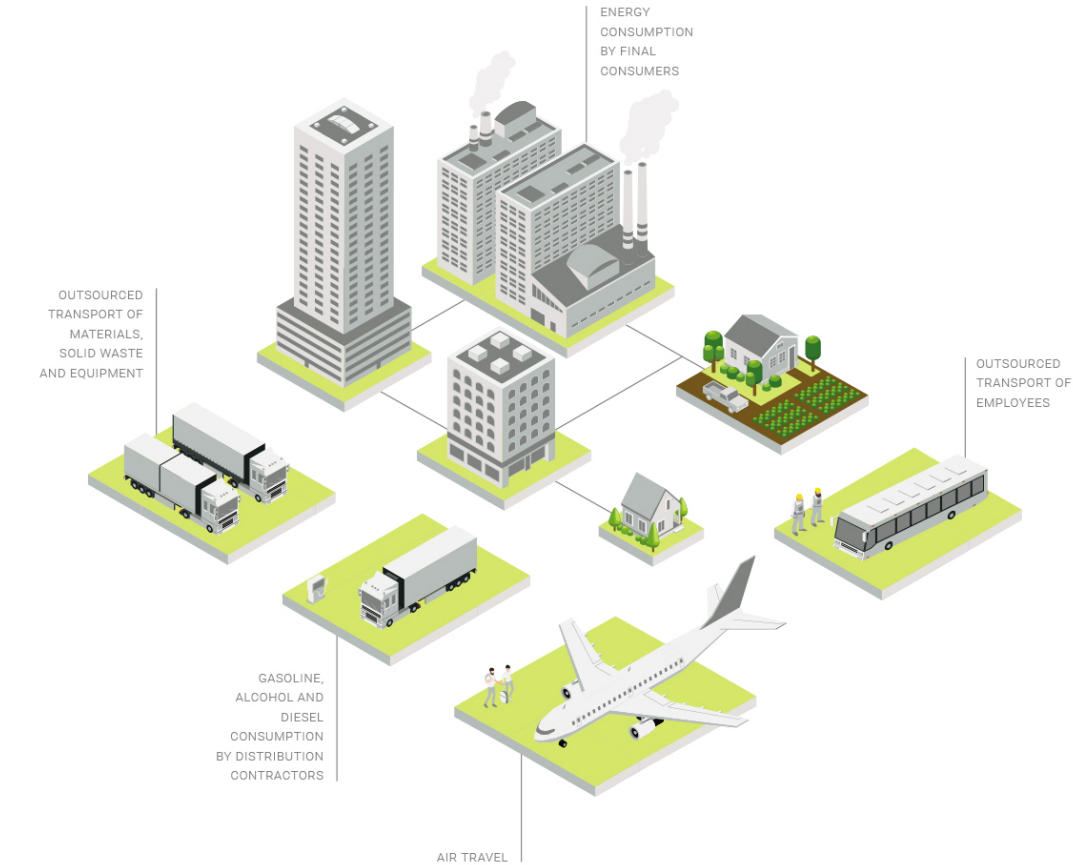
## SCOPE 2 SOURCES OF EMISSION



Cemig's largest sources of emissions are principally in Scope 3: emissions that derive from the Company's activities but occur in sources that it neither owns nor controls. The main source of emissions calculated in Scope 3 is electricity consumption by Cemig's end-consumers. In 2016 with total sales 4.2% lower, Cemig's indirect emissions were 37.1% lower than in 2015. This trend was also highlighted by the lower emission factor of the national grid used for these calculations.

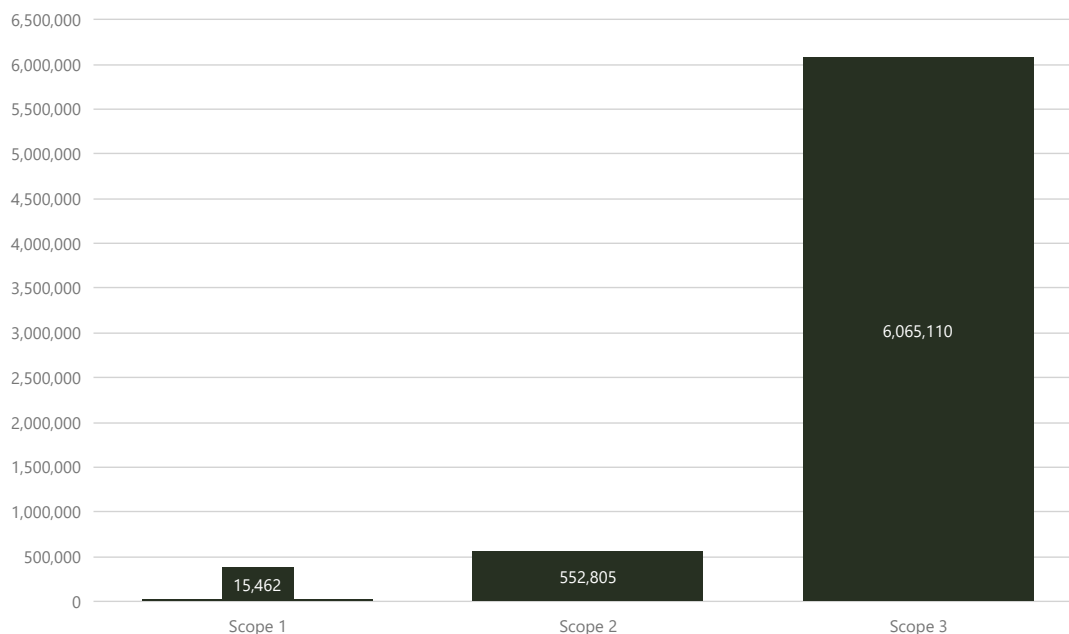
This list shows Cemig's Scope 3 greenhouse gas emission sources:

**SCOPE 3**  
**SOURCES OF EMISSION**



This chart indicates Cemig’s total direct and indirect greenhouse gas emissions in 2016:

## Total emissions by scope (tCO<sub>2</sub>e)




For more information about Cemig's GHG emissions, [click here](#) to see the emissions inventory.

## Emissions of sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>)

Note: SO<sub>2</sub> e NO<sub>x</sub> are gases that cause acid rain. The values for SO<sub>2</sub> and NO<sub>x</sub> shown in the table of Total Emissions (t) include emissions generated by vehicles.

arise

from burning of fuels in the thermoelectric generation plants, and in vehicles. The reductions of 91.1% in SO<sub>2</sub> emissions, and of 77.4% in NO<sub>x</sub> emissions, by comparison with 2015, mainly reflect non-dispatching of the Igarapé thermal plant, termination of commercial operation of the Ipatinga thermal plant (the contract with Usiminas for this plant expired in December 2014) and also the lower total time of operation of the Barreiro thermal plant: 713.95 hours in 2016 vs. 6,641 hours in 2015.

TOTAL EMISSIONS (t)				
Year	SO <sub>2</sub>	NO <sub>x</sub>	PM 	
2012	551	141	23	
2013	963	177	87	
2014	3,049	251	387	
2015	636	32	90	
2016	56	7	0.4	

Note: Particulate matter - data from Igarapé Thermal Plant and vehicles.

Emissions of particulate matter (PM) come from the Igarapé Thermal Plant and vehicles. In 2016, two improvements in the Igarapé Thermal Plant that prepare it for a more efficient operation can be highlighted: Completion of the installation of an Electrostatic Precipitator and Modernization of Regenerative Air Heaters (LUVOS).

## OTHER INFORMATION

## AWARDS AND RECOGNITIONS IN 2016

- Listed in the Dow Jones Sustainability Index (DJSI) for the 17<sup>th</sup> year running;
- 6<sup>th</sup> consecutive year in the Dow Jones Emerging Markets Index;
- Selected for inclusion in the ICO2 Index, of the BM&FBovespa, for the 7<sup>th</sup> consecutive year;
- 12<sup>th</sup> consecutive year in the ISE Corporate Sustainability Index (BM&FBovespa);
- Rated one of 10 Brazilian companies with the best climate change practices in Latin America by the Carbon Disclosure Project (CDP);
- Selected as one of the best Emerging Market companies by the criteria of the Euronext Vigeo Emerging 70 index;
- The Cemig Group company Taesa (*Transmissora Aliança de Energia Elétrica S.A.*) was chosen as the best company in the Brazilian electricity sector by the *Valor 1000* annual publication of *Valor Econômico* newspaper for the second consecutive year;
- Credit rating by Standard & Poor's of B+ on global scale and brBBB+ on Brazilian scale, with outlook stable for both;
- Selected by Sustainalytics (Netherlands);
- Designated 'Prime' by Oekom Research (Germany);
- Selected for the MSCI Global Sustainability Indexes;
- Top 100 Green Utilities – Cemig was included in 24<sup>th</sup> position in this ranking published by the US consultancy company Energy Intelligence, which lists the 100 energy companies worldwide with the lowest rates of greenhouse gas emissions (CO<sub>2</sub>) and highest installed capacities of generation from renewable sources; and
- Selected for inclusion in the FTSE4Good Emerging Index.

## SOCIAL STATEMENT





1) CALCULATION BASIS	2016			2015		
	AMOUNT (R\$ '000)			AMOUNT (R\$ '000)		
Net revenue (NR)	18,772,656			21,292,211		
Operational profit (OP)	2,373,279			4,119,53		
Gross payroll (GP)	1,333,171			1,258,081		
2) INTERNAL SOCIAL INDICATORS	AMOUNT (R\$ '000)	% OF GP	% OF NR	AMOUNT (R\$ '000)	% OF GP	% OF NR
Food	97,341	7.21	0.52	75,115	7.23	0.41
Compulsory social charges	342,269	25.36	1.82	306,272	26.84	1.51
Private Pension Plan	96,994	7.19	0.52	83,669	7.16	0.40
Health	56,615	4.19	0.30	46,145	4.04	0.23
Safety and medicine at work	26,119	1.93	0.14	23,483	1.95	0.11
Education	187	0.01	-	896	0.05	-
Culture	-	-	-	-	-	-
Professional training and development	23,589	1.75	0.13	35,831	3.42	0.19
Nurseries or assistance-nurseries	3,034	0.22	0.02	2,477	0.20	0.01
Share in the profits or results	26,480	1.96	0.14	130,198	21.73	1.22
Others	14,541	1.08	0.08	17,112	1.52	0.09
Total – Internal Social Indicators	687,170	50.90	3.67	721,198	74.14	4.17
3) EXTERNAL SOCIAL INDICATORS	AMOUNT (R\$ '000)	% OF GP	% OF NR	AMOUNT (R\$ '000)	% OF GP	% OF NR
Education	2,300	0.10	0.01	455	-	-
Culture	10,985	0.46	0.06	19,035	0.11	0.14
Sports	1,222	0.05	0.01			
Other Donations/S	2,131	0.09	0.01	54,222	0.27	0.34

ubsidies/ASIN Project/						
Total of the Contribution s for Society	16,638	0.70	0.09	73,712	0.38	0.48
Taxes (excluding social charges)	10,053,044	423.59	53.55	12,017,068	26.36	33.95
Total – External Social Indicators	10,069,682	424.29	53.64	12,090,780	26.74	34.43
4) ENVIRONMENTAL INDICATORS	AMOUNT (R\$ '000)	% OF GP	% OF NR	AMOUNT (R\$ '000)	% OF GP	% OF NR
Related with the operation of the company	52,116	2.20	0.28	53,840	0.21	0.27
In Programs and/or external projects	-	2.20	-			
Total of the Investments in the Environment	52,116	2.20	0.28	53,840	0.21	0.27
The establishment of annual goals to minimize residues, the general consumption in the production/operation and to increase the efficiency in the use of natural resources, the company:	(X) it doesn't have goals ( ) complies 0 to 50%	(X) it doesn't have goals ( ) complies 0 to 50%	(X) it doesn't have goals ( ) complies 0 to 50%	(X) it doesn't have goals ( ) complies 0 to 50%	(X) it doesn't have goals ( ) complies 0 to 50%	(X) it doesn't have goals ( ) complies 0 to 50%
5) INDICATORS OF THE FUNCTIONAL BODY	2016		2015			
No. of employees at the end of the period			7,119		7,860	
No. of admissions during the period			77		22	

No. of third-party employees	269	ND
No. of interns	277	326
Employee education	-	-
- Superior and university extension	1,553	1,654
- Secondary level	5,513	6,136
- Primary level	53	70
No. of employee above the age of 45	3,779	3,568
No. of women employees in the company	939	1,073
% of managing positions filled by women	36.09	3.1
No. of black employees in the company	340	2,528
% of managing positions filled by black employees	1.17	1.5
No. of bearers of deficiencies or special needs	192	-
6) INFORMATION RELEVANT TO THE EXERCISE OF CORPORATE CITIZENSHIP	2016	TARGET FOR 2016
Ratio of highest to lowest compensation	26,44	None

Total  
number of  
work  
accidents  
with  
employees

255

0

The social and environmental projects developed by the company were defined by:	<input type="checkbox"/> directors	<input checked="" type="checkbox"/> directors and managers	<input type="checkbox"/> All employees	<input type="checkbox"/> directors	<input checked="" type="checkbox"/> directors and managers	<input type="checkbox"/> all employees
Safety and health standards in the workplace were defined by::	<input type="checkbox"/> directors and managers	<input checked="" type="checkbox"/> all employees	<input type="checkbox"/> All + CIPA	<input type="checkbox"/> direção e gerências	<input checked="" type="checkbox"/> All employees	<input type="checkbox"/> All '+ CIPA
As regards freedom of association, the right to collective bargaining and the internal representation of workers, the company:	<input type="checkbox"/> doesn't get involved	<input checked="" type="checkbox"/> follows the ILO guidelines	<input type="checkbox"/> encourages and follows ILO	<input type="checkbox"/> will not get involved	<input checked="" type="checkbox"/> will follow ILO guidelines	<input type="checkbox"/> will encourage and follow ILO
The company pension plan covers:	<input type="checkbox"/> directors	<input type="checkbox"/> directors and managers	<input checked="" type="checkbox"/> All employees	<input type="checkbox"/> direção	<input type="checkbox"/> Directors and managers	<input checked="" type="checkbox"/> All employees
The profit-sharing program covers:	<input type="checkbox"/> directors	<input type="checkbox"/> directors and managers	<input checked="" type="checkbox"/> All employees	<input type="checkbox"/> direção	<input type="checkbox"/> Directors and managers	<input checked="" type="checkbox"/> All employees
In selecting suppliers, the company's standards of ethics and social and environmental responsibility:	<input type="checkbox"/> are not considered	<input type="checkbox"/> are suggested	<input checked="" type="checkbox"/> are required	<input type="checkbox"/> will not be considered	<input type="checkbox"/> will be suggested	<input checked="" type="checkbox"/> will be required
As to employees' participation in voluntary work programs, the company:	<input type="checkbox"/> doesn't get involved	<input type="checkbox"/> supports	<input checked="" type="checkbox"/> organizes and encourages	<input type="checkbox"/> will not get involved	<input type="checkbox"/> will support	<input checked="" type="checkbox"/> will organize and encourage
Total number of consumer complaints	In the company ___N.A.____	Via Procon ___ N.A.____	In the courts ___ N.A.____	In the company ___N.A.____	Via Procon ___ N.A.____	In the courts ___ N.A.____

and criticisms						
% of complaints and criticisms met or solved:	In the company N.A.____%	Via Procon N.A.____%	In the courts N.A.____%	In the company N.A.____%	Via Procon N.A.____%	In the courts N.A.____%
Total added value distributable (R\$ '000)	In 2016: 14,780,152			In 2015: 18,165,116		
Distribution of added value (DVA)	68.02% government 3.95% shareholders 9.00% employees 18.49% Outsourced			64.9% government 6.92% shareholders 8.78% employees 13.54% Outsourced		

## 7) OTHER INFORMATION

Investments in Environmental issues	R\$ 52.1 million	R\$ 53.8 million
Water quality monitoring of reservoirs	42 reservoirs and 180 physical, chemical and biological data collection stations	42 reservoirs and 180 physical, chemical and biological data collection stations
Wastes	45.8 thousand tons	48.3 thousand tons
Mineral oil regenerated by the company	322.8 tons	362.1 tons
Earnings from sale of wastes	R\$ 11.1 million	R\$ 12.8 million

## GRI INDEX



GRI INDICATORS		INFO LOCATION / OBSERVATIONS	INFORMATION VERIFIED	IMPACTS	
				INTERNAL	EXTERNAL
G4	Strategy and Analysis				
G4-1	Provide a statement from the most senior decision-maker of the organization (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and the organization's strategy for addressing sustainability.	Message from management	No	x	x
G4-2	Provide a description of key impacts, risks, and opportunities.	Risk Management	Yes	x	x
Organizational Profile					
G4-3	Report the name of the organization.	Company's Profile	Yes	x	x
G4-4	Report the primary brands, products, and services.	Company's Profile	Yes	x	x
G4-5	Report the location of the organization's headquarters.	Credits	Yes	x	x
G4-6	Report the number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report.	All Cemig operations are located inside country limits, there are no operations abroad.	Yes	x	x
G4-7	Report the nature of ownership and legal form.	Corporate Governance	Yes	x	x
G4-8	Report the markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries).	Energy Supply	Yes	x	x
G4-9	Report the scale of the organization.	Financial Results	No	x	x
EU1	Installed capacity, broken down by primary energy source and by regulatory regime	Environment Management / Energy	No	-	-

EU2	Net energy output broken down by primary energy source and by regulatory regime	Environment Management / Energy	No	x	x
EU3	Number of residential, industrial, institutional and commercial customer accounts	Energy Supply	No	x	-
EU4	Length of above and underground transmission and distribution lines by regulatory regime	Table Main Cemig Indicators	No	x	x
EU5	Allocation of CO <sub>2</sub> emissions allowances or equivalent, broken down by Carbon Trading Framework	There was no funding through carbon credit trading.	-	-	-

G4-10	Report the total number of employees and workforce by employment contract, employment type, region and gender.	People Management / Staff Profile	Yes	x	x
G4-11	Report the percentage of total employees covered by collective bargaining agreements.	People Management / Labor and Union Practices	Yes	x	-
G4-12	Describe the organization's supply chain	Internally, Cemig understands by chain of suppliers its Generation, Transmission and Distribution operations (core supply chain). However, other agents that are not part of Cemig Group, such as the suppliers of goods and services that operate upstream and downstream of the core supply chain, must still be considered. All these agents are covered in this report. (See chapter Suppliers)	Yes	x	-
G4-13	Report any significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain.	There was no significant changes in the period covered by this report	Yes	x	x
G4-14	Report whether and how the	Risk Management	Yes	x	x

	precautionary approach or principle is addressed by the organization.				
G4-15	List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses.	About this report	Yes	x	x
G4-16	List memberships of associations (such as industry associations) and national or international advocacy organizations in which the organization: Holds a position on the governance body; Participates in projects or committees; Provides substantive funding beyond routine membership dues; Views membership as strategic	Cemig / Participation in associations	Yes	x	x
Identified Material Aspects and Boundaries					
G4-17	List all entities included in the organization's consolidated financial statements or equivalent documents; Report whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report.	Financial Results	Yes	x	x
G4-18	Explain the process for defining the report content and the Aspect Boundaries; Explain how the organization has implemented the Reporting Principles for Defining Report Content.	Report Limits	Yes	x	x
G4-19	List all the material Aspects identified in the process for defining report content.	Materiality Matrix	Yes	x	x
G4-20	For each material	Materiality Matrix	Yes	x	x



	aspect, report your Aspect Limit within the organization.				
G4-21	For each material aspect, report your Aspect Limit without the organization.	Materiality Matrix	Yes	x	x
G4-22	Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements.	Fish care / Change in the calculation period of the fish introduction activities - from season to civil calendar. Reason: alignment with other information of this report.	Yes	x	-
G4-23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries.	There were no changes regarding previous reporting periods	Yes	x	-
Stakeholder Engagement					
G4-24	Provide a list of stakeholder groups engaged by the organization.	Materiality Matrix	Yes	x	-
G4-25	Report the basis for identification and selection of stakeholders with whom to engage.	Materiality Matrix	Yes	x	-
G4-26	Report the organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process.	Materiality Matrix	Yes	x	-
G4-27	Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholder groups that raised each of the key topics and concerns.	Materiality Matrix	Yes	x	x

Report Profile						
G4-28	Reporting period (such as fiscal or calendar year) for information provided.	Materiality Matrix	Yes	-	-	
G4-29	Date of most recent previous report (if any).	Materiality Matrix	Yes	-	-	
G4-30	Reporting cycle (such as annual, biennial).	Materiality Matrix	Yes	-	-	
G4-31	Provide the contact point for questions regarding the report or its contents.	Credits	No	-		x
G4-32	Report the 'in accordance' option the organization has chosen; Report the GRI Content Index for the chosen option; Report the reference to the External Assurance Report, if the report has been externally assured. GRI recommends the use of external assurance but it is not a requirement to be 'in accordance' with the Guidelines.	Materiality Matrix	Yes	x		x
G4-33	Report the organization's policy and current practice with regard to seeking external assurance for the report	About this report	Yes	x		x
Governance						
G4-34	Report the governance structure of the organization, including committees of the highest governance body. Identify any committees responsible for decision-making on economic, environmental and social impacts.	Corporate Governance	No	x		x
G4-35	Report the process for delegating authority for economic, environmental and social topics from the highest governance body to senior executives and other employees.	Corporate Governance	No	x		-
G4-37	Report processes for consultation between	Corporate Governance	No	x		x

	stakeholders and the highest governance body on economic, environmental and social topics. If consultation is delegated, describe to whom and any feedback processes to the highest governance body.				
G4-39	Report whether the Chair of the highest governance body is also an executive officer (and, if so, his or her function within the organization's management and the reasons for this arrangement).	This does not apply to Cemig's governance model.	-	-	-
G4-40	Report the nomination and selection processes for the highest governance body and its committees, and the criteria used for nominating and selecting highest governance body members.	Corporate Governance	No	x	x
G4-41	Report processes for the highest governance body to ensure conflicts of interest are avoided and managed. Report whether conflicts of interest are disclosed to stakeholders.	Corporate Governance	No	x	x
G4-45	Report the highest governance body's role in the identification and management of economic, environmental and social impacts, risks, and opportunities. Include the highest governance body's role in the implementation of due diligence processes. Report whether stakeholder consultation is used to support the highest governance body's identification and management of economic, environmental and social impacts, risks, and opportunities.	Corporate Governance	No	x	x
G4-46	Report the highest governance body's role in reviewing the	Corporate Governance	No	x	x

	effectiveness of the organization's risk management processes for economic, environmental and social topics.				
G4-47	Report the frequency of the highest governance body's review of economic, environmental and social impacts, risks, and opportunities.	Risk Management	Yes	x	-
G4-51	Report the remuneration policies for the highest governance body and senior executives for the below types of remuneration Report how performance criteria in the remuneration policy relate to the highest governance body's and senior executives' economic, environmental and social objectives.	Corporate Governance	No	x	-
Ethics and Integrity					
G4-56	Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics.	Cemig / Ethical conduct	Yes	x	x
G4-57	Report the internal and external mechanisms for seeking advice on ethical and lawful behavior, and matters related to organizational integrity (e.g., ombudsman).	Cemig / Ethical conduct	Yes	x	x
G4-58	Report the internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organizational integrity, such as escalation through line management, whistleblowing mechanisms or hotlines.	Cemig / Ethical conduct	Yes	x	x
Management approach and performance indicators					
Economic Performance					

Electric utilities sector-specific disclosures on management approach					
Availability and Reliability					
EU6	Planning to ensure short and long-term electricity availability and reliability (Information)	Strategy / Concessions and Investments	No	x	x
Aspect: Demand-side management (DSM)					
EU7	Demand-side management programs including residential, commercial and industrial programs (Information)	Research & Development	Yes	x	x
Aspect: Research and Development					
EU8	Research and development activity, and expenditure aimed at providing reliable electricity and promoting sustainable development. (Information)	Research & Development	Yes	x	x
Aspect: Decommissioning of plants					
EU9	Provisions for decommissioning of nuclear power plants (Information)	Not applicable.	-	-	-
Economic Performance Indicators					
Aspect: Availability and Reliability					
EU10	Planned capacity against projected electricity demand over the long-term, broken down by energy source and regulatory regime	Strategy / Concessions and Investments	No	x	x
Aspect: System Efficiency					
EU11	Average generation efficiency of thermal plants by energy source and by regulatory regime.	Environment Management / Energy	No	x	x
EU12	Transmission and distribution losses as a percentage of total energy	Energy supply / Energy Balance	No	x	x
Economic Performance					
Aspect: Economic Performance					
EC1	Direct economic value generated and distributed	Financial Results	No	x	x
EC2	Financial	Climate Changes	Yes	x	x

	implications and other risks and opportunities for the organization's activities due to climate change.				
EC3	Coverage of the organization's defined benefit plan obligations.	People Management	Yes	x	-
EC4	Financial assistance received from government	Research & Development	Yes	x	x
Aspect: Market Presence					
EC5	Ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation	People Management	Yes	x	-
EC6	Proportion of senior management hired from the local community at significant locations of operation	Cemig has no specific standard for hiring local employees. As it is a mixed capital company, contracting can only be accomplished through public tender.	-	-	-
Aspect: Indirect Economic Impacts					
EC7	Development and impact of infrastructure investments and services supported	Concessions and Investments	No	x	x
Aspect: Purchasing Processes					
EC9	Proportion of spending on local suppliers at significant locations of operation	Suppliers	No	-	x
Environmental Performance					
Environmental Performance Indicators					
Aspect: Materials					
	Materials used by weight or volume.				
EN1	Note about this indicator: Report in-use inventory of solid and liquid, high level and low level PCBs in equipment.	Environment Management / Materials	No	x	x
EN2	Percentage of materials used that are recycled input materials.	Environment management / Waste	No	x	x

Aspect: Energy

EN3	Energy consumption within the organization.	Environment / Energy	Yes, In the independent verification of the GHG inventory.	x	-
EN5	Energy intensity.	The energy intensity in the product was 0.00381987 in 2016.	-	x	x
EN6	Reductions in energy consumption	Environment Management / Energy	No	x	x
EN7	Reductions in energy consumption demands for products and services	Research & Development	No	x	x

Aspect: Water

	Total water withdrawal by source				
EN8	Note about this indicator: Report total amount of water used for processing, cooling and consumption in thermonuclear plants, including the use of water in ash handling.	Water Resoruces	Yes	x	x
EN9	Water sources significantly affected by withdrawal of water.	Water Resoruces	Yes	-	x
EN10	Percentage and total volume of water recycled and reused.	Water Resources. Obs.: the amount of water recycled or reused by Cemig is insignificant.	Yes	x	x

Aspect: Biodiversity

EN11	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Biodiversity / Vegetation Management	Yes	x	x
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	Biodiversity / Vegetation Management	Yes	x	x

Note about this indicator: Include: Maintenance of transmission line corridors; fragmentation and insulation, and impacts of thermal disposal.

EU13	Biodiversity of offset habitats compared to the biodiversity of the affected areas.		Yes	x	x
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EN13	Habitat protected or restored	Biodiversity / Vegetation Management	Yes	x	x
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Aspect: Emissions					
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EN15	Direct greenhouse gas (GHG) emissions (Scope 1)				
	Note about this indicator: Report CO <sub>2</sub> emissions per MW/h by country or regulatory regime, for: Net generation from total generating capacity; Net generation from total fossil fuel generation; Net delivery estimate for end users. Include emissions from own generation, as well as gross purchased energy, including line losses.	Climate Changes / Emissions	Yes, In the independent verification of the GHG inventory.	x	x

EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2).				
	Note about this indicator: Report CO <sub>2</sub> emissions per MW/h by country or regulatory regime, for: Net generation from total generating capacity; Net generation from total fossil fuel generation; Net delivery estimate for end users. Include emissions from own generation, as well as gross purchased energy, including line losses.	Climate Changes / Emissions	Yes, In the independent verification of the GHG inventory.	x	x

EN17	Other indirect greenhouse gas (GHG) emissions (Scope 3).	Climate Changes / Emissions	Yes, In the independent verification of the GHG inventory.	x	x
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EN18	Greenhouse gas (GHG) emissions intensity	Climate Changes / Emissions	Yes, In the independent	x	x
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			verification of the GHG inventory.		
EN19	Reduction of greenhouse gas (GHG) emissions	Climate Changes / Emissions	No	x	x
EN20	Emissions of ozone- depleting substances (ODS)	Climate Changes / Emissions	Yes, In the independent verification of the GHG inventory.	x	x
EN21	N <sub>2</sub> O, SO <sub>2</sub> , and other significant air emissions by type and weight.  Note about this indicator: Report emissions per MWh net generation.	Climate Changes / Emissions	Yes, In the independent verification of the GHG inventory.	x	x
Aspect: Effluents and Waste					
EN22	Total water discharge by quality and destination  Note about this indicator: include thermal discharge	Water Resources / Water Consumption and Effluents Generation	Yes	-	x
EN23	Total weight of waste by type and disposal method.  Note about this indicator: Include PCB waste. Report on nuclear waste using IAEA definitions and protocols. Report mass and activity of spent nuclear fuel sent for processing and reprocessing per year. In addition, report radioactive waste produced per net MWh nuclear generation per year. Report (in terms of mass and activity) low/intermediate level waste and high level waste separately, based on IAEA radioactive waste classification. This should also include waste produced from reprocessing activities, where data is available.	Water Resources / Waste	Yes, In the independent verification of the GHG inventory.	x	x
EN24	Total number and volume of significant spills	Environment management / Waste	No	x	x
EN25	Weight of transported, imported, exported,	Cemig does not engage in the	-	-	-

	or treated waste deemed hazardous under the terms of the Basel Convention <sup>2</sup> Annex I, II, III, and VIII, and percentage of transported waste shipped internationally	international transport of waste.			
EN26	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.	Water Resources	Yes	x	x
Aspect: Products and Services					
EN27	Extent of impact mitigation of environmental impacts of products and services	Cemig believes that the impacts are not significant. The relevant existing projects are related to biodiversity and have been reported in the indicator EN12.	-	-	x
EN28	Percentage of products sold and their packaging materials that are reclaimed by category.	The Company's main product is electricity, which due to its nature does not require packaging.	-	-	-
Aspect: Conformity					
EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	Environment Management / Environmental Compliance	No	x	-
Aspect: Transportation					
EN30	Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce	Environment Management / Energy and Climate Change / Emissions	Yes, In the independent verification of the GHG inventory.	x	x
Aspect: General					
EN31	Total environmental protection expenditures and investments by type.	Environment Management / Resources Invested	No	x	-
Aspect: Environmental Assessment of Suppliers					

EN32	Percentage of new suppliers that were screened using environmental criteria.	Suppliers	No	-	x
EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken.	Suppliers	No	-	x
Aspect: Mechanisms of Complaints and Complaints Concerning Environmental Impacts					
EN34	Number of complaints and complaints related to environmental impacts recorded, processed and resolved through a formal mechanism	Biodiversity / Vegetation Management	No	x	x
Social Performance					
Performance Indicators Related to Labor Practices and Decent Work					
Aspect: Employment					
EU15	Percentage of employees eligible to retire in the next 5 and 10 years broken down by job category and by region.	People Management / Remuneration, Benefits and Preparation for Retirement	Yes	x	-
EU16	Policies and requirements regarding health and safety of employees and employees of contractors and subcontractors.	People Management / Labor Safety, Occupational Health and Welfare	No	x	x
LA1	Total number and rate of employee turnover by age group, gender, and region.  Note about this indicator: For the employees who left their employment during the reporting period, report the average time in the job, by gender and age group.	People Management / Staff Profile	Yes	x	-
LA2	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.	People Management / Labor Safety, Occupational Health and Welfare	Yes	x	-
LA3	Return to work and retention rates after parental leave, by gender	People Management / Labor Safety, Occupational Health and Welfare	No	x	-

EU18	Percentage of contractor and subcontractor employees that have undergone relevant health and safety training.	People Management / Organizational Learning	Yes	x	-
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Aspect: Labor Relations

LA4	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements.	People Management / Labor and Union Practices	Yes	x	-
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Aspect: Workplace Health and Safety

LA5	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs	People Management / Labor Safety, Occupational Health and Welfare	Yes	x	-
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LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of workrelated fatalities, by region and by gender	People Management / Result of Indicators	Yes	x	-
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LA7	Workers with high incidence or high risk of diseases related to their occupation	According to Occupational Medicine, Cemig's employees are subject predominantly to the risk of accidents and in some activities there are risks of occupational diseases, which the Health and Safety units work to minimize.	No	x	-
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LA8	Health and safety topics covered in formal agreements with trade unions	People Management / Labor and Union Practices	Yes	x	-
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Aspect: Training and Education

LA9	Average hours of training per year per employee by gender, and by employee category.	People Management / Organizational Learning	Yes	x	-
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LA10	Programs for skills management and lifelong learning that support the	People Management / Remuneration, Benefits and	Yes	x	-
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	continued employability of employees and assist them in managing career endings.	Preparation for Retirement				
LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category.	People Management / Performance Management	Yes	x	-	
Aspect: Diversity and Equal Opportunities						
LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity	People Management / Staff Profile	Yes	x	-	
Aspect: Equal Remuneration for Men and Women						
LA13	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation	People Management / Diversity, Equality of Opportunities and Human Rights	Yes	x	-	
Aspect: Evaluation of Suppliers' Labor Practices						
LA14	Percentage of new suppliers that were screened using labor practices criteria	Suppliers	No	x	x	
LA15	Significant actual and potential negative impacts for labor practices in the supply chain and actions taken.	Suppliers / Management of Supply Chain	No	x	x	
Human Rights Performance Indicators						
Aspect: Investments						
HR2	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	Cemig / Ethical conduct	Yes	x	-	
Aspect: Anti-Discrimination						
HR3	Total number of incidents of discrimination and	People Management / Diversity, Equality of Opportunities and Human Rights	Yes	x	-	

corrective actions  
taken.

Aspect: Freedom of association and collective bargaining

HR4	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights.	Suppliers / Management of Supply Chain	Yes	x	x
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Aspect: Child Labor

HR5	Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor.	Suppliers / Management of Supply Chain	No	x	x
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Aspect: Forced or Compulsory Labor

HR6	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.	Suppliers / Management of Supply Chain	No	x	x
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Aspect: Safety Practices

HR7	Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations	100% of the watchman receive training in matters related to occupational health and safety and human rights during training courses	No	x	-
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Aspect: Human Right Evaluation of Suppliers

HR10	Percentage of new suppliers that were screened using human rights criteria.	Suppliers / Management of Supply Chain	No	x	x
HR11	Significant actual and potential negative human rights impacts in the supply chain and actions taken.	Suppliers / Management of Supply Chain	No	x	x

Company's Social Performance Indicators

Aspect: Emergency and disaster prevention and preparedness

EU21	Contingency planning measures, disaster/emergency	Water resources / Dam Safety	Yes	x	x
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	management plan and training programs, and recovery/restoration plans.				
Aspect: Community					
S01	Percentage of operations with implemented local community engagement, impact assessments, and development programs.	Community / Relationship with community	Yes	x	x
EU22	Number of people physically or economically displaced and compensation, broken down by type of project.	Community / Territory Management	Yes	x	x
Aspect: Combatting Corruption					
S03	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified.	Cemig / Ethical conduct	Yes	x	x
S04	Communication and training on anti-corruption policies and procedures.	Cemig / Ethical conduct	Yes	x	x
S05	Confirmed incidents of corruption and actions taken.	Cemig / Ethical conduct	Yes	x	x
Aspect: Public Policy					
S06	Total value of political contributions by country and recipient/beneficiary.	Being a public-sector/private-sector ('mixed stockholding') company, Cemig cannot and does not make financial contributions to politicians, parties or related institutions.	No	-	-
Aspect: Unfair Competition					
S07	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes.	The Company was not prosecuted, nor were any administrative proceedings brought against, it for violations of the competitive order (neither for practices of trust, monopoly or unfair competition). All of Cemig's acquisitions, prior to taking effect, must be approved by the	No	x	-

Administrative Council for Economic Defense (CADE), an authority linked to the Brazilian Ministry of Justice.

Product liability indicators

Aspect: Client Health and Safety

PR1	Percentage of significant product and service categories for which health and safety impacts are assessed for improvement.	Clients and Consumers / Safe use of energy	No	x	-
PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes.	There were no non-compliance cases related to this aspect.	No	x	x
EU25	Number of injuries and fatalities to the public involving company assets including legal judgments, settlements and pending legal cases of diseases.	Clients and Consumers / Safe use of energy	No	x	x

Aspect: Labelling of Products and Services

PR3	Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant products and service categories subject to such information requirements.	Clients and Consumers / Safe use of energy	No	-	x
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.	Clients and Consumers / Safe use of energy	No	-	x
PR5	Results of surveys measuring customer satisfaction.	Clients and Consumers / Safe use of energy	Yes	x	x



## Aspect: Marketing Communications

PR6	Sale of banned or disputed products.	Not applicable.	-	-	-
PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes.	Clients and Consumers / Safe use of energy	No	x	x

## Aspect: Client Privacy

PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	Clients and Consumers / Data Safety	Yes	x	x
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## Aspect: Conformity

PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.	CEMIG was assessed 7 times by Aneel in 2016, resulting in fines totaling R\$ 24.29 million. The Company has a control with annual targets to reduce fines received through processes and specific internal controls, which act directly in the effort to reduce the initial amount applied. In 2016, there was administrative decisions for 7 fines, related to 2 infraction notices issued by Aneel in 2014, to 2 in 2015 and 3 in 2016. The amount of these 7 fines for the year 2016, already considering the decisions of previous years, was R\$ 23.3 million. After this year's decisions, the amount went to R\$ 12.47 million, equivalent to a reduction of 46.5% in the amount initially applied. This result, coupled with the number of reduced fines, results in a Regulatory Fines Reduction Index (IRMR) of 73.01%, surpassing the target for 2016 that was	No	x	-
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40.95%. The target is established by the effective result of the indicator, calculated for the accumulated of the last 5 years.

Aspect: Conformity					
EU26	Percentage of population unserved in licensed distribution or service areas.	Clients and Consumers / Initiatives of Electric Inclusion	No	x	x
EU27	Number of residential disconnections for non-payment.	Clients and Consumers / Non-compliance	No	x	x
EU28	Power outage frequency.	Clients and Consumers / Quality of Energy	Yes	x	x
EU29	Average power outage duration.	Clients and Consumers / Quality of Energy	Yes	x	x
EU30	Average plant availability factor by energy source and by regulatory regime.		No	x	x

## PRINCIPLES OF THE GLOBAL COMPACT



GLOBAL COMPACT PRINCIPLES	
Human Rights	
GC1	Principle 1 : Businesses should support and respect the protection of internationally proclaimed human rights
GC2	Principle 2: make sure that they are not complicit in human rights abuses
Labour	
GC3	Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining
GC4	Principle 4: the elimination of all forms of forced and compulsory labour
GC5	Principle 5: the effective abolition of child labour
GC6	Principle 6: the elimination of discrimination in respect of employment and occupation
Environment	
GC7	Principle 7: Businesses should support a precautionary approach to environmental challenges
GC8	Principle 8: undertake initiatives to promote greater environmental responsibility
GC9	Principle 9: encourage the development and diffusion of environmentally friendly technologies
Anti-Corruption	
GC10	Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

## SUSTAINABLE DEVELOPMENT GOALS



SUSTAINABLE DEVELOPMENT GOALS		CHAPTER
SDG1	Eradication of poverty	Corporate Citizenship and Philanthropy
SDG2	Zero hunger	Energy Efficiency and Conservation
SDG3	Good health and well-being	Corporate Citizenship and Philanthropy / Efficiency and Energy Conservation / Workplace safety, Occupational Health and Welfare
SDG4	Quality education	Corporate Citizenship and Philanthropy / Organizational Learning
SDG5	Gender equality	Diversity, Equal Opportunities and Human Rights
SDG6	Clean water and sanitation	Water resources
SDG7	Affordable and clean energy	Access to Energy
SDG8	Decent employment and economic growth	People management
SDG9	Industry, innovation and infrastructure	Concessions and Investments / Technology and innovation
SDG10	Reducing inequalities	Diversity, Equal Opportunities and Human Rights
SDG11	Sustainable Cities and Communities	Access to Energy
SDG12	Responsible consumption and production	Waste
SDG13	Combating climate change	Climate Change
SDG14	Life underwater	Biodiversity
SDG15	Life on earth	Biodiversity
SDG16	Peace, justice and strong institutions	Ethical Conduct and Practices Anti Corruption
SDG17	Partnerships for goals	Participation in Associations

## **SUSTAINABLE DEVELOPMENT GOALS**



# INDEPENDENT VERIFICATION STATEMENT



## ASSURANCE STATEMENT

### **SGS ICS CERTIFICADORA LTDA, (SGS) STATEMENT OF SUSTAINABILITY ACTIVITIES IN "ANNUAL SUSTAINABILITY REPORT 2016" OF CEMIG.**

#### **ASSURANCE NATURE AND SCOPE**

SGS was hired by Companhia Energética de Minas Gerais - CEMIG to undertake the Annual Sustainability Report 2016 (RAS2016) in independent manner. The assurance scope, based on assurance methodology of SGS' Sustainability Report, includes texting and data for 2016 provided therein.

The responsibility for the information of "ANNUAL SUSTAINABILITY REPORT 2016" of CEMIG and its presentation lies on company's board of directors and management. SGS has not taken part in preparation of any material provided in "ANNUAL SUSTAINABILITY REPORT 2016". Our responsibility is to give our opinion regarding the text, data, charts and statement within the assurance scope, which will be detailed later in order to communicate CEMIG stakeholders.

The SGS Group has developed a set of Sustainability Assurance Communication protocols based on actual improvements provided in Global Reporting Initiative (GRI) guide and the assurance standard ISAE3000. These protocols are different options of assurance level, depending on context and capability of Claimant Organization.

This report was assured through our protocols to assess content legitimacy and its alignment to Sustainability Report Preparation Guide (GRI G4), and it has demonstrated a reasonable level. The assurance has covered a combination of previous investigation, interviews with strategic employees, review of documents, records and data and assessment of report for alignment with GRI protocols. The CEMIG's accounting information and/or referred to "ANNUAL SUSTAINABILITY REPORT 2016" were not assessed as integrating part of this assurance process.

#### **STATEMENT OF INDEPENDENCE AND COMPETENCE**

The SGS Group is worldwide leading organization in inspections, analysis and verifications, operating in more than 140 countries and service provision, including management system certification, audit and capacitation in quality, environmental, social and ethic areas, assurance of sustainability report and verification of greenhouse gases (GHG). SGS reinforces its independence from CEMIG, being exempt from interest conflict with organization, its subsidiaries and stakeholders.

The assurance team was made based on members' knowledge, expertise and qualification to this service; it was composed of:

- A Lead Auditor for Sustainability Assurance Report, Lead Assessor of Greenhouse Gases (GHG), Lead Auditor for Social and Environmental programs, Lead Auditor for Environmental, Quality, Energy and Sustainable Events Management System.
- An Auditor for Sustainability Report Assurance, Lead Assessor of Greenhouse Gases (GHG) and Climate Changes program, lead Auditor for Socio-environmental programs.
- An Auditor for Sustainability Report Assurance, Lead Auditor for Socio-Environmental programs.

#### **ASSURANCE OPINION**

Regarding the methodology provided and verification performed, we are satisfied with the information and data provided in assessed "ANNUAL SUSTAINABILITY REPORT 2016" are reliable and a fair and balanced representation of CEMIG sustainability activities in 2016. The assurance team has the opinion that the report can be used by CEMIG stakeholders. We believe that the organization has chosen the assurance level suitable to its needs.

In our opinion, the report content meets the requirements of GRI G4, including certain indicators of Specific Supply for the Electric Segment G4 as Essential Option and Global Compact Principles.



## ASSURANCE STATEMENT

### RECOMMENDATIONS, FINDINGS AND CONCLUSIONS OF GLOBAL GUIDELINES OF GLOBAL REPORTING INITIATIVE GRI G4

The CEMIG Report, "ANNUAL SUSTAINABILITY REPORT 2016", is properly aligned with GRI G4, Essential Option. The material aspects and limits inside and outside the organization were properly defined in accordance with GRI Reporting Principles. The material aspects claims and the identified limits and commitment to stakeholders, are described correctly in the report.

By keeping the use of GRI G4, CEMIG kept its leading position in sustainability reports. Equally, it reports to CDP (Carbon Disclosure Project) in a voluntary manner since 2007, and its GHG inventory is checked by an independent third party. This information was used in a GRI report.

A SGS congratulates CEMIG for its commitment to social programs, demonstrated through the "Centro de Arte Popular – CEMIG" and the energy efficiency actions, with access to energy. CEMIG has been constantly contributing to people and institutions with philanthropy, donations, sponsorship and subsidies.

We also point out the visit to the Mobile Laboratory of Tree Analysis - Lamanar, which is a Research and Development project, started in 2012 in partnership with the Center for Technology and Innovation Management (CGTI) - non-profit, CGTI is an OSCIP (Civil Society Organization of Public Interest) recognized by the Ministry of Justice of the Federal Government and by the Ministry of Science, Technology and Innovation, being considered a tool for the diagnosis of tree health.

CEMIG promotes an ethical behavior to its management based on its "Ethical Practices Statement and Professional Code of Conduct". It has an internal corporate audit team, as well as a Risk Management area and an information security team. It was observed that it adopts solid methods for assessing operational, financial and environmental risks.

Some opportunities for improvement were found during the 2016 assurance process, to be considered in coming reports, such as:

- Consider reporting the number of third parties detailing the type of contract, region, gender.
- Consider reporting significant changes in the period covered by the report in relation to CEMIG's size, structure, ownership or supply chain.
- To adopt an international acknowledged methodology or standard to assess water-related risks, and to make a hydric assessment and quantify its water footprint. To do so, the water catchment should be considered.
- Consider reporting any reformulations of information provided in previous reports and the reasons.
- Consider reporting the reasons the president also accumulates the role of chief executive officer.
- In relation to the development and impact of investments in infrastructure and services offered, to report the current or expected impacts on communities and local economies. Report positive and negative impacts consider important.

Executed by and on behalf of SGS

**Fabian Peres Gonçalves**  
**Lead Auditor – Sustainability Report**  
**SGS ICS Certificadora Ltda.**  
**April 27th, 2017**  
**[www.sgs.com](http://www.sgs.com)**

## CREDITS

G4-5

Writing and coordination

G4-31

Cemig Corporate Communication Management (CE)

Cemig Investor Relations Management (RI)

Cemig Corporate Sustainability Management (SE)

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Keyassociados

(31) 3567-6503

Av. do Contorno, 7069, sala 208 - Santo Antônio

Belo Horizonte - MG

Zip Code 30110-043

[Website Keyassociados](#)

## Photographs

THZ Imagens – Cemig’s archiving system – iStock Photo

## Translation

Stephen B. Fry

## Corporate information

### **Companhia Energética de Minas Gerais – Cemig**

Avenida Barbacena 1200

30190-131 Belo Horizonte, Minas Gerais,

CNPJ: 17.155.730/0001/64

Telefone: 116, or 0800 7210 116

[www.cemig.com.br](http://www.cemig.com.br)

### **Cemig Distribuição S.A.**

Avenida Barbacena 1200 – 17<sup>th</sup> floor – Ala A1

30190-131 Belo Horizonte, Minas Gerais

CNPJ: 06.981.180/0001-16

### **Cemig Geração e Transmissão S.A.**

Avenida Barbacena 1200 – 12º andar – Ala B1

30190-131 Belo Horizonte, Minas Gerais

CNPJ: 06.981.176/0001-58

### Custodian Bank

Banco Itaú S.A.

### ADRS: Depositary Bank

Citibank Shareholder Services

For suggestions / comments on this report, please send email to [sustentabilidade@cemig.com.br](mailto:sustentabilidade@cemig.com.br).