



2019
Annual
sustainability report

Summary

03

Message from the Board

05

About the report

08

CTG Brasil

Profile

Purpose and strategy

Sustainability management

Awards and recognitions

18

We prioritize life

Safety comes first

Health care

Safety indicators

26

Our energy is our people

Our way of doing it

Qualification and development

Career and succession

35

Integrity, always

Ethical conduct

Risk management

Corporate governance

49

Excellence in everything

Modernization of plants

Operational efficiency

Engagement with stakeholders
Local communities

Corporate reputation

Environmental management

Economic and financial performance

75

We innovate to transform

Developing knowledge

Innovation environment

79

Annexes

Complement to the GRI disclosures

GRI content index

Aneel indicators

Corporate information

How to use this document



MENU
Navigate through the side menu to the chapters of interest



HOME
Click this icon to return to the summary



ARROWS
Navigate page by page using the arrows



PRINT
Use this shortcut to print the PDF content



INTERACTIVITY
Click on the diagrams with this icon to access detailed content

MESSAGE FROM THE BOARD

Brazil's choice to take advantage of its high hydropower potential, building large generation plants in the mid-20th century, currently places the country as a leader in the global journey to reduce the presence of fossil fuels in the global energy matrix. The increasing demand for renewable energy sources has brought Brazil and China together at CTG Brasil, which has built its history of success and growth while being guided by a purpose: "Powering the world's development with large-scale, clean energy."

This purpose is related not only of our generation from renewable sources, but also our commitment to build a legacy for sustainable development. CTG Brasil's contribution goes beyond the clean energy it produces, as it is based on good management practices aimed at creating value and enhancing the positive impacts of our business model on relations with employees, suppliers, customers, stakeholders in the electricity sector, and civil society as a whole.

Our company operates a generator park with 12 hydropower plants (HPPs) and 2 small hydropower plants (SHPs). Some of these assets have been in operation for over 50 years, such as HPPs Jupiá and Ilha Solteira, but they still play a key role in guaranteeing the country's energy supply. For this reason, we are committed to modernizing this infrastructure and establishing a new level of operational efficiency.

Over a period of ten years, BRL 3 billion will be invested in the renovate and modernize equipment, implement new technologies, digitize and automate processes, and turn these two plants into a milestone in the evolution of the Brazilian electricity sector. In 2019, the first phase of this project was completed with the intervention in four generation machines – two in Jupiá and two in Ilha Solteira. The second stage of the project is already underway and will enable the modernization of another eight turbines, with a total investment of BRL 704 million to be made by 2021.

More than just engineering and construction work, the plant modernization project is the backdrop for CTG Brasil's cultural transformation. Brazilian and Chinese professionals are working side by side to allow the company to achieve its business goals and targets, prioritizing safety, ethics, and the spirit of collaboration.

**“ The effort to modernize
the plants to a new level of
operational efficiency highlights
our purpose of building a legacy for
sustainable development ”**

Care for people and the environment is present in all our activities. In recent years, we have standardized processes and pursued operational excellence, while remaining aware that there are always opportunities for improvement. Reducing risks and preventing employees and third parties from having accidents at our plants is our priority, as evidenced by having Life as the first value, and we must work hard to improve our performance in this regard.

At the operational level, we were able to overcome significant challenges in the last year, marked by one of the largest draught periods in history. With less rainfall, the reservoirs of our plants reached critical volumes and generated 12.8% less energy than in 2018. Despite that, we achieved growth in net operating revenue of around 4.6% (on a normalized basis) thanks to our operational efficiency and the teams' commitment to marketing and hydrological risk management.

We believe that generating value in a sustainable way is the best way to achieve CTG Brasil's long-term strategic goals. For this reason, our company is a signatory to the United Nations Global Compact and is committed to doing business while respecting the principles of protecting human rights, good work practices, environmental preservation, and the fight against corruption.

In the socio-environmental area, the investments we made in projects that benefit the communities surrounding our plants totaled BRL 12.7 million in 2019 alone. These resources enable initiatives for environmental education, enhancement of local culture, and protection of biodiversity, increasing the positive impacts of a business model based on clean energy generation.

CTG Brasil, as the country's second largest generator of private capital, plays a key role in supporting national development while ensuring the functionality of the infrastructure that will support the supply of energy with efficiency and sustainability. The company materializes the capacity that Brazil and China have to work together, share knowledge, and invest in improving the energy sector.

In 2019, we completed important changes and projects on the operational, administrative and governance fronts. The replacement of the Managing Director, with a stable transition process that maintained the strategic direction of the business, is one such example. CTG Brasil has reached a new level of maturity and is prepared to grow and strengthen its business at a time when Brazil can resume growth in economic activity and production.

Zhao Jianqiang
CEO of CTG Brasil



ABOUT THE REPORT

For the fourth consecutive year, CTG Brasil releases the Annual Sustainability Report to all its stakeholders, which is prepared annually in accordance with the GRI Standards, a global standard established by the Global Reporting Initiative (GRI) and the most widely adopted by companies for accountability in economic, environmental and social aspects.

This issue covers the period from January 1 to December 31, 2019 and considers all operations controlled by the Company, which total 14 plants and two corporate offices. This document also aims to highlight the corporate advances in the 10 Principles proposed by the Global Compact, an initiative of the United Nations (UN) to which CTG Brasil is a signatory.

The information presented shows CTG Brasil's management approach, performance and perspectives in its business model. They were selected based on the material issues identified by the company, in line with GRI principles, after a broad review of the company's materiality matrix, conducted in 2019.

Coronavirus

The forecasts and projections presented in this report may be impacted by the context of Covid-19 in 2020. CTG Brasil has been taking measures to protect its employees and combat the spread of the virus, and the effects of this pandemic will be presented in the next Annual Sustainability Report.



100%

of operations controlled by
CTG Brasil are covered
by this report

This process included steps to engage internal and external audiences, understanding the context in which they operate and how key sustainability issues relate to the business, and prioritizing them according to their criticality for strategy effectiveness and stakeholder decision-making.



The steps for reviewing the materiality matrix

01

Context analysis

To better understand the sustainability context, CTG Brasil has extensively analyzed a set of sector studies, the issues most present in the press and the aspects prioritized by other energy companies in their reports



02

Consultation with stakeholders

21 interviews with representatives of associations, customers, financial institutions, press and regulatory agencies

4 face-to-face panels in three Brazilian states with local audiences, such as city halls, municipal legislators, members of the police and civil defense, researchers and community leaders

615 complete responses in an online survey, widely disseminated to and answered by employees, suppliers, government agencies, customers, media representatives, third parties, NGOs and other audiences



03

Strategic view

The evaluation of the materiality of the topics in relation to the business strategy included 28 individual interviews with executives and the critical analysis of the inputs in relation to the strategic pillars, the corporate guidelines for sustainability management and the results of CTG Brasil's reputation diagnosis



04

Identification of material topics

The prioritization and definition of topics also included a stage of review of the completeness of the materiality defined, ensuring that the set of prioritized issues allowed a systemic view of the main impacts, risks and opportunities associated with the business



Eight topics were identified as material subjects, as shown in the diagram. The theme of climate change, closely linked to the very nature of CTG Brasil's operation, was understood as transversal to three of them: preservation of biodiversity and water resources; promotion of energy from renewable sources; and infrastructure and safety of the operation and the employee. The other five priority topics – reliable power generation; business innovation; ethics, compliance and anti-corruption; local development; and transparency and relationship with stakeholders – complement the matrix.

In addition to these eight topics, the report also addresses the strategy for people management, with the advances and main results achieved in this area. Although this theme has not been identified as a priority in the materiality process, it is a value for the company and a priority in the management of operations on which CTG Brasil intends to give light and transparency to its public.

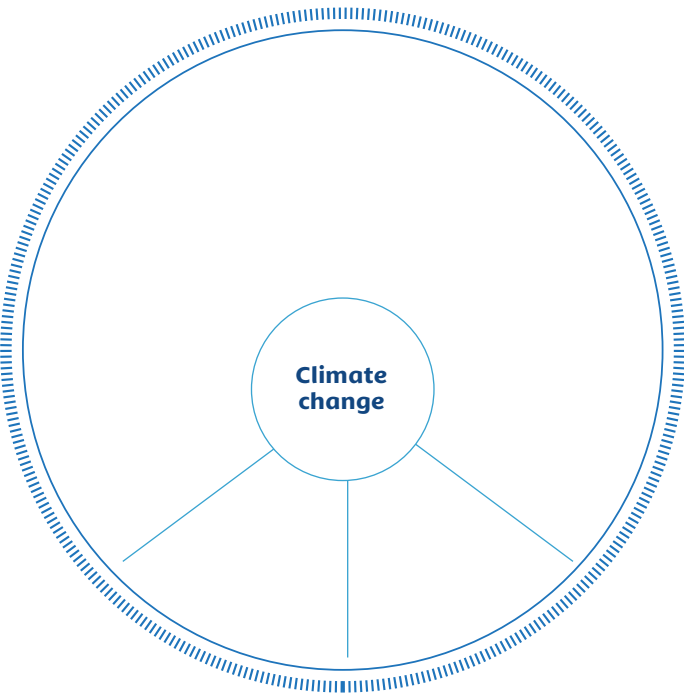
In order to maintain an ongoing dialogue with its audiences and to continuously improve this report, the CTG Brasil team is always available to receive comments and questions about the content of this publication. If you wish to contribute or clarify doubts, please contact comunicacao@ctgbr.com.br.

CTG Brasil's business model has a more intrinsic connection with SDG 7, 8 and 15. Therefore, after identifying the most relevant topics for sustainability management, the company will be focused on expanding and strengthening its contributions to achieving the goals established in these aspects.



CTG Brasil's material topics

 **Click on each topic** to learn more about their relevance in operations and how they are aligned with the Sustainable Development Goals (SDGs) proposed by the UN.





CTG Brasil

PROFILE

CTG Brasil operates 12 hydropower plants (HPPs) and two small hydropower plants (SHP), in addition to holding stakes in three other HPPs and 11 wind farms, making it the second largest private power generator in the country. The assets total 8.3 GW of installed capacity, which represents 5% of the Brazilian generation park, and are managed by four controlled operating companies: Rio Paraná, Rio Paranapanema, Rio Canoas and Rio Verde.

The expertise for the management of these units is strengthened by the integration and exchange of knowledge with the parent company, China Three Gorges Corporation, the world's largest hydropower producer, with a presence in over 40 countries and 131 GW of installed capacity. The commercialization of the physical guarantee of the plants operated in Brazil is done in an integrated manner, taking into consideration the contracting environment (free or regulated), the risk and commercialization strategy and the exposure to hydrological risk, among other factors.

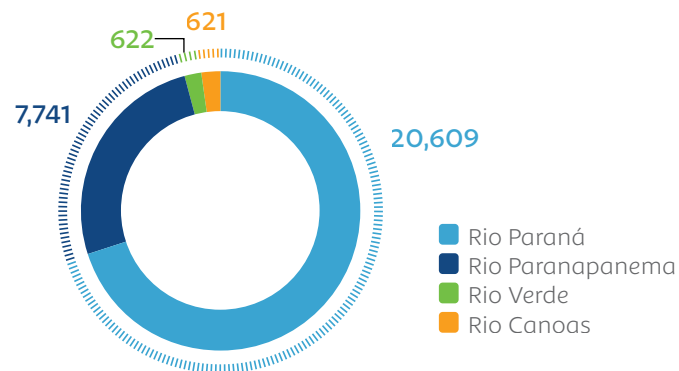
CTG Brasil is the Group's holding company in Brazil, with headquarters in São Paulo (SP), where all corporate support activities to operations are concentrated, whose costs are prorated among the operating companies according to a Human Resources Sharing Contract, approved by the National Electric Energy Agency (Aneel). Additionally, CTG Brasil Serviços Administrativos Ltda., headquartered in Curitiba (PR), has the Shared Services Center, whose services are provided to CTG Brasil and the operating companies through a Service Contract, also approved by Aneel.

In 2019, the operations directly controlled by CTG Brasil generated 29.6 TWh of energy, enough to supply a city with approximately 10 million people in the same period. Net operating revenue in the period totaled BRL 4.8 billion and investments in expansion (CAPEX), mainly directed to the modernization of assets, totaled BRL 595.6 million.

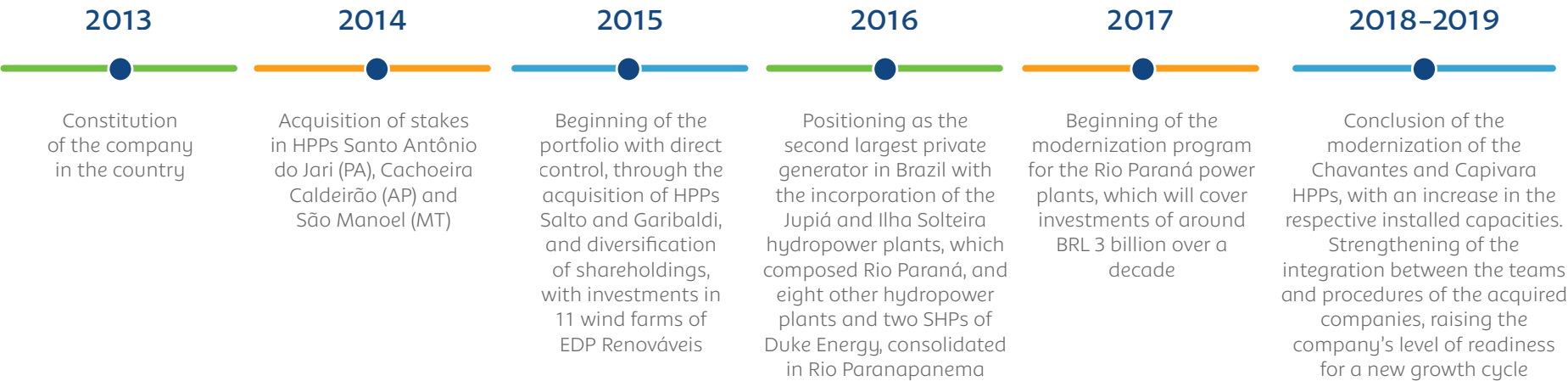
¹Considering that 1 average MW is enough to supply a city with approximately 3 thousand inhabitants, according to the Energy Bulletin of the Secretariat of Energy and Mining of the State of São Paulo.



Energy generation (GWh)



Trajectory of CTG Brasil

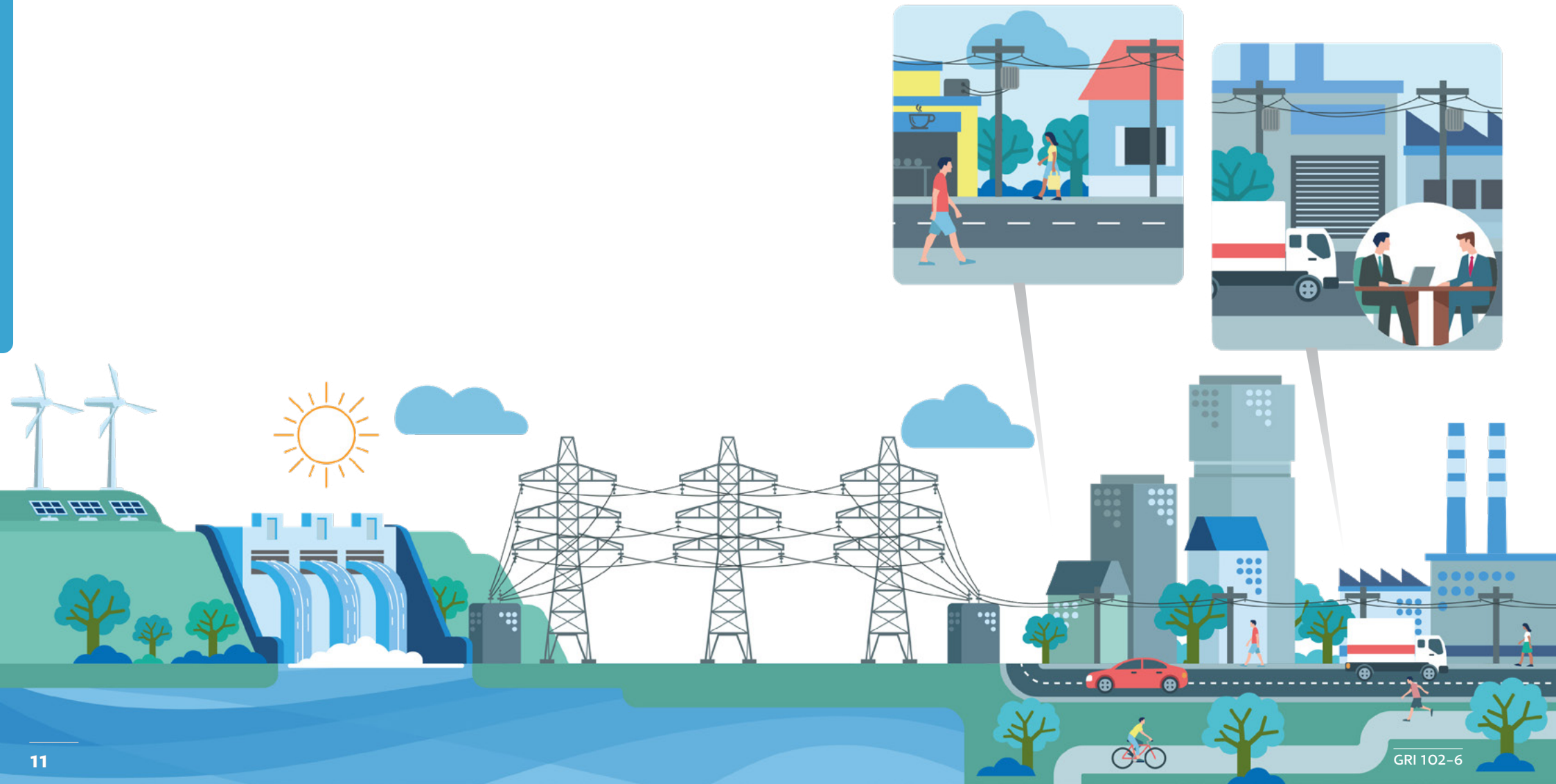


How CTG Brasil operates in the country

In the Brazilian electricity sector, the value chain is organized into three major segments and two contracting environments.



Click on the drawing text boxes and understand how they work and what is the role of CTG Brasil in each one.



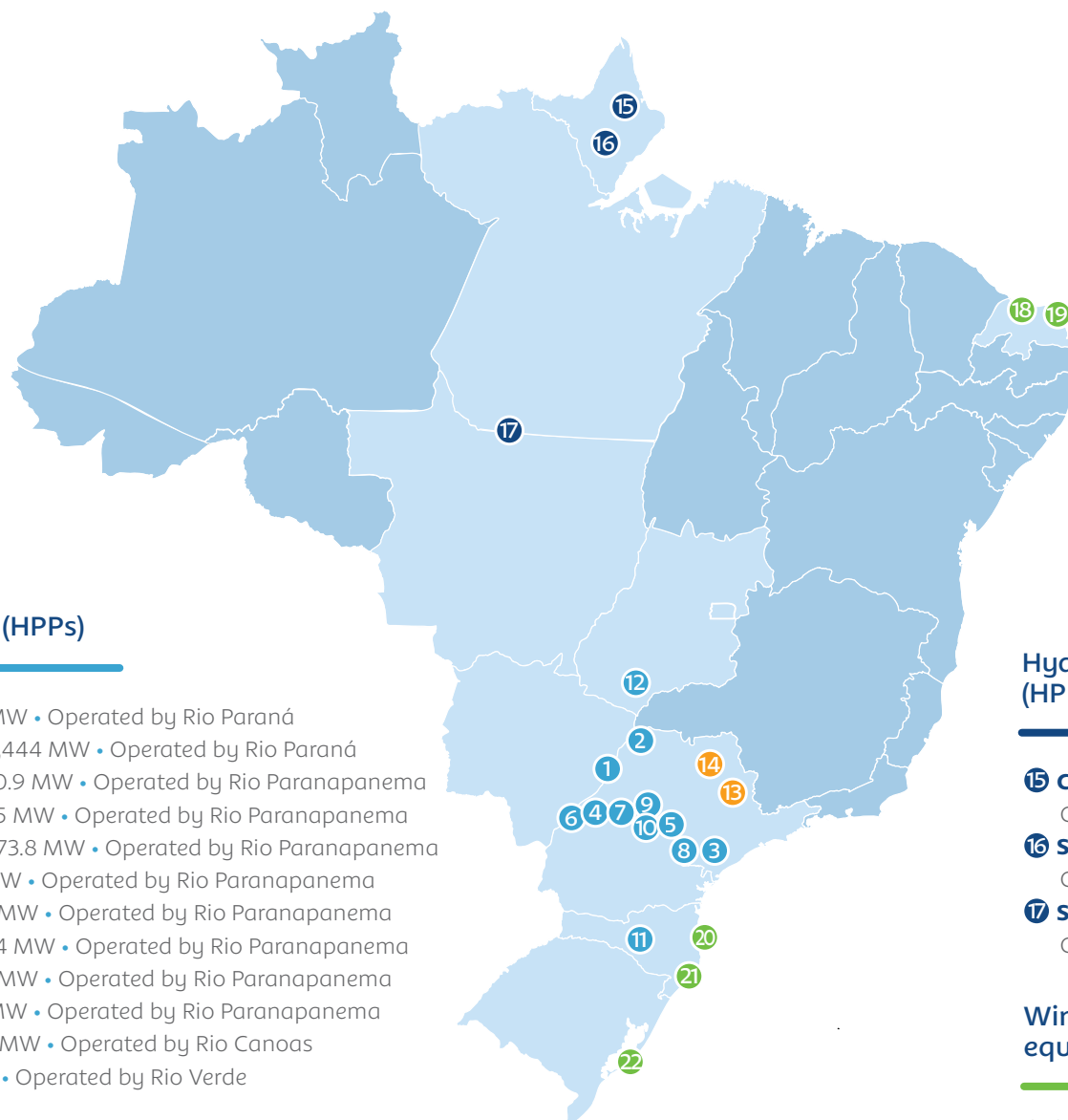
CTG Brasil Operations

Directly controlled hydropower plants (HPPs)

- 1 **Jupiá HPP** • 1,551.2 MW • Operated by Rio Paraná
- 2 **Ilha Solteira HPP** • 3,444 MW • Operated by Rio Paraná
- 3 **Jurumirim HPP** • 100.9 MW • Operated by Rio Paranapanema
- 4 **Taquarucu HPP** • 525 MW • Operated by Rio Paranapanema
- 5 **Salto Grande HPP** • 73.8 MW • Operated by Rio Paranapanema
- 6 **Rosana HPP** • 354 MW • Operated by Rio Paranapanema
- 7 **Capivara HPP** • 643 MW • Operated by Rio Paranapanema
- 8 **Chavantes HPP** • 414 MW • Operated by Rio Paranapanema
- 9 **Canoas I HPP** • 82.5 MW • Operated by Rio Paranapanema
- 10 **Canoas II HPP** • 72 MW • Operated by Rio Paranapanema
- 11 **Garibaldi HPP** • 192 MW • Operated by Rio Canoas
- 12 **Salto HPP** • 116 MW • Operated by Rio Verde

Small Hydropower Plants (SHPs)

- 13 **Palmeiras SHP** • 16.5 MW • Operated by Sapucaí-Mirim, controlled by Rio Paranapanema
- 14 **Retiro SHP** • 16 MW • Operated by Sapucaí-Mirim, controlled by Rio Paranapanema



Hydropower Plants (HPPs) with equity participation

- 15 **Cachoeira Caldeirão HPP** • 219 MW
CTG Brasil Shareholding • 50%
- 16 **Santo Antônio do Jari HPP** • 392.95 MW
CTG Brasil Shareholding • 50%
- 17 **São Manoel HPP** • 735.8 MW
CTG Brasil Shareholding • 33.33%

Wind farms with equity participation

- CTG Brasil Shareholding • 49%
- 18 **Aroeira, Jericho, Umbuzeiros and Aventura I Wind Farms** • 126.9 MW
 - 19 **Baixa do Feijão I, II, III and IV Wind Farms** • 120 MW
 - 20 **Horizonte Wind Farm** • 4.8 MW
 - 21 **Água Doce Wind Farm** • 9 MW
 - 22 **Tramandaí Wind Farm** • 70 MW

In each plant, the respective installed capacity is identified.

PURPOSE AND STRATEGY

Throughout 2019, CTG Brasil promoted a great movement to transform its corporate culture, which resulted in the disclosure of its purpose and the revision of its organizational values. "Powering the world's development with large-scale, clean energy" synthesizes, as a corporate purpose, the value that CTG Brasil has to offer to society. Five company values consolidate the key aspects of this organizational culture.

A differential in this transformation process was the way in which the culture was built, in a collaborative manner strengthening the participation of all employees in different stages of the *Nosso Jeito* project to a transversal vision of the company and the strategic alignment and positioning. In a collaborative manner, multidisciplinary teams led the various stages of work, which included the survey to identify the current culture – with 98% of the collaborators' adherence), individual interviews with executives, mapping of organizational networks (with 83% adherence), as well as focus groups and several workshops for collective construction.

In December 2019, during a meeting of all employees with the president of CTG, and purpose and values were disclosed to the internal public. In 2020, culture workshops will be conducted in each unit, involving 100% of the employees not only in the dissemination but also in the evolution of this culture and in the understanding of how each one can perceive them in their daily lives. These face-to-face moments will also include the reinforcement of an internal campaign calendar, with inspiring stories and intensive dissemination of corporate culture. In addition, processes will be reviewed in order to put this new culture into practice.

Purpose Values

**Powering the
world's
development
with large-scale,
clean energy**

We prioritize life

For us, safety and care for people and the environment always come first

Our energy is our people

We believe that each one has a lot to offer and that diversity allows us to go even further, together

Integrity, always

For us, ethics is non negotiable and permeates everything we do

Excellence in everything

We work to excel ourselves every day. We understand that efficiency is in doing things in a simple way

We innovate to transform

We are bold and connected. We collaborate to deliver solutions that create value for everyone

Strategic planning

The demand for energy in Brazil tends to increase in the medium and long term, through the recovery of economic activity, and the infrastructure to support this evolution must already be available when this moment comes. In addition, the context of combating climate change and decarbonization of the energy matrix, reinforced by the Brazilian targets in the Paris Agreement, requires this expansion to occur in renewable sources. The modernization of the sector's regulatory framework, in turn, opens opportunities for new business models and an even more dynamic environment for buying and selling energy. Finally, innovations and technology development have transformed the way society consumes energy and can contribute to even greater efficiency and reliability in the management of generation assets.

Faced with this scenario, CTG Brasil defined its Strategic Plan that will guide the company's growth and priorities in the country. To guide business management, four strategic guidelines were designed.

The first is **operational excellence**, which means operating the plants with the highest standards of quality and safety and conducting all processes according to the best market practices, seeking simple and agile solutions. The second is **financial discipline**, in which the company must establish a culture of efficiency and austerity, ensuring that all processes and initiatives aim at creating value. The third is **commercial efficiency**, in which CTG Brasil will use innovative solutions to optimize the relationship between risk and return in energy sales. And, finally, **sustainable growth**, which suggests the development of skills and the use of competitive advantages for the growth and strengthening of the business in the long term.

Defined in 2019, the Strategic Plan guarantees the company's readiness to take advantage of growth opportunities in renewable sources, strengthening its relevance in the country



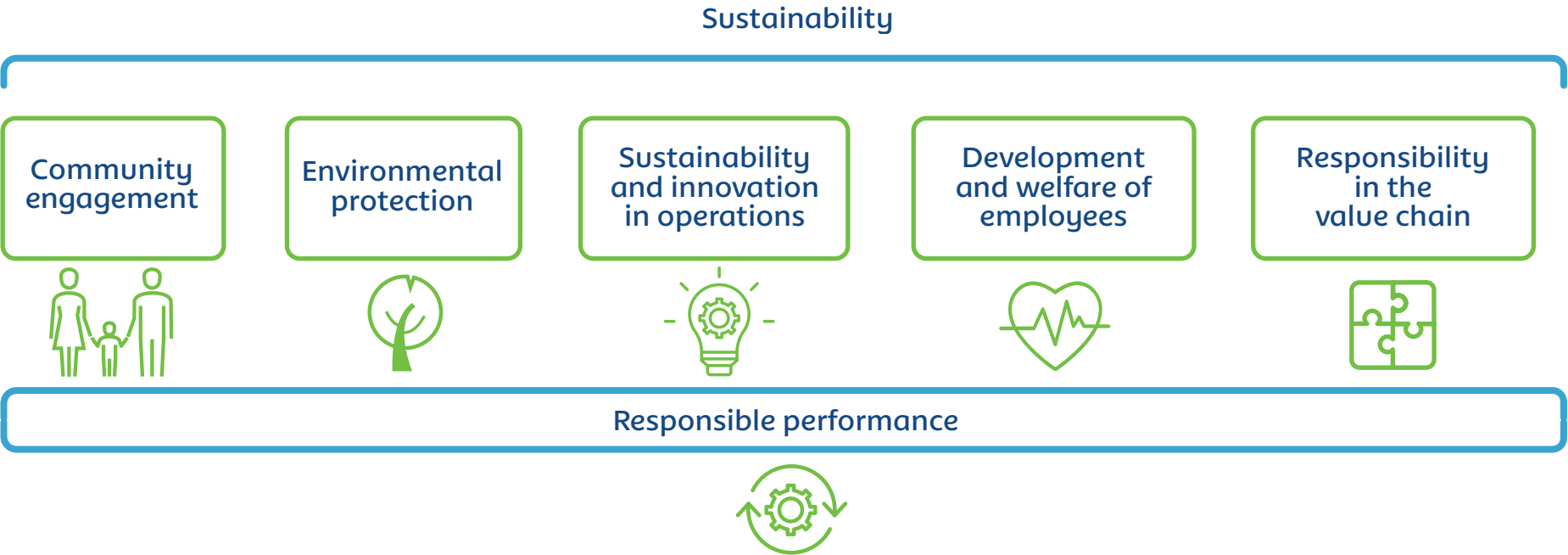
This plan, which aims to make the company ready to take advantage of opportunities in the electricity sector when Brazil picks up the pace of growth, was communicated to the entire leadership under the name of "Paths to our future", so that everyone is aligned and moving in the same direction. Focusing on renewable sources and investments in modernization and technology, CTG Brasil will continue to be positioned as an important player, by strengthening its relevance for the country's development.

SUSTAINABILITY MANAGEMENT

Evident in the purpose and nature of CTG Brasil's business, the commitment to sustainable development is ensured by the Sustainability Policy, structured in 2017. This instrument defines six pillars on which the company has been acting with the purpose of building its sustainability strategy.



CTG Brasil's sustainability pillars



After the approval of the Sustainability Policy, CTG Brasil structured a corporate area dedicated to the governance of the issue. The objective is to make the management approach increasingly aligned with the principles of the Global Compact, a UN initiative to which the company has been a signatory since 2017.

In 2019, a process was conducted for the construction of the materiality matrix that establishes the central themes for sustainability management, in light of the context of action and the main expectations of the engaged relationship publics (learn more about this work on page 5). This matrix, together with the Policy, subsidizes the construction of the corporate sustainability strategy. Among the other advances of the year, a mapping of sustainability demands of the electricity sector was also highlighted, which identified market demands and how they are being worked on by the sector, as well as advances in the strategy of involvement with communities (learn more on page 59).

This continuous evolution of the management model is monitored by the Sustainability Committee, a multidisciplinary group that aims to guide and direct the action plans developed. This structure is formed by representatives from the areas of Environment, Health & Safety, Legal, Brand, Communication & Sustainability, Controllership, Human Resources, Operation & Maintenance and Strategic Planning. Throughout 2019, in order to improve the knowledge of the participants, the Committee's meetings had external guest speakers, who addressed sustainability issues relevant to the context of CTG Brasil's operations. The Brand, Communication & Sustainability Department is the body responsible for facilitating the various initiatives, making it possible to execute the projects and consolidate the results achieved.

The 2017 Sustainability Policy and the materiality matrix, carried out in 2019, support the construction of the corporate strategy for the management of economic, environmental and social risks and impacts



7 areas



make up the CTG Brasil
Sustainability Committee

AWARDS AND RECOGNITIONS

Benchmarking Brasil 2019



The case "Control of Infestation by Golden Mussel Genetic Infertility Induction" was second in the Senior category of Best Practices and Sustainability Projects by Benchmarking Brasil Award. The initiative is recognized in the country for certifying and sharing good practices in sustainability management, with its own methodology and the participation of experts from different countries in the assessment benches.

Brasil Bioeconomia 2019



This same research by CTG Brasil for biotechnological control of the golden mussel was awarded in the category Ideas of the Brasil Bioeconomia Award. Promoted by the Brazilian Association of Industrial Biotechnology (ABBI), the initiative gives visibility to the advances made by companies in this field and is presented annually at the Brazil Bioeconomy Forum, which brings together representatives of industries, research and financial institutions, government, investors, NGOs, startups and civil society.

Anuários Valor 1000 and Valor Grandes Grupos



For the third consecutive year, CTG Brasil is part of the rankings of the 1,000 largest companies and the 200 largest groups in the country, prepared by Valor Econômico newspaper. The surveys consider financial criteria, such as net revenue, EBITDA, net profit and profitability. The list of the 1,000 largest also includes Rio Paranapanema.

Eloy Chaves Award



In 2019, Rio Paranapanema was recognized with the silver medal of the Eloy Chaves Award, promoted by the Brazilian Association of Electric Power Companies (ABCE) since 1980 to reward the companies in the electric sector with the best safety performance.



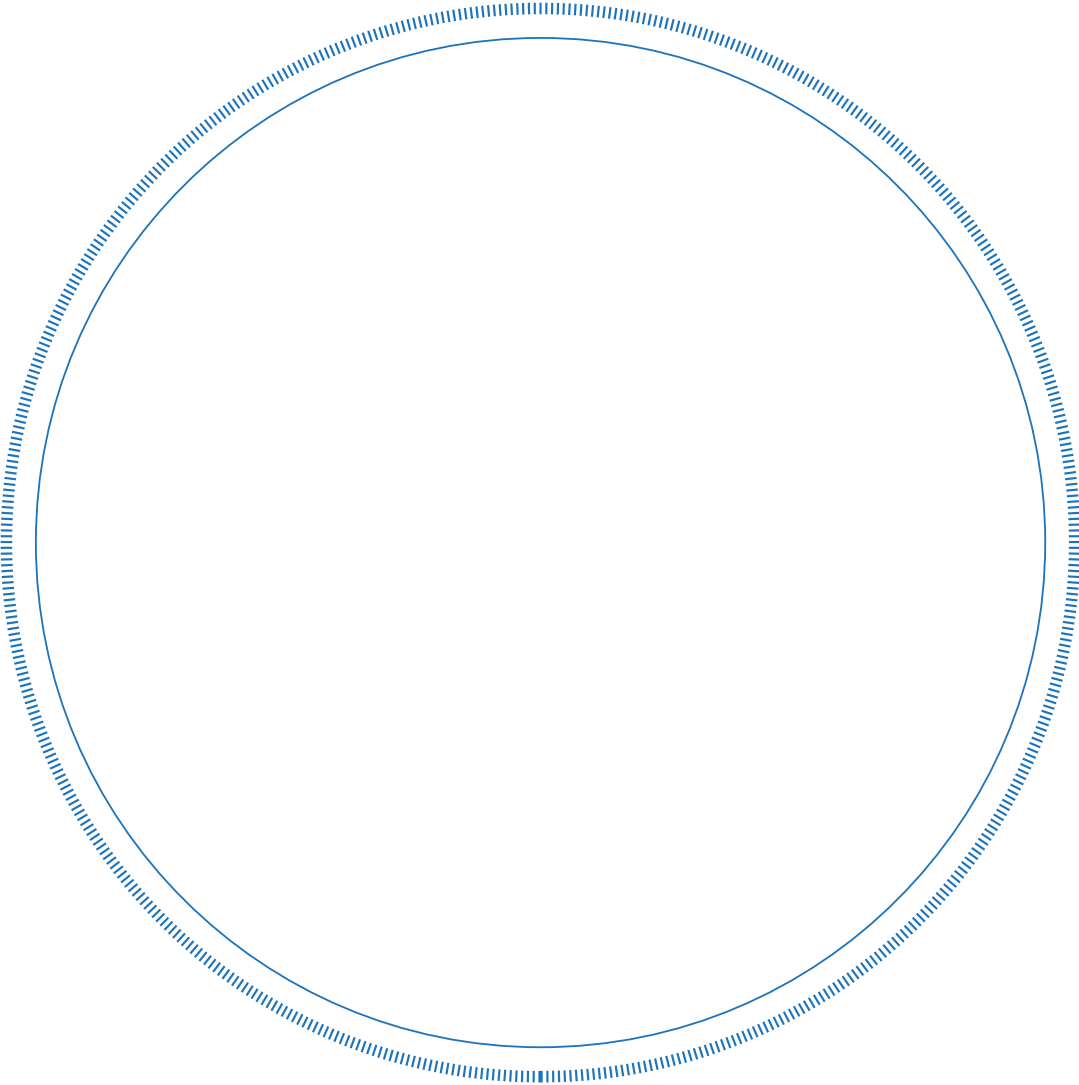
We prioritize life

SAFETY COMES FIRST

CTG Brasil's commitment to the safety of each of the people who work in its plants and offices is non-negotiable. A comprehensive occupational health and safety management system (OHS) encompasses practices for accident prevention and the strengthening of culture in this area, in addition to risk identification and accident investigation, allowing the continuous improvement of guidelines and programs. This system is applicable to all employees and service providers and includes periodic corporate and CTG Corporation audits.

The basis for this system is the Occupational Health and Safety Policy and the Golden Rules, seven premises for safe operation disseminated to all operations. Formalization of management procedures, as well as integration between the safety teams and the operating teams in each unit, ensures proper implementation of these guidelines.

Main health and safety initiatives
Click on each of the practices listed below to learn more about how they contribute to a safer work environment



In 2019

Risk assessment

More than 200 safety inspections were conducted, identifying some 900 opportunities for improvement, with 98% of action plans implemented



Continuous qualification

More than 25,000 hours of training on the subject were provided to employees and third parties



In the area of prevention, the main management indicator is the Preventive Security Index (ISP), created in 2018 and implemented in all plants in the last year. Periodically, the teams inspect the operational areas to check security conditions, use of protective equipment and correct adoption of procedures. These evaluations generate a note, which is consolidated monthly in a ranking for comparison among the plants. At the end of the year, an award (best performance and best evolution) is made by the company's CEO as a way of recognition for good work.

Still in this sphere of activity, a significant evolution in the period was the creation of the behavioral safety program *Conte Comigo* (Count on Me), which systematizes the observation of employee behavior and encourages professionals to identify and talk to colleagues about unsafe acts. Around 1,200 people were trained in the methodology, including the corporate offices.

Another important front to spread a safety culture is training. These courses include those provided for in legislation and also specific modules for CTG Brasil's requirements that go beyond the legal requirements applicable to operations. The regularity of the certificates in these courses is monitored internally for employees and required from contractors through the presentation of supporting documentation. The supply of individual and collective protection equipment is managed in the same way, with constant monitoring of the teams even in cases where the responsibility for providing these protections lies with the contractors.



In the last year, a highlight in training was the training of all employees of the plants – including administrative staff – in risk perception, improving the capacity of each professional to adequately identify the working conditions before starting any activity. This initiative is in line with the **4Ps** program, adopted since 2018, which encourages the worker to **pause** for a few minutes, **predict** the risks, **prevent** by using the necessary measures and only then **proceed** with the activity. The management system also provides the right to refuse to all workers, who may refuse to carry out a certain action if they judge that they do not have the appropriate conditions.

Dialogue channels

Engaging employees and third parties to communicate risk situations themselves or suggest improvements is critical to strengthening the safety culture. In the daily work routine, the Ops, Almost! program provides an exclusive channel for employees and third parties to communicate unsafe conditions and behaviors, reinforcing the leading role of each one in promoting a suitable work environment for everyone.

In a structured manner, the Internal Commissions for Accident Prevention (CIPAs) are an important forum for discussion and planning. Made up of employees from various areas at hierarchical levels in each of the units, the CIPAs are responsible for promoting awareness actions and proposing management improvements, with the direct participation of representatives and covering 100% of operations.





The CIPAs and the Multidisciplinary Committee for Environment, Health and Safety are the main collegiate bodies for the analysis of initiatives, practices and indicators in occupational health and safety

These Commissions organize the Internal Week for the Prevention of Accidents at Work (SIPAT) every year. In 2019, this initiative was carried out in an integrated manner for all units and its main theme was hand care, with lectures and materials on the care to be taken in the day-to-day activities. During this special program, the plants simultaneously carried out a preventive safety inspection, with the participation of members of the CIPAs and the Specialized Services in Safety Engineering and Occupational Medicine (SESMTs), formed by the health and safety teams in each location.

Corporatively, CTG Brasil has the Multidisciplinary Committee for Environment, Health and Safety (EHS – Environmental, Health and Safety), led by the Vice-President of Operations and in which the directors of Environment, Health & Safety, Operations & Maintenance, Administrative, Engineering, Human Resources, Legal Brand, Communication & Sustainability also participate. This committee meets every two months to monitor the evolution of indicators and company actions on these issues. In case of critical occurrences, its members can be summoned in an extraordinary way, guaranteeing agility for the collegiate decision making.

HEALTH CARE

In 2019, CTG Brasil standardized mandatory periodic health examinations for all its units. Every year, all employees undergo these evaluations and are guided by the doctors at work about healthy life habits. Among the main benefits offered corporately in this sense, we highlight the medical and dental assistance plans, the Gympass, which allows the use of partner gyms, and the PASS Support (Employee Assistance Program), which offers psychological, social, financial and legal assistance to all employees and their dependents.

In addition to complying with this periodic routine of examinations, foreseen by the Brazilian legislation, the company structured last year the Health Committee, which planned the set of actions in favor of the health and quality of life of its employees. Examples of these initiatives were the availability of flu vaccines, annually, the campaigns to prevent breast and prostate cancer, with the Pink October and Blue November, and the Pregnant Women's Meeting, which prepared future mothers for the arrival of the baby with theoretical and practical classes. At the São Paulo office, the first health screening was held, which identified the health condition of the employees in order to subsidize prevention programs.



SAFETY INDICATORS

Accident frequency and severity rates are monitored monthly at the units, both for employees and third parties. This comprehensive management for all employees is a premise of the company, which values the lives of professionals regardless of their condition as direct or indirect employees. These indicators are managed for each unit and separately for modernization activities in Ilha Solteira and Jupia.

In 2019, no incidents involving own employees were recorded, but there were 6 accidents involving employees hired from third party service providers, one of which, in December, was a fatal occurrence in the modernization works of Rio Paraná. All the necessary assistance was provided by the Company, which, together with the contracted company, investigated the root causes of the accident and changed the operational procedure that caused the fatality in question, so that this type of situation will no longer occur.

Monitoring of frequency and severity rates covers employees and third-parties in operations and modernization activities

Occupational safety indicators*

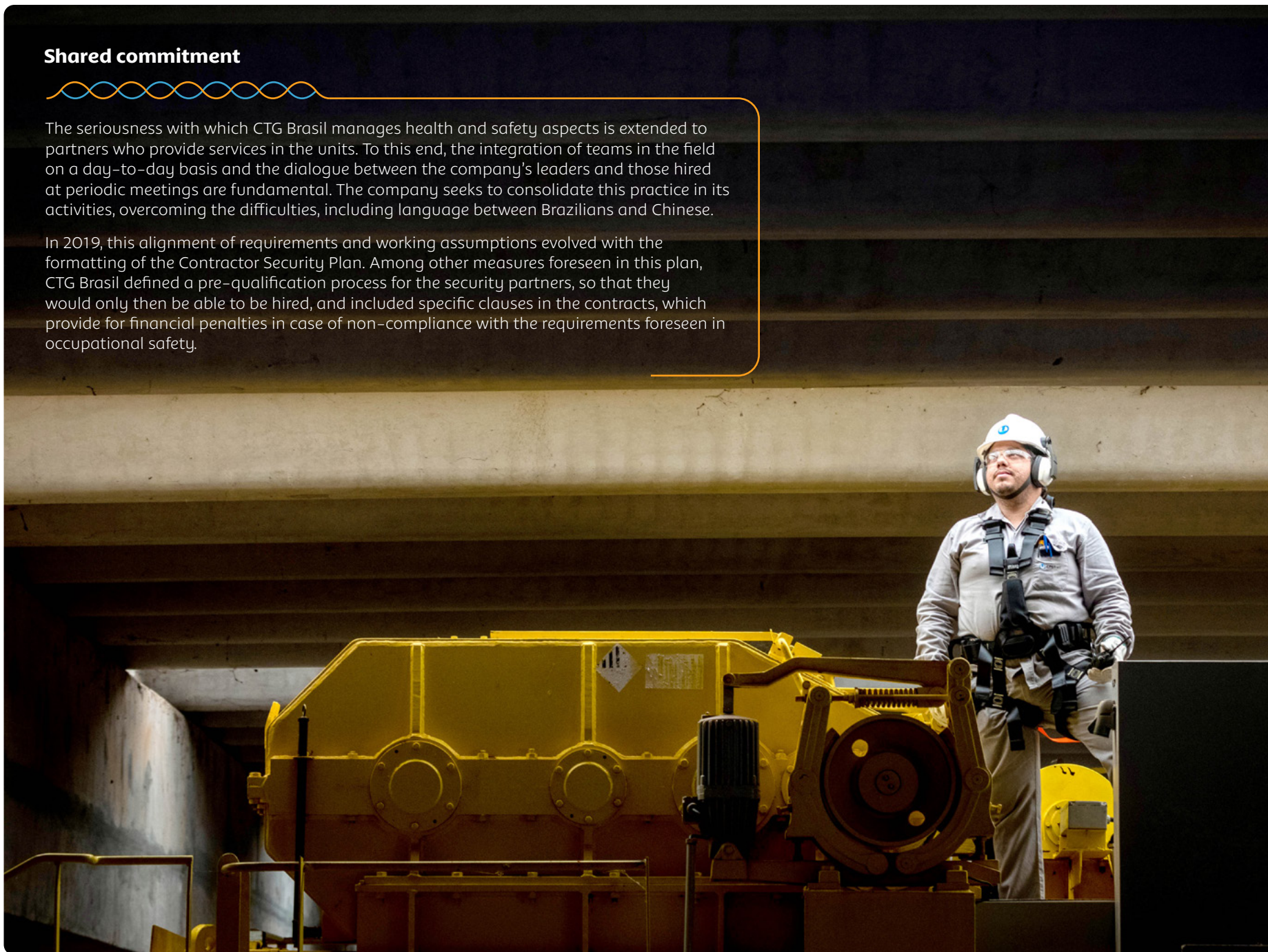
	2019		2018		2017	
	Employees	Third Parties	Employees	Third Parties	Employees	Third Parties
Number of man-hours worked	1,999,542	2,374,552	1,842,278	2,676,772	1,713,735	1,633,263
Total number of recordable accidents	0	6	4	15	6	13
Recordable accident frequency rate	0.00	2.51	2.17	5.60	3.50	7.96
Number of accidents with lost time	0	1	3	2	3	4
Accidents with lost time frequency rate	0.00	0.42	1.63	0.75	1.75	2.45
Number of days lost	0	6,003	36	123	23	53
Accident severity rate	0.00	1,372.40	19.54	45.95	13.42	32.45
Number of accidents that resulted in death	0	1	0	0	0	0
Frequency rate of accidents that resulted in death	0.00	0.42	0.00	0.00	0.00	0.00

*Rates calculated with the factor of 1 million man-hours worked.

Shared commitment

The seriousness with which CTG Brasil manages health and safety aspects is extended to partners who provide services in the units. To this end, the integration of teams in the field on a day-to-day basis and the dialogue between the company's leaders and those hired at periodic meetings are fundamental. The company seeks to consolidate this practice in its activities, overcoming the difficulties, including language between Brazilians and Chinese.

In 2019, this alignment of requirements and working assumptions evolved with the formatting of the Contractor Security Plan. Among other measures foreseen in this plan, CTG Brasil defined a pre-qualification process for the security partners, so that they would only then be able to be hired, and included specific clauses in the contracts, which provide for financial penalties in case of non-compliance with the requirements foreseen in occupational safety.





**Our energy is
our people**

OUR WAY OF DOING IT

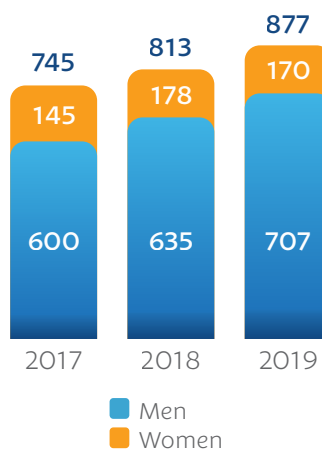
CTG Brasil seeks, increasingly, to stimulate collaboration between its teams, strengthening the exchange of knowledge between areas to conduct multidisciplinary projects, between generations to accelerate learning and between Brazilians and Chinese, in the exchange of knowledge and harmonious coexistence between the two cultures. This spirit was further strengthened in 2019, with the revelation of the purpose and review of the company's values (learn more on page 13), in addition to the intercultural training promoted for employees.

Internalizing this way of working is the company's main future challenge, with the dissemination of the new organizational culture to all employees throughout 2020. This work will involve more than a thousand people, including employees and third parties who work at the units – at the close of 2019, CTG Brasil's own team had 877 employees and 24 interns.

In the annual comparison, CTG Brasil's staff showed an 8% growth, in line with business development. The only significant change was the transfer of 68 employees from Rio Verde to CTG Serviços, which also impacted the evolution of the turnover rate.

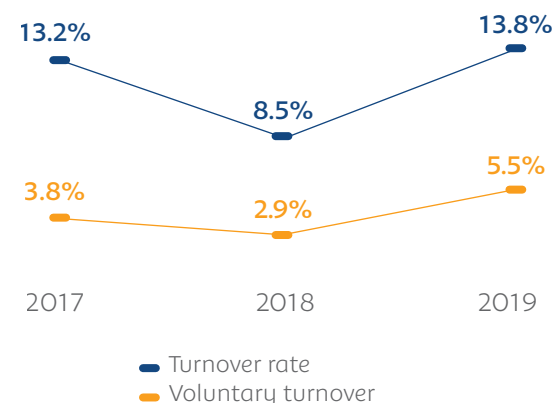


Our staff*



*CLT employees and apprentices are considered, all of them working full time.

Turnover



Welcome

The arrival of new employees, whether Brazilian or Chinese, is an important moment for the integration of professionals with values and operations. In 2019, the company started a program of visits to the plants for new arrivals. The result was evaluated as positive by the participants and led to the programming of two new classes in 2020, scheduled for July and December.

The integration journey of Chinese employees who come to Brazil through an exchange program of CTG Corporation also gained a new format last year. With a more structured approach, the journey includes English courses before coming to Brazil and a week of integration at CTG Brasil's headquarters upon arrival in the country, before the start of work activities at the plants. In addition, the Chinese collaborators and their Brazilian teams underwent intercultural training, with the objective of strengthening the connection between the professionals from both nations and broadening the vision of these cultures.

Family Day

Family Day is an action developed in all plants and in the corporate office to strengthen the relationship between employees and CTG Brasil and the pride of belonging. Family members of the employees are invited to get to know the hydropower plants and the company's headquarters and understand how the company generates renewable energy. The initiatives for accident prevention and protection of people are also presented, showing the care and attention to the lives of their relatives. In 2019, the event was attended by 233 family members of employees.



Team Building

In order to strengthen integration and high performance in the teams, six team building actions were carried out in 2019. In this format, participants meet and participate in dynamics and lectures that encourage teamwork and a sense of belonging and accomplishment at work. Last year's editions involved the areas of Engineering and CAPEX, Shared Services Center, Supply Chain, Legal, Human Resources and Brand, Communication & Sustainability.

QUALIFICATION AND DEVELOPMENT

The structuring of the CTG Brasil Academy throughout 2019 transformed into reality a new vision for the creation of the learning culture desired by the company. The value proposal is to provide development experiences that go beyond formal classroom learning and awaken in the professionals the protagonism of learning and improving themselves to elevate personal performance in a manner connected to organizational strategy.

The work of building this learning ecosystem, composed of six pillars, was another collaborative initiative in the company. Each pillar of the Academy has two sponsors, directors who lead the structuring of the portfolio in each area of knowledge and who will be responsible for the continuous improvement of the content made available, in addition to fostering a learning culture by promoting knowledge management.

In a complementary way, the Learning Team was created, a multidisciplinary team composed of 20 professionals who have the function of identifying the main learning demands and who today are part of the CTG Brasil Digital Academy. In addition, an external partner, specialized in corporate learning, helped in the entire process of structuring this ecosystem.

The official launch of this new approach to the development of our professionals will occur in 2020 with the launch of two major projects: Leadership Development Program, which will cover all leaders of the company, and CTG Brasil Digital Academy, a platform containing content related to the six pillars and which will be offered to all professionals. The other programs will be implemented throughout the year.

CTG Academy's Pillars



Leadership



People
and culture



Management
and technology



Operational
excellence



Market
strategy



Innovation
and discoveries

This action is in accordance with the Training and Development Policy, which provides, in addition to corporate, managerial and technical qualification actions, the offer of subsidies for educational and language training and the incentive to participate in congresses and lectures. The multiplication of internal knowledge is another vector on this front and was consolidated in the period with the creation of the Energy Experts and CTG Experts programs, in which employees share content on topics of greatest relevance to the company's business and markets.

184
professionals
participated in grant
programs



107
of them in
continuing
education courses



77
in language
courses

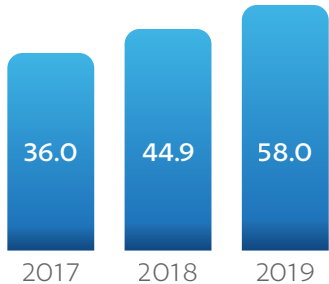


12
sessions
to multiply internal
knowledge, with the
participation of
155 professionals



In the last year, 50,800 hours were dedicated to employee training. Among these actions, the courses focused on commitment to safety are worth highlighting, being Life the number one priority. In-company training and on-the-job training, in which the professional learns by working on a day-to-day basis and in a practical manner, also contributed to the increase in the supply of qualifications, driving the growth of 29% of the average training hours per employee. During this period, a technical training matrix for operators was also developed, implemented for the 50 professionals hired during the year. The tool serves as a reference for individual development plans, combining face-to-face actions, online and on-the-job courses, and will be extended to the entire operation in 2020.

Average hours of training per employee

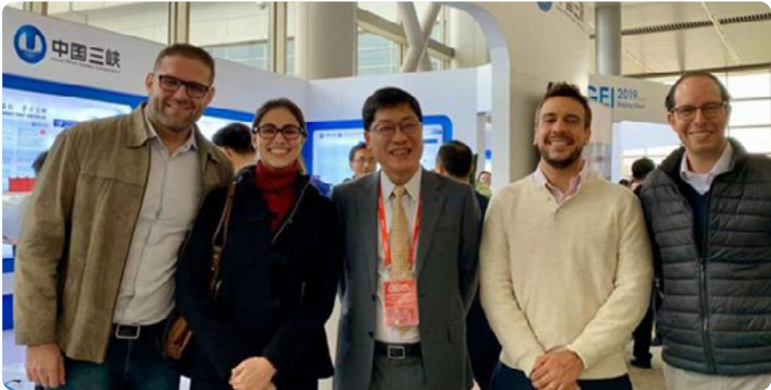


The offer of courses within the company, practical training and subsidies for educational and language qualification are in line with the Training and Development Policy

International experience

Since it began its operations, CTG Brasil has received Chinese employees from CTG Corporation to strengthen the integration of cultures and the exchange of knowledge. In 2019, this exchange took place as a two-way street, with the first group of Brazilian professionals going to China through the International Leadership Assignment Program, developed locally. Open to specialists and consultants who want to become leaders in the future and for those who are already leaders and occupy the positions of coordinators and managers, the initiative was widely disseminated to the internal public.

Nine employees were selected, four of whom traveled to CTG Corporation between October and December 2019, when they were able to understand a little more about business in the world and Chinese culture. Another five will do the exchange in 2020. This year, the company also intends to develop a similar program focused on the technical area, strengthening the intellectual capital of the operations teams.



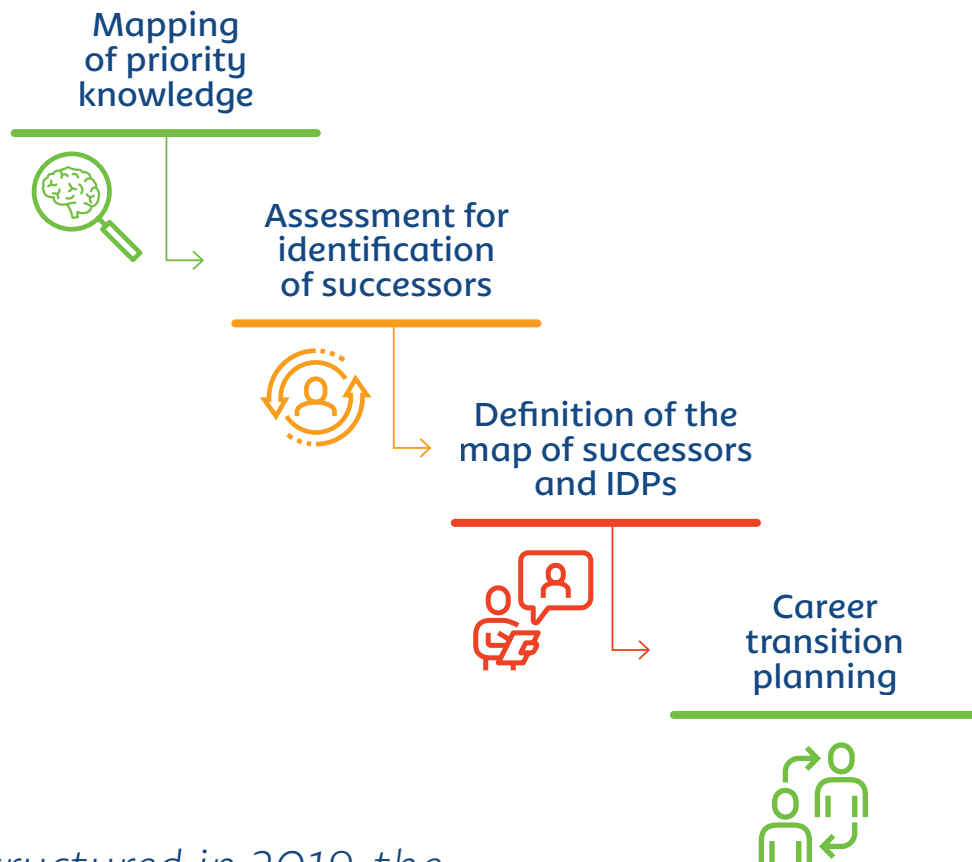


CAREER AND SUCCESSION

To preserve this lifelong learning is as important as developing knowledge. With this objective, CTG Brasil started in 2019 the succession planning for the Operations & Maintenance (O&M) area, which focuses on establishing a strategic process to plan the investment, minimizing the business discontinuity and preparing the transition of the talent bank in a sustainable way.

The first movement arose from a specific context in the company's plants, in which about 70% of the teams fall into a special retirement category and which will require, within a horizon of up to three years, these employees to retire. Incorporating the knowledge acquired by these people throughout their professional careers is fundamental for the company to sustain operations with high levels of reliability and efficiency.

Succession Program



Structured in 2019, the Succession Program aims to retain knowledge and facilitate the transition of the company's talent bank in a sustainable manner

The plan is structured in four pillars (see them in the diagram below), which define programs and processes with focus on knowledge management and preparing professionals to act in more complex positions. In 2019, we carried out two pillars, which have as their main objective to structure the mapping of priority technical knowledge and the readiness and potential of future successors. To this end, evaluations were applied to the entire O&M leadership, which will lead to individual development plans for these potentials.

From these actions, efforts in 2020 will be focused on the consolidated vision of the successor map and the elaboration of individual development plans to prepare these future leaders. Another work front is the planning of the best way to make this transition for those who are leaving the company. CTG Brasil's care for people will also be reflected in the search for the most respectful way to help these professionals in their career transition.

Another front for career development is the Program *Nova Geração* (New Generation), developed in 2018 and to be re-edited in 2020. The initiative supports the company's succession planning from a learning process, in which O&M managers act as tutors for young technicians, preparing them for new challenges.

Performance evaluation

In 2019, CTG Brasil improved its performance evaluation process, simplifying the assessed competencies model. Every year, all employees define goals and challenges, which are monitored by their managers. The objective is that each one understands their contribution to the company's strategy and acts as the protagonist of their professional trajectory, always aligning individual interests and ambitions to the company's expectations and demands.

The Performance Cycle, as the annual performance evaluation process is called, is applicable to all employees hired until August 31 and consists of three phases:

Inclusion of goals

Between March and April, each employee defines together with his/her manager the goals for the period and these are registered in the specific system of the Performance Cycle



Review of goals

In August, the goals can be adjusted in view of the evolution perceived in the year, always in line with the manager. This is also the time to include goals for the professionals hired after the first phase of the cycle



Final evaluation

Between the months of December and January, the steps are performed: self-evaluation, manager evaluation, calibration and map session, feedback session and Individual Development Plan (IDP)



Held annually, the Performance Cycle contributes to each employee being the protagonist of their career and acting in line with the strategic objectives of CTG Brasil

Performance calibration is a highly valued step, in which the leaders of the same Vice-Presidency meet to discuss the deliveries and competencies of their teams, gathering facts and evidence will add for a more consistent feedback process. In addition, one of the differentials are the map sessions, meetings similar to the Board calibration, which helps in the process of performance analysis and raises the maturity of the leaderships.

Percentage of employees who received performance evaluation*

	2019	2018	2017
By gender			
Men	99.0%	99.2%	55.8%
Women	101.2%	92.1%	66.2%
By functional level			
Executive Board	107.4%	101.6%	94.7%
Management	118.3%		
Administrative	96.7%	95.9%	63.6%
Production	92.3%	98.7%	45.9%
General	97.1%	97.7%	57.9%

*Percentages greater than 100% are cases where the number of employees who completed the evaluation cycle was greater than the headcount on 12/31.

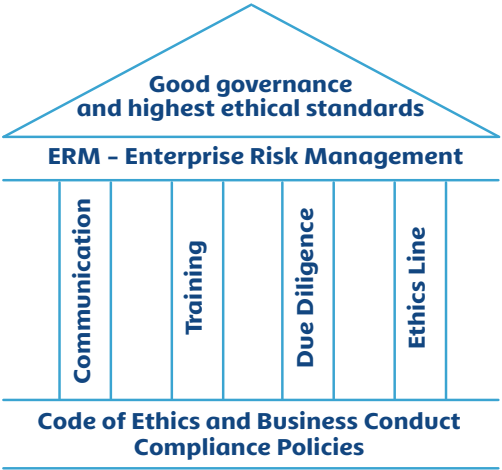


**Integrity,
always**

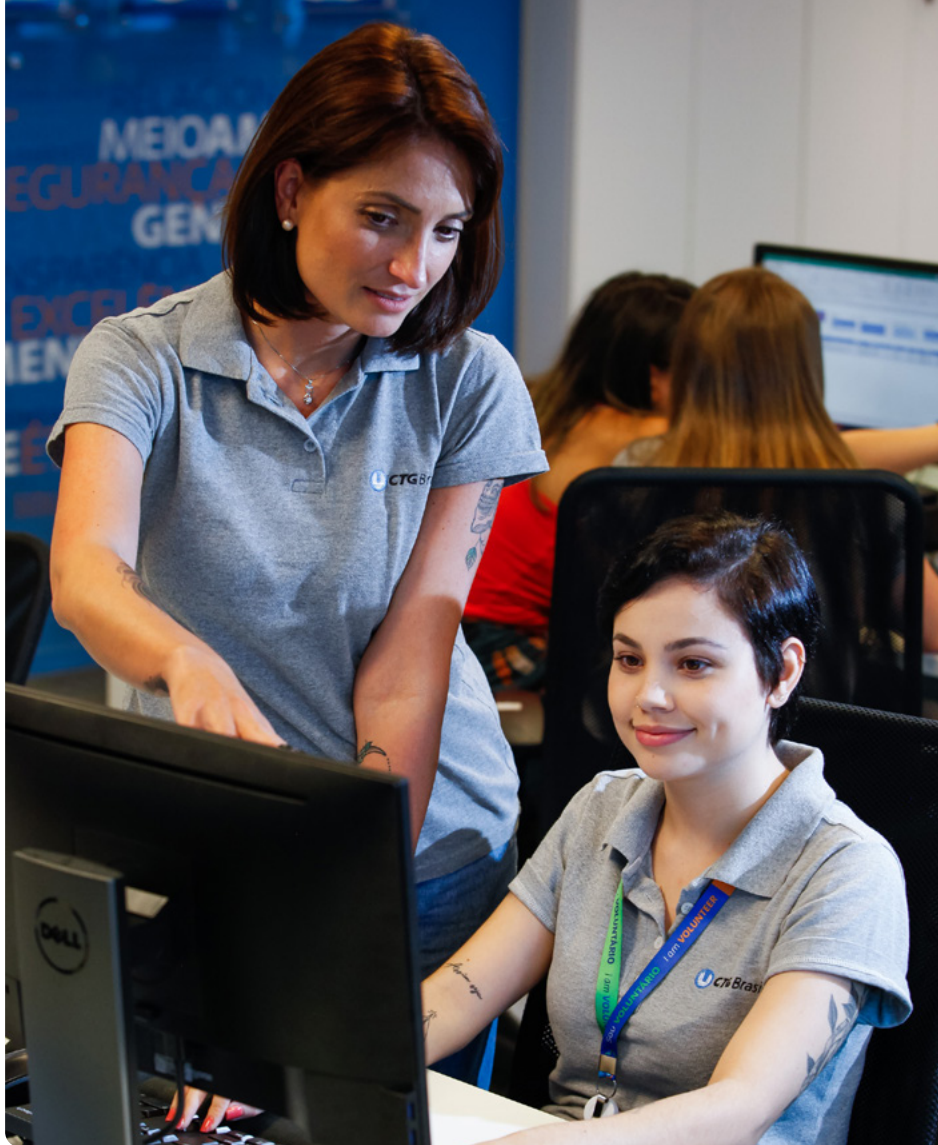
ETHICAL CONDUCT

CTG Brasil is committed to acting with ethics and integrity in all its activities. This is the basis on which the company has conducted its business and the employees are responsible for materializing this belief in the relationship they establish with all the publics that relate to the company.

To guide this performance, the company has a board dedicated to risk management and compliance issues, which reports directly to the CEO of CTG Brasil and with free access to ABM (Advisory Board Members, composed of representatives of CTG International), in order to ensure its independence in the recommendations and fronts it operates. CTG Brasil's professionals have the Code of Ethics and Business Conduct, with guidelines and guidelines to identify – and know what steps to take – in situations that go against the purpose and corporate values or, even, the legislation. The leaders have the responsibility to know the document and ensure that their information is transmitted and understood by their teams.



The Compliance Program, in turn, concentrates investments, projects and initiatives to ensure compliance with the Code and Compliance Policies and provide tools so that deviations of conduct can be communicated by employees and external audiences. The structure of the Compliance Program allows the compliance culture to be worked in a structured manner, with the dissemination of corporate values, the reinforcement of knowledge through training and communications, risk assessments of internal processes, compliance due diligences in relation to suppliers, business partners, and the engagement of the value chain.



Trainings conducted annually by employees and risk assessment processes at suppliers strengthen the corporate culture of ethics and integrity

The ethics and integrity trainings cover 100% of the employees and are given both in face-to-face and online events. Among them is the Compliance Week, held every year with a special program of lectures, activities and communications on the subject.

Since 2018, CTG Brasil has an online platform to provide distance learning courses to the internal public, which guarantees the reach of the teams installed in different locations in Brazil. For new hires, the training courses are held in person, during the integration period, when the Code of Ethics and Business Conduct is presented and detailed, as well as the corporate guidelines for topics such as anti-corruption, anti-fraud, fair competition, ethical conduct and expected behavior of each new employee. Every year, 100% of employees are trained and formally renew the acceptance of the Code of Ethics and Conduct, in addition to other compliance certifications, such as Conflict of Interest and Annual Compliance Review (specific to leaders).

The company also has a compliance due diligence process for suppliers and business partners, as well as for M&A (Merger & Acquisition) operations. Such process aims at carrying out analyses, conducted prior to the hiring or purchase proposal, regarding the eventual situations and involvement of such entities and individuals with acts of corruption, fraud, money laundering and other crimes that may bring financial losses or to the reputation of CTG Brasil from the relationship established with such counterpart. In the relationship with government agents, all employees are advised on how to proceed and report activities, through the Interaction Program with the Public Power. Through this systematic approach, the assessment of risks related to corruption covers 100% of operations.



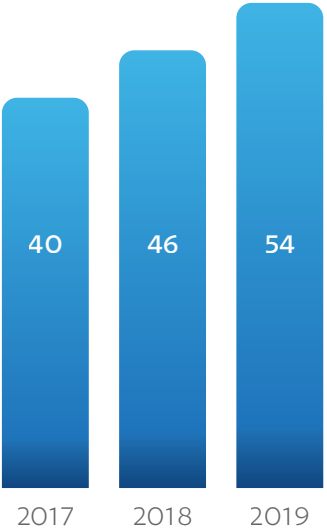
Linha Ética (Ethics Line)

Linha Ética (Ethics Line) is the tool made available by CTG Brasil, within the scope of the Compliance Program, to receive reports, doubts or denunciations of situations that violate the Code of Ethics and Business Conduct or the legislation itself. Such channel is managed by a partner (Safe Contact) in order to guarantee impartiality in the reception of each and every manifestation.

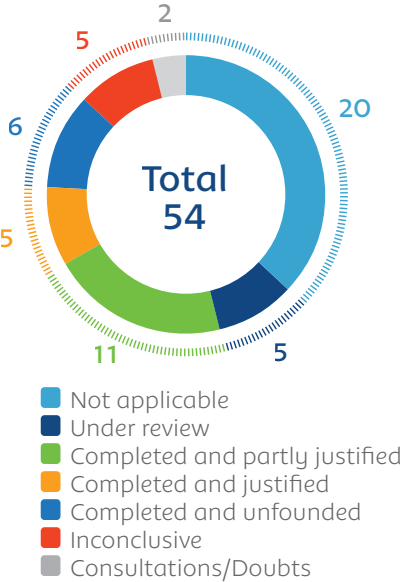
Employees – or any other stakeholder of the company – have access through an exclusive website (<https://www.contatoseguro.com.br/ctgbr>) or by telephone 0800 601 6888, at any day or time.

After reception and initial analysis, all reports are directed to CTG Brasil's Compliance team and independently investigated. For the most sensitive cases, the Ethics and Compliance Committee, coordinated by the Risk and Compliance Director, has the role of discussing and deliberating collectively, in addition to providing executive support to the investigations. With this model, CTG Brasil guarantees the secrecy and confidentiality of the information provided, including the option for the author to choose to remain anonymous.

Manifestations received through Linha Ética (Ethics Line)



Manifestations received in 2019 by status



Value chain

In order for the commitment to ethics and integrity to permeate its entire value chain, CTG Brasil also makes available the Code of Ethics and Conduct for Suppliers. The document presents the guidelines that the company expects from its partners during the business relationship, in line with the corporate values.

Among the guidelines established by the Code is CTG Brasil's opposition to the adoption of degrading labor practices that are not in conformity with the legislation and the prohibition of establishing contracts with suppliers that use child labor or subject their employees to slave-like working conditions. The company includes contractual clauses that require respect for human rights and the adoption of good socio-environmental practices, as well as the clause that refers to compliance with applicable anti-corruption laws. In the context of the Compliance Program, there are also initiatives to train and inform third parties and contractors about the corporate values, as well as about legal issues and compliance with contractual clauses related to integrity and anti-corruption.

The company established contracts for the purchase of materials, services and electric power with about 1,600 companies in 2019, totaling expenditures of around BRL 3 billion. In hiring these partners, suppliers close to the power plants are prioritized whenever possible, contributing to the generation of income and employment in the direct regions of influence. The company also maintains permanent contracts with large companies and owners of the latest technology and equipment.

The largest volume of expenses is concentrated in partners responsible for maintenance activities of the hydropower plants equipment, which requires the selection of partners with high technical capacity

and compliance with CTG Brasil safety standards. The suppliers contracted for these and other activities – such as surveillance, cleaning, transportation and others – have their performance evaluated. The monitoring is registered in digital systems, allowing the traceability of processes and the control of SLAs (service level agreement) established in the contracts. CTG Brasil's databases also allow the monitoring of third party management, enabling the identification of risks related to suppliers' compliance with labor legislation.

100%
of contracts
with human rights
clauses



RISK MANAGEMENT

The monitoring of risks that may interfere with CTG Brasil's capacity to develop and generate value with its business is performed transversally, with the support of an area of Corporate Risk Management and Internal Controls that is based on internationally recognized methodologies for this management (ISO 31000 and COSO) in order to, in a structured manner, provide visibility and capacity to manage corporate risks (ERM or Enterprise Risk Management).

From this methodology, the areas are accessed in order to identify those responsible for the risks (risk owners), help them to identify the degree of risk and the probabilities of materialization, as well as actions that mitigate their occurrence. At the end, a matrix has been structured with the main risks of CTG Brasil in the Reputational, Financial, Strategic, Regulatory, Legal and Operational spheres, among others. Such matrix of risks is reviewed periodically or in face of specific needs.

In 2019, the company mapped its internal risks related to cyber security and defined action plans based on the points of improvement identified. The actions, which will be implemented throughout 2020, include the review of security policies, process improvements and the implementation of the SOC (Security Operation Center), in addition to more efficient monitoring and registration tools. In addition, good practices already adopted, such as periodic system access reviews, internal and external audits, and intrusion testing at least twice a year have been maintained. Another advance of the year was on the employees' awareness front: the traditional lecture approach was replaced by a gamification model, which has generated greater engagement from the internal public.



*Based on best practices
and market methodologies, CTG Brasil
prioritizes risks related to business
and defines mitigation actions*

CTG Brasil monitors and manages the main financial risks that may affect the normal course of its activities. Part of its risks are supported by an insurance portfolio that takes into consideration the nature and degree of severity, in order to eliminate or mitigate possible financial losses. The main insurance coverages cover operating risks, general civil liability, environmental and executive risks.

Financial management is governed by its own policies aimed at preserving financial assets in the face of market volatility. In this way, the main macroeconomic and sectorial indexes that impact cash and debt management are monitored, which minimizes possible risks of loss arising from financial and banking operations.

The company actively monitors customers' credit ratings through its own methodology, based on market information and statistical models, with a view to mitigating possible losses due to default.

Financial risks management is supported by its own policies, insurance coverage and customer credit rating



Hydrological risk

Hydrological risk is an intrinsic condition of the Brazilian power generation sector, based on hydropower plants with large reservoirs and, therefore, vulnerable to the seasonal rainfall regime in the regions where they operate. The minimization of this risk occurs through the performance of the Risk and Portfolio, Energy Planning and Operation areas, internal structures that evaluate future scenarios for hydropower availability and suggest protection strategies to the commercial areas.



In recent years, due to periods of unfavorable hydrology, increasingly prolonged and severe droughts, hydropower plants have generated below their physical guarantees. In addition, the import of electricity, the contracting of reserve power, delays in power transmission structuring projects, anticipation of physical guarantee of structuring projects, Generation Outside the Order of Economic Merit (GFOM) contributed to the displacement of the hydraulic plants participating in the Energy Reallocation Mechanism (ERM), which were exposed to non-hydrological risks, negatively impacting their generation capacity. This generation deficit occurs when the GSF (acronym for Generation Scaling Factor, which is the ratio between the total production of the ERM and its physical guarantee) is less than 1. This means that the generation of the hydropower plants belonging to the ERM is less than the sum of the physical guarantee of the system as a whole. To cope with this difference, the generators must resort to energy purchase to mitigate this exposure. Normally, these purchases are made in the short-term market with values established by the Settlement Price for Differences (PLD), calculated by a methodology of the Chamber of Electric Energy Commercialization (CCEE).

All CTG Brasil companies are exposed to the GSF, with different levels of protection and mitigation of this risk.

Through the Brazilian Association of Independent Energy Producers (Apine), Rio Parapanema and other generators that operate in the ACL filed a lawsuit in 2015, with an injunction request, in face of Aneel, with the objective of purging from the GSF calculation all non hydrological risks.



The injunction benefiting Apine (and consequently Rio Paranapanema) lasted from 2015 to October 2018, when Aneel obtained from the Superior Court of Justice (STJ) the suspension of this injunction, preserving the GSF values withheld between July 2015 and February 2018. The decision has no impact on the financial statements of Rio Paranapanema, since these amounts had already been provisioned. Additionally, the decision determined that the impacts related to GSF were accounted for retroactively to February 2018, from when Rio Paranapanema started to support them in the liquidations carried out by the Chamber of Electric Energy Commercialization (CCEE).

Rio Verde, in turn, filed a lawsuit against Aneel, in which it obtained an injunction protecting it from 95% of the impact of the GSF. Rio Canoas adhered to the renegotiation of the hydrological risk provided in Law No. 13,203 of December 8, 2015, hiring the product SP90, being exposed in 10% of the hydrological risk in this modality. The portion of its energy contracted in the ACL is subject to the effects of the GSF.

The issue, however, is not solved. In the regulatory sphere, PL 3,975/2019 (already approved by the Chamber) presents a solution for the treatment of non-hydrological risks attributed to generators through compensation in extension of the concession term. The bill was approved by the Senate Economic Affairs Committee (CAE) and will now proceed to a vote in the Senate Plenary.

PL 3,975

approved by the
Chamber in 2019,
will proceed to a
vote in the Senate



Dam safety

There are different operational risks that can impact the operation of hydropower plants and one of the most demanding preventive and control actions is those related to accidents with dams built for the formation of water reservoirs. Although the probability of a rupture of these structures is very low, the impact caused by such an occurrence would be significant, resulting in financial losses and may have serious consequences on communities.

Therefore, the issue of dam safety is considered strategic for CTG Brasil, conducted in a structured manner and in full compliance with the legal requirements established by the country's regulatory agencies. The National Dam Safety Policy was established by Law 12,334/2010 and covers all types of dams – for accumulation of mining tailings and formation of water reservoirs and for supply and generation of energy. Aneel Resolution 696/2015 regulates the legislation specifically for the electricity sector.



CTG Brasil has a Dam Safety Plan (PSB) that covers 100% of its hydropower plants. Based on compliance with legislation and corporate policies, the PSB establishes several procedures and routines that must be adopted to mitigate risks and ensure the safety and operational efficiency of these enterprises.

Within the PSB, each dam has a monitoring system composed of several listening instruments installed inside the structures, which are routinely read and evaluated and make it possible to identify abnormal dam behavior. In addition, safety inspections of dams are carried out periodically and allow the identification of any abnormal situation that may occur in the dam.

In addition, all the power plants have an Emergency Action Plan (EAP), a formal document that establishes the actions to be taken in the event of an emergency at the dam. The EAP is preventive in nature and aims to ensure the safety of the undertaking and the protection of the populations located in the floodable areas, especially in the Autonomous Zone (ZAS).

This set of actions is structured within the Dam Safety Plan (PSB), which is the baseline for the management of dam safety processes.

CTG Brasil adopts the best dam safety practices and, as a consequence, has its enterprises classified as low risk and in full compliance with the Brazilian dam safety legislation.

In 2019, the first training for the internal public was held, with the participation of 440 employees. As of 2020, this qualification will be held annually, contemplating several emergency scenarios and covering different hierarchical levels. The training will also have an online platform, which is in the final stage of development.

Formal guidelines, periodic inspections, emergency planning and recurrent employee training contribute to ensuring the safety of dams



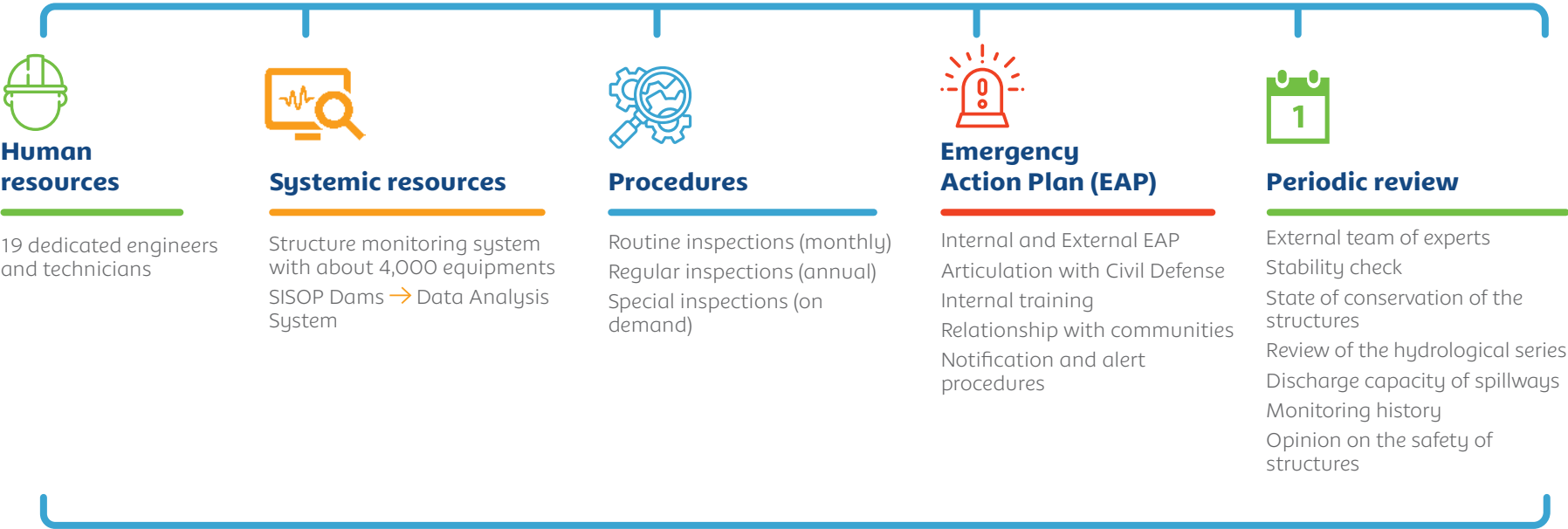
100%
of CTG's plants with
Dam Safety Plan



CTG Brasil also has the Emergency Operation System (SOSEm), a set of norms and procedures for operation and maintenance, involving technical, organizational and administrative aspects, with the objective of ensuring the safety of the hydraulic operation of all reservoirs. The SOSEm defines the criteria for issuing alerts and warnings to city governments and other agencies representing the civilian population when the conditions of rivers and reservoirs are outside the safety standards. The system also includes disclosure meetings, which were held throughout the period.



CTG Brasil's Dam Safety Plan (PSB)



Requirements

Meets the National Dam Safety Policy (Law No. 12,334/2010)
In accordance with Aneel regulation (Resolution 696/2015)
Follows the internal policies of CTG Brasil

CORPORATE GOVERNANCE

CTG Brasil seeks to adopt good corporate governance practices. In addition to around 100 policies that formalize the premises and management practices, the company has the Compliance Program and structured programs for due diligence in its supply chain (learn more on page 36). In all areas, mechanisms and procedures ensure that all relevant aspects are brought to the attention of non-statutory Directors and, when appropriate, the Executive Committee and the Advisory Board, the highest decision-making bodies for strategic decisions, in order to ensure decision-making that seeks the highest level of governance and ethics, while mitigating risks to the business, shareholders and to the employees and executives themselves.

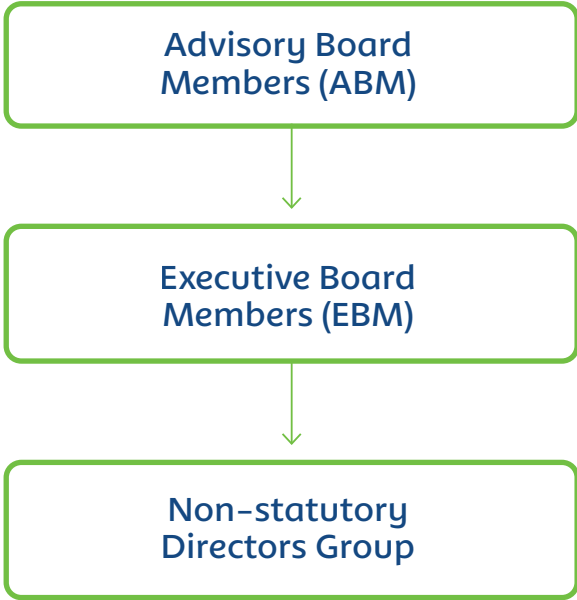
The group of non-statutory Directors, formed by 23 professionals, is responsible for conducting activities in each area of activity and for multidisciplinary engagement in projects that demand a systemic and comprehensive view of CTG Brasil.

The Executive Committee, also known internally as EBM (Executive Board Members) and formed by the CEO and vice-presidents, is legally responsible for conducting business and meets periodically for collegiate deliberation and key issues. Its members, elected by CTG Brasil's shareholders, supervise and monitor the performance of the Board.

The Advisory Board, or ABM, is formed by representatives of CTG International, which is a subsidiary of CTG Corporation. This body oversees the implementation of the strategy by the Executive Committee and the non-statutory group of Directors. Among its duties, the board monitors the directors' actions; examines books, company documents and the Management, Executive Board and Financial Statements Report; approves the annual business plan, the annual budget or capital expenditure

(Capex); and submits to the partners' meeting of CTG Brasil a proposal to establish compensation or benefit plans for executives. All EBM and ABM meetings are managed through a system, which gathers minutes, minutes and decision-making acts of the instances.

CTG Brasil's governance structure



The controlled companies have their own corporate governance structures. Rio Paranapanema is a publicly traded company with shares traded on B3, the São Paulo Stock Exchange. Among the good governance practices adopted, we highlight the presence of a member of the Board of Directors (and his/her alternate) elected by the employees, the external audit of the Financial Statements and transparent disclosure of its Management Report, and the public availability of the minutes of shareholders' meetings and Board of Directors' meetings. The Board of Directors of Rio Paranapanema currently relies on the advice of the Strategic Commercial Committee, with the main function of assisting the body with a commercial focus on general business orientation. The Fiscal Council, non-permanent and installed in 2019, has three effective members and their respective alternates.

Rio Paraná, Rio Canoas and Rio Verde are privately held and each has its own Board of Directors and Executive Board, in addition to the Fiscal Council, of a non-permanent nature, which may be installed by resolution of the Shareholders' Meeting.

To know more

Click [here](#) and access the Rio Paranapanema Investor Relations website for more information on the structure and governance practices of this subsidiary of CTG Brasil, the only one with capital traded on the stock exchange.

Crisis management

Knowing how to act in an emergency situation is a condition to ensure the proper flow of information and decision-making in an agile and assertive manner. In 2019, CTG Brasil raised the level of readiness to deal with this type of occurrence when designing its Crisis and Business Continuity Plan for all its units. This plan defines which actions should be taken in each crisis scenario, such as a serious accident. Thus, everyone knows who should be informed, within what timeframe and with what type of information, allowing the organized flow of information to manage each situation. In 2020, the training of the company's executives in the plan will begin, for its effective implementation.



**Excellence in
everything**

MODERNIZATION OF PLANTS

Installed in Brazil since 2013, CTG Brasil has a portfolio that brings together hydropower plants built at different times and with very different technologies. Some of them are around 50 years old, such as the hydropower plants of Jupiá and Ilha Solteira (Rio Paraná), and others have not yet completed a decade of existence, such as Salto and Garibaldi. To increase the availability of these two plants, the company approved an ambitious investment plan for the next decade – around BRL 3 billion. The resources will allow modernizing and increasing the efficiency of the generating units, ensuring a much more sustainable operation throughout the concession period.

The first phase of this project was concluded in 2019, with the refurbishment and modernization of four turbines – two in Jupiá and another two in Ilha Solteira – under an investment of BRL 300 million. The second phase of the project, expected to be concluded in 2021 and budgeted at BRL 704 million, includes intervention in eight generating units, as well as improvements to spillways and other auxiliary systems. In total, the 14 generating units in Jupiá and the 20 in Ilha Solteira will be modernized, which represents an unprecedented effort in the country.





CTG Brasil will invest BRL 3 billion in ten years to modernize 34 generating units in Jupiá and Ilha Solteira

**To know more**

Click [here](#) and watch the series of videos about the modernization project

This endeavor constituted a major technical and operational challenge, since CTG Brasil kept the plants in operation during the modernization. With an installed capacity of almost 5 thousand MW, the two hydropower plants are extremely important for the operation of the National Interconnected System (SIN) and could not be totally shut down.

Among the main legacies of the first phase are the learnings of the entire team, which will allow the conduct of the next stages of modernization of these and other hydropower plants in an even more agile, safe and efficient way. The interaction between Brazilian and Chinese specialists, the creation of safety protocols, the adjustment of action plans for the movement of heavy machinery and other actions have brought lessons that will be definitely incorporated into the human and intellectual capital of the company, one of the pioneers in the modernization of the Brazilian electrical infrastructure.


Automation and digitalization

The modernization of CTG Brasil's generation park is much more comprehensive and complex than the simple reform of turbines and electromechanical equipment. One of the greatest benefits of the plan is to allow the plants to reach a new level of operation, aligned with modern technologies and digitalization trends in the electric sector.

In Jupia and Ilha Solteira, the second phase of the modernization, which started at the end of 2019, foresees the application of automation sensors and other equipment that will allow the digitalization of the operation, leaving manual and analog processes in the past.

The largest hydropower plant of Rio Paranapanema, the Capivara Plant was also modernized last year. CTG Brasil invested BRL 150 million to replace four generating units and repower three of them, which increases the installed capacity of the asset by 24 MW – totaling 643 MW. The project was concluded 30 days before the initial schedule. At the Chavantes Plant, the modernization was concluded in 2018.



**BRL 150
million** 
invested in the modernization
of Capivara HPP



With these initiatives, CTG Brasil's plan is to allow the integration of the operation and monitoring processes of the plants to a new Power Generation Operations Center (COG), which is being structured at the Ilha Solteira Plant. From the COG, the company will be able to operate on 14 hydropower plants and also monitor the performance of wind farms and other hydropower plants in which it has an equity stake.

The use of state-of-the-art technologies for remote control and supervision of equipment will make the COG a reference for the market. The new space will be equipped with database systems for storing and processing a large volume of information, with tools for analysis using artificial intelligence.

The COG in Ilha Solteira is scheduled to be inaugurated at the end of 2020. Once in operation, it will allow the new generating machines installed in the first phases of modernization – in all plants of CTG Brasil – to be operated in a more efficient and agile manner. The maintenance and operation teams will be responsible for occasional interventions, according to the recommendations and analysis made from the data collected by the new intelligence center.

OPERATIONAL EFFICIENCY

Promoting safe and efficient operation of hydropower plants is strategic for CTG Brasil's business model, for ensuring the availability of assets and the generation capacity to deliver as much renewable energy as possible to the National Interconnected System (SIN). To this end, the company has drawn up a plan to standardize work procedures, improve equipment and train employees to comply and align with work guidelines.

In 2019, the indicators that measure the availability of the plants evolved in relation to the previous year, surpassing the regulatory indexes established by Aneel. These results are related to two work fronts conducted by CTG Brasil – the Production Management System and the Safety Inspection Plan – with the objective of further improving performance and asset management. Both initiatives were built with the partnership between Brazilian employees and Chinese specialists from China Three Gorges, incorporating the best practices to improve the entire operation and maintenance (O&M) structure of the generation park.

Two key initiatives, the Production Management System and the Safety Inspection Plan, were implemented in 2019 to further improve asset performance and availability

Availability of generation*

	2019	2018	2017
Ilha Solteira HPP	93.88%	92.57%	91.98%
Jupiá HPP	92.31%	92.84%	91.88%
Garibaldi HPP	98.43%	97.87%	96.60%
Salto HPP	96.44%	96.67%	96.72%
Jurumirim HPP	99.33%	99.04%	99.02%
Chavantes HPP	98.47%	98.39%	97.65%
Salto Grande HPP	97.48%	96.32%	95.04%
Canoas II HPP	98.22%	97.52%	96.11%
Canoas I HPP	97.41%	97.65%	98.29%
Capivara HPP	98.30%	97.78%	95.08%
Taquaruçu HPP	95.41%	95.75%	95.87%
Rosana HPP	97.43%	95.21%	94.63%

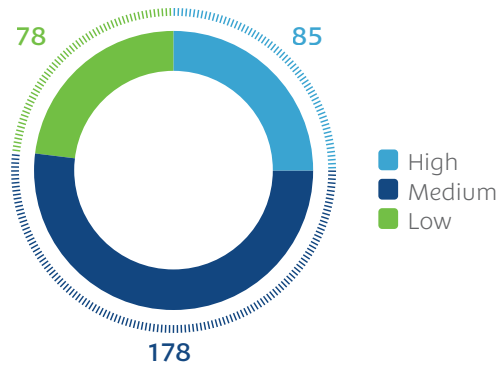
*The Availability Index is calculated through TEIP and TEIfa (equivalent rates of programmed and forced unavailability, respectively, considering 60 monthly values calculated, for the months immediately preceding the current month). Its calculation formula is: $ID = (1 - TEIP) * (1 - TEIfa)$. The values presented refer to the month of December in each year.

Within the Production Management System, the teams analyzed over 700 documents and operational guidelines and held in-depth technical discussions, observing Brazilian legislation and the best practices applied to the operation and maintenance of hydropower assets in China and Brazil. The new procedures have already begun to be implemented and the work will continue in 2020, with the intensification of training for employees of all hydropower plants.

With the Safety Inspection Plan, CTG Brasil focused on facility safety. The plan defines actions for the six main operational risks: accidents with people; accidents with dams; flooding of the powerhouse; accidents with main equipment; simultaneous shutdown of several generating units in the same plant; and cyber safety. In all, 341 measures were defined and categorized in relation to priority (high, medium and low). Of these, 247 were completed and another 94 will be finalized during 2020.

Despite these efforts, a fire was registered in October at a transformer at the Ilha Solteira plant, with no victims or impacts on local biodiversity, which was adequately controlled by the local emergency brigade team until the fire department arrived.

Actions defined in the Safety Inspection Plan by priority level



Connectivity in telecommunications

The infrastructure for communication between the plants, the offices and the National Electric System Operator (ONS) is fundamental for achieving the availability indices required by the concession contracts and aimed at in the company's strategic planning. The strength and continuity of this network guarantee the adequate flow of information in an agile and transparent manner.

In 2019, CTG Brasil replaced the UHF radio communication systems at the Rosana and Taquaruçu plants and the Palmeiras and Retiro SHPs, and mobile telephony (DECT) in all other units of Rio Paranapanema. The connection links of Chavantes, Capivara and Garibaldi plants and Palmeiras and Retiro SHPs were also updated, improving the performance of corporate applications, Internet access and the quality of the videoconferencing solution in these locations. In addition, the implementation of the operating network that will meet the demands of the new Generation Operations Center (COG) was initiated.



Commercialization

The commercialization of the energy generated in the hydropower plants is CTG Brasil's source of revenue generation, which guarantees the return on the capital invested by the shareholders and the expansion of the generation capacity through the acquisition of new assets and improvement of the current park to obtain more operational efficiency. The commercial strategy outlined by CTG Brasil focuses on the mitigation of hydrological risk (known by the acronym GSF) and the feasibility of a higher commercial margin.

Therefore, the company has developed tools for analysis and understanding of hydrological scenarios that have allowed the purchase of energy at more favorable times of the market, reducing the costs of this operation and increasing the margin of marketing. In the last three years, there has been a 12.3% reduction in energy purchase costs.

The volume of energy sold was 31,357.04 GWh, an increase of 3.8% over the previous period. These data do not consider Short Term Trading (MCP) and Energy Reallocation Mechanisms (MRE).



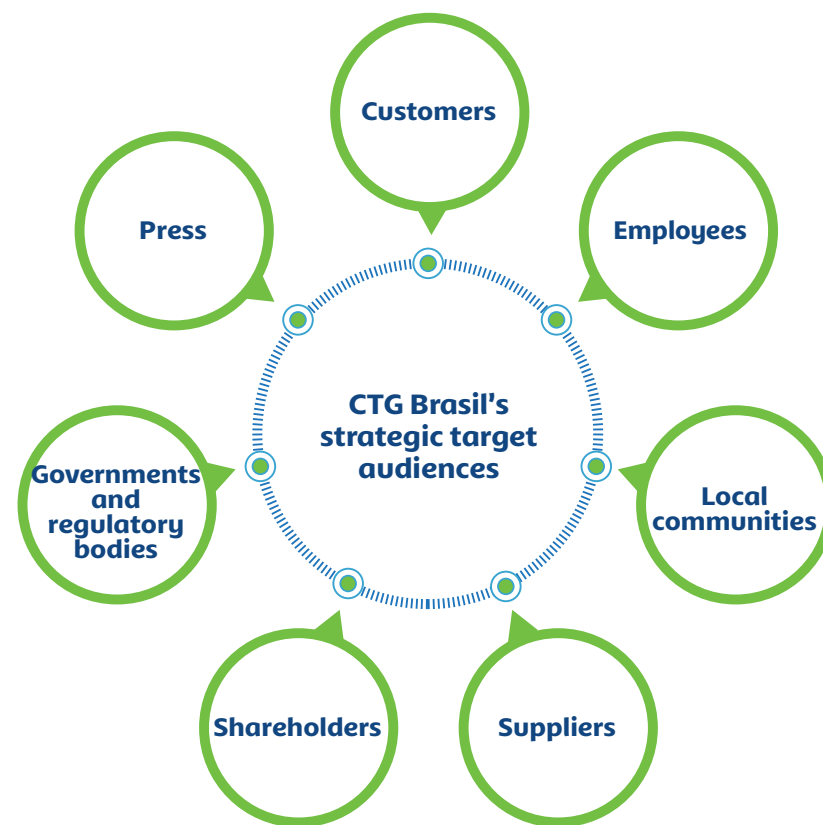
ENGAGEMENT WITH STAKEHOLDERS

In order to efficiently develop its business and fulfill its purpose, CTG Brasil establishes ethical and transparent relationships with all stakeholders. In this way, the company seeks to expand the positive impact of its management beyond the benefit of renewable energy in the national energy matrix, acting for the modernization of the electricity sector, for the empowerment of customers and the development of local communities.

Through different communication channels and dissemination strategies, the company highlights its positioning in the electricity sector and its goal of creating long-term value, contributing to the country's growth through operational efficiency, responsibility for the environment and concern for people.

In 2019, CTG Brasil launched the first long-range advertising campaign in the national market. With an investment of BRL 1.5 million, the company created and published pieces of communication on TV, radio and digital media to publicize the positive impacts of its business model under the theme "More than energy, clean energy". The publicity showed the public the attention with people's safety, operational efficiency and a careful look at the environment and the communities near the hydropower plants.

In social networks, this interaction with strategic audiences becomes even more dynamic and permanent. The company maintains corporate pages on the main social networks (**Facebook, LinkedIn, Instagram, We Chat and YouTube**) to share videos, photos, news and other relevant information about the company's operations and plans, in addition to making room for dialogue and receiving comments and suggestions. At the end of 2019, more than 148 thousand followers followed CTG Brasil on these digital platforms.



To know more

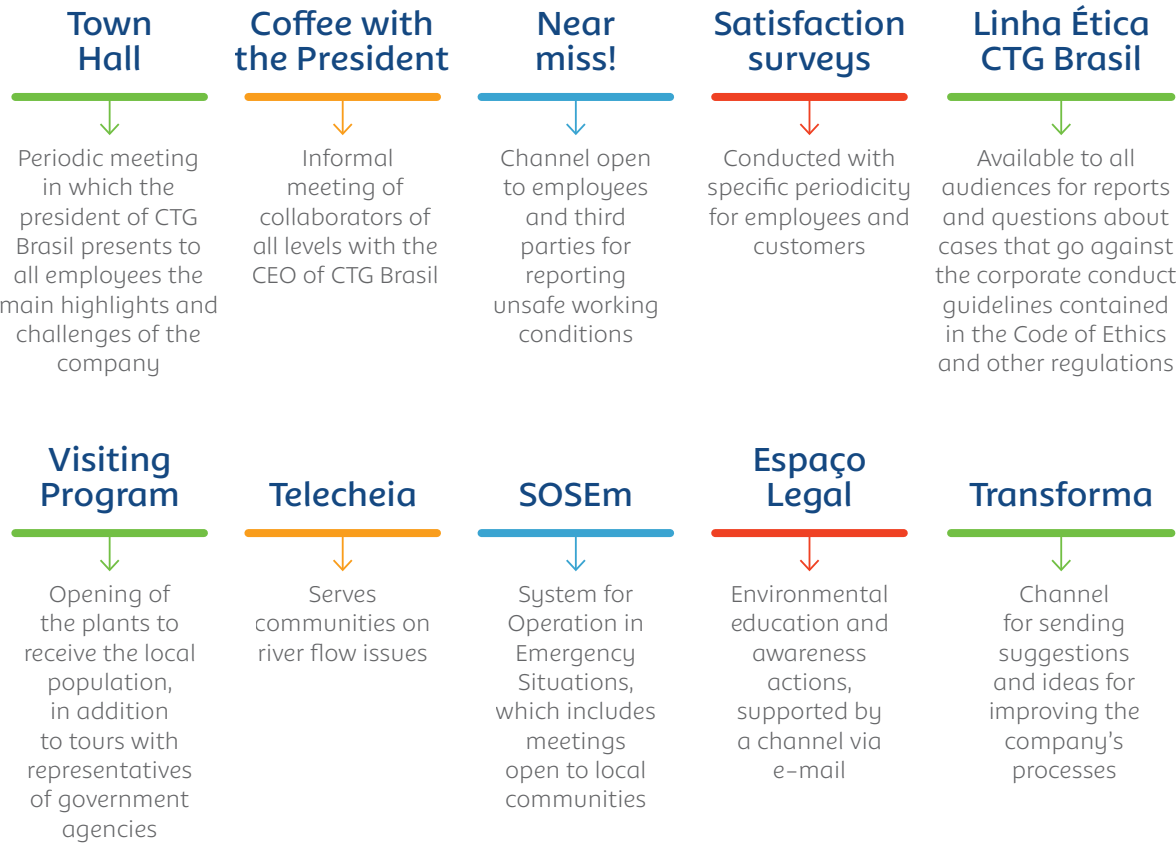
Click here and watch the "More than energy, clean energy" campaign video

Information is essential so that the external public can increasingly understand the importance of the investments and improvements that CTG Brasil makes in the country. Therefore, the company maintains an ethical and transparent relationship with the national and regional press outlets, allowing journalists to visit the units to learn about and report on the management model and the challenges of operating large hydropower complexes. In this way, the entire population can understand the company's plans to ensure the safety of dams and other relevant issues to meet the country's energy demand.

In the dialogue with public bodies, an area specialized in Institutional Relations conducts meetings and visits to the plants with representatives of the executive and legislative branches. The objective is to keep the dialogue channel always open, especially in view of the company's high investment in the country, oriented towards the long term and socioeconomic development.

The relationship management structure with stakeholders also allows the company to establish an open and timely communication strategy with its employees. The teams of professionals, who work in different locations in Brazil, are informed about the work plans and news in the management model with agility, through digital channels, internal campaigns and daily communications on the main topics and issues relevant to management.

Main structured dialogue channels



The structured dialogue channels and the daily interaction of the teams with the various stakeholders allow the sharing of information in a transparent and timely manner

LOCAL COMMUNITIES

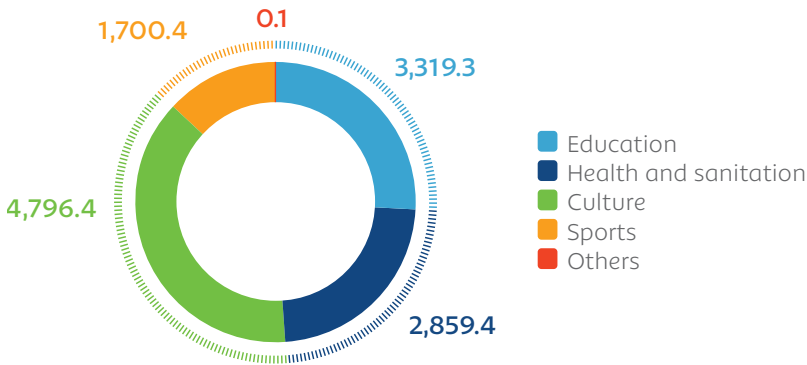
The investments made by CTG Brasil in projects that benefit the communities located close to the power plants promote education, culture and the encouragement of sports and advances in health and sanitation. These actions are connected to the company's objective of acting as an agent of social transformation, extending the benefits of its business model.

In 2019, the projects supported had a positive impact on 72 municipalities, through investments made with the company's own resources and others leveraged by incentive laws (culture, sports, PRONON, PRONAS and municipal funds for children and the elderly). Around 868,000 people benefited from the 22 projects executed during the year. The amount allocated by CTG Brasil in the period – part of it in actions carried out still in 2019 and another part directed to initiatives to be implemented in 2020 – totaled BRL 12.7 million, an increase of 41.8% compared to 2018, mainly due to the greater availability of the incentivized resources, which represented 96% of this total. In addition, the Volunteer Program promoted 22 actions throughout the year, with the participation of 689 volunteers, among employees and their families and friends, and benefiting about 5.6 thousand people.

The social projects supported are evaluated by CTG Brasil's Sustainability Committee, an executive structure that coordinates the actions and initiatives to be carried out in line with the company's sustainability strategy. Based on this analysis, the Executive Committee and the Advisory Board approve the investments, which benefit society in different thematic lines, strengthening the development capacity in a manner connected to the main local demands.



Social investment by area in 2019 (BRL thousand)





Strategy for private social investment

In 2019, CTG Brasil conducted a structural assessment to define its private social investment strategy aimed at promoting the sustainable development of local communities. The work was conducted with the support of the Institute for Private Social Development (IDIS), a non-profit organization that helps organizations and investors to plan the efficient allocation of financial, human and technical resources.

Based on benchmarking evaluations of best practices, alignment with corporate policies, interviews with the company's leadership and dialogue with the communities, CTG Brasil identified the surroundings of the units as the primary focus of action. The purpose of this involvement is: "To promote local development in the communities where we are present, fostering income generation through employment and entrepreneurship".

Support to communities will have even more significant positive impacts to the extent that it is directed at promoting income generation in areas related to the company's operations, offering support to communities for activities connected to local vocations – subsistence fishing, aquaculture, sustainable tourism, among other examples.

The execution of this strategy will be conducted through own projects and also by sponsoring projects developed by NGOs and other entities.

Most of the social investments in the last year have been destined to projects that value culture and education, strengthening the rescue of the history of the communities and the relations with the territory. In Santa Catarina, for example, Rio Canoas has supported the restoration of Casarão Juca Antunes, a property listed as a historical and cultural architectural heritage in the city of Lages. Starting in 2020, the company will contribute to the start of operation of the Archaeology Center, formed by a museum, laboratories and classrooms at Universidade do Oeste de Santa Catarina (Unoesc), reinforcing the commitment to education and local social development.

One of the main movements to engage the community is CTG Brasil's Visiting Program to the plants installed on Rio Paraná and Rio Paranapanema. With the objective of bringing more knowledge about the electric sector, providing more education, culture and leisure to the communities, the company opens its doors for monitored visits in a route that includes the operation of a hydropower plant, including the command rooms, turbines and dams. Participants also receive information about the socio-environmental programs developed corporately.

In 2019, more than 7,000 people participated in these visitations. A large part of this public is made up of students from the public school system, who can better understand the functioning of the Brazilian electricity system and the importance of the power plants for the country's energy security. At the Jupiá and Ilha Solteira power plants, Rio Paraná, and at the Rosana, Chavantes and Salto Grande power plants, Rio Paranapanema, visitors can learn a little more about the power plant's construction and the development it has brought to each region through historical exhibitions.

CTG Brasil also makes the Telecheia Channel available to local communities, which is available 24 hours a day via free telephone to clarify doubts related to the flow of the rivers in which the plants are installed.

To know more

Click on the links and take a virtual tour around our plants



Ilha Solteira Power Plant



Chavantes Power Plant



Removal of the Garibaldi transmission line

In 2020, CTG Brasil will begin implementation of the plan for the total demobilization of the provisional transmission line built in 2013 to connect the Garibaldi HPP to the Barra Grande substation. This asset will be replaced by the definitive transmission line connecting the power plant to the Abdon Batista substation, according to the initial plan approved by Aneel.

The towers and cables to be removed pass through approximately 70 rural properties with a length of about 26 kilometers. The removal mainly meets a requirement set forth in a resolution of the state environmental agency and a lawsuit arising from lawsuits filed by landowners who did not renew land use agreements and requested the removal of the transmission line. The other landowners affected by the transmission line accepted the installation of provisional assets and have contracts signed until the complete removal of the structures.

CORPORATE REPUTATION

In its management model, the company adopts mechanisms to measure and evaluate CTG Brasil's reputation among its stakeholders. This process, conducted based on the RepTrak methodology, developed by the Reputation Institute, subsidizes the action plans to strengthen the brand and the attributes of differentiation in the electricity sector.

The survey conducted in 2019 assessed the perception of customers, local communities close to the units, suppliers, employees and opinion makers. More than 1,500 face-to-face interviews were conducted in an online format to assess the extent to which these audiences estimate, trust and admire the company and how they evaluate results and deliveries related to products and services, innovation, governance, work environment, among other topics.

The conclusion of the study is that CTG Brasil is recognized as a solid company and highly qualified for the operation of power generating plants, with a reputational index above average in the electrical sector. Customers, suppliers and employees, in particular, have a highly positive perception of the company in practically all aspects. Local communities and community leaders, however, still do not perceive so clearly the benefits of actions to preserve biodiversity and social investments in the regions where they operate.

CTG Brasil's reputation diagnosis thus contributes to reinforce the management mechanisms aimed at promoting sustainability in all businesses. The construction of transparent relationships and social and environmental responsibility in the operation of the plants are the guidelines to strengthen the brand and the company's links with Brazilian society.





ENVIRONMENTAL MANAGEMENT

The structuring of CTG Brasil's Integrated Management System, in 2019, raised the management of quality, safety and environmental aspects to the level of the best market practices. Based on the mapping of all the company's processes, and in line with other initiatives such as the Production Management System, this consolidation of the management approach ensures readiness for one of the major challenges of 2020: to certify all plants to ISO 9001 (Quality), 14001 (Environment) and 45001 (Safety) standards. In the medium term, the company will also seek ISO 55001 (Asset Management) certification.

One of the premises in this system is the view equally relevant to the environmental aspects inside and outside the plants. The idea is to manage internal aspects – such as leaks, water and energy consumption and waste disposal – in an assertive way with the same excellence already recognized in the activities around the plants, such as the preservation of the edges of the reservoirs and fish farming. To this end, a formal assessment procedure was designed in 2019 and will be implemented in 2020, covering standardized inspections every two months to identify deviations and monitor improvement plans.

This framework of policies and practices guides CTG Brasil's activities in full compliance with all applicable legal requirements and in line with the principles of environmental prevention and precaution. This translates into systematic environmental risk assessment and management mechanisms, maintaining the environmental licenses of all units at all times and ensuring the continuity of some 180 environmental programs.

The same commitment of the company to legal compliance is extended to all who share the use of the reservoirs and their edges. In this context, the *Espaço Legal* Program offers an innovative approach to engaging local audiences, guiding the community so that activities in these areas do not compromise the environment. Local awareness actions are supported by the *Espaço Legal* Guide and by specific channels via e-mail to clarify doubts of the owners and inhabitants of the region.



To know more

Click here and access
the *Espaço Legal* Guide.

Digital storage

Started in November 2019, a project to digitalize all the real estate documentation of the hydropower plants of Rio Paraná and Rio Verde will bring more security and agility to the control of these files. In partnership with the Energy and Sanitation Historical Heritage Foundation, the initiative covers more than 4,200 descriptive plants and memorials and almost 2,300 administrative processes and about 600 expropriation files related to the history of these plants.

*CTG Brasil's investment in
environmental management projects
totaled BRL 17.1 million in 2019*



Water

Being a valuable resource for CTG Brasil's operations, the water in the rivers that cross the hydropower plants is also fundamental for other uses in the localities, such as supplying the cities and industries, navigation, fishing and performing sports and leisure activities. Aware of its role in the preservation of rivers, the company continuously seeks dialogue with all these local audiences, aiming at the best use of this shared water resource.

In 2019, this attitude translated into action when the reservoirs of the Jurumirim, Capivara and Chavantes power plants – which form the headwaters of Rio Paranapanema – reached critical shortages due to the lack of rainfall in the region. In this context, CTG Brasil

participated in the creation of the Paranapanema Crisis Room, a way of involving the population and regulatory agencies in discussions for better use and common use of water resources.

The meetings held in the Crisis Room brought together the National Water Agency (ANA), the National System Operator (ONS), other generating companies with assets on Rio Paranapanema and the river basin committees. In addition, the meetings were open to the participation of society in general. During the year, the discussions and the evaluation of scenarios allowed the partial recovery of the reservoir level, allowing the multiple uses of the affluent to be met.

12.5%
was the minimum index
of the Jurumirim reservoir,
reached in February 2019



The openness to dialogue also made it possible to get closer to the community and the municipalities, clarifying the impacts that scarce rainfall has on the operation and management of the reservoirs. With transparency, CTG Brasil was able to explain the model of centralized dispatch of the electricity sector, operated by the ONS and the regulatory determinations that must be followed by the company.

Internal water consumption in operations is low because it occurs mainly for drinking water for human consumption, sanitary supply and cleaning activities. All units are located in regions with medium-low water stress level, according to the Aqueduct Risk Atlas classification, a platform provided by the World Resources Institute. The exception is the Jupiá and Ilha Solteira plants, on Rio Paraná, whose location is classified as low hydric stress.

The direct capture is made in the Rio Paranapanema and Rio Canoas power plants in underground wells and totaled 145.4 thousand cubic meters in 2019, an 11.9% increase in the annual comparison due to the greater number of people working in the units, especially in maintenance activities.

Dialogue with government agents, other companies in the region and local communities was essential for the effectiveness of the Crisis Room in managing the water crisis in the Paranapanema River





Biodiversity

Reservoirs and their surrounding areas are valuable assets for environmental protection and the preservation of biodiversity. Therefore, ensuring the proper use of these spaces and promoting regular planting activities, species monitoring and environmental education are some of the objectives of CTG Brasil's environmental management. In the company, these activities are even more complex due to the extent of the assets, whose reservoir borders total 8.5 thousand kilometers.

Added up, the perimeters
of the reservoir edges total

8,494 km

This distance is a little longer than the length of the Brazilian coast and, if traveled on foot, it would take about 60 days at an average walking pace.

In order to monitor all these areas with agility, precision and efficient cost management, CTG Brasil has an area dedicated to asset management and invested, in 2019, in technology as an ally. Via satellite monitoring, all edges have been mapped and are periodically photographed. The images, treated in a computerized system, allow the identification of points with changes or deviations. In these cases, the teams work on deeper investigations, with the support of drones, which provide more detailed photographs. In the last year, five equipments were acquired and ten people were trained for this task. In addition, the company has planned a heritage monitoring center, which will be installed in 2020 at the Jupia plant to monitor in real time, via system images and captured locally, the conditions of the unit's reservoir edges.

On the margins of the dams maintained in the plants, CTG Brasil delimits Environmental Conservation Areas (ACAs), in which actions to protect native forests and reforestation occur. In 2019, the company planted reforestation on 240 hectares, equivalent to approximately 336 soccer fields, as part of the environmental licensing programs and commitments inherited when the plants were acquired. Another 50,900 hectares are maintained as protected areas.

The species that inhabit the areas protected by CTG Brasil are an important indication of the conservation status of these ecosystems. For this reason, the company periodically promotes monitoring campaigns in its units to identify and catalog animals and plant species present around the units. In 2019, a research project summarized recommendations in a technical manual for monitoring in terrestrial environments, after five years of studies at the Capivara and Taquaruçu plants.



**240
hectares**
reforested with
planting in 2019, with
approximately
1.7 million seedlings



**50,910
hectares**
maintained as protected
areas, equivalent to the
area of the municipality
of Maceió, capital of
Alagoas state



When using the power of rivers to generate energy, CTG Brasil adopts all measures and care so that it does not cause negative impacts to aquatic species. One of the main efforts in this context is the restocking of fish in the reservoirs, through the release, each year, of about 3.6 million fry – the name given to the fish fresh from the eggs. In addition to the quantity of individuals inserted annually in the reservoirs, the strategy of action for the preservation of the rivers also includes the management of the quality of this aquatic biodiversity.

This involves, for example, studying release techniques that are more effective in fixing the species. At the Rosana plant, a team is dedicated to testing a new method, using fish with different functions in the food chains of the ecosystems, to achieve a better settlement result with fewer fry. The project, started in 2017, will be concluded in 2021, using as control the reservoir immediately before Rosana's in the course of Rio Paranapanema, the Taquaruçu power plant.

Some species are more difficult to develop in the wild, such as the *piracanjuba*. Listed among the endangered species, it is cultivated in captivity for restocking, but the speed of reproduction is low, due to the longer development time of the females. In 2019, CTG Brasil started a project to facilitate this reproductive cycle using a "surrogate" species. With the use of biotechnology techniques, scientists will transport gametes from *piracanjuba* to develop in other fish species, the *matrinxã* and *lambari*. The expectation is to allow artificial reproduction on a large scale.

Maintaining biodiversity in rivers is a priority in environmental and research & development investments, with differentiated approaches for each challenge identified in the plants





BRL 13.8 million

is the total investment in the project to control golden mussel populations

In other cases, the challenge comes in the opposite direction: to control the excess of individuals of a species, which puts at risk the biodiversity of rivers and the continuity of operations. This is the example of the golden mussel, a mollusk whose population is above the appropriate levels for natural balance and which can be fixed in plant equipment, compromising operational performance. Started in 2017 and consisting of three phases, a CTG Brasil research and development front seeks measures to control the infestation of golden mussels in its operations and thus serve as a reference for the sector. The objective is to use a genetic control methodology to minimize the natural reproduction of the species.

The model has already been developed and is being tested by the partner Bio Bureau. In 2019, other companies in the sector were invited to join the venture, deepening the studies on the model's effectiveness and the key factors for reproduction of the golden mussel. Recognized for its Benchmarking Brasil and Bioeconomia Brasil awards, the initiative involves, in the three phases, direct investments of around BRL 8.8 million, in addition to another BRL 5 million destined by the partners.

Macrophytes, aquatic plants essential for nutrient filtration and species development in rivers, can also pose risks to operations if they grow in a disorderly manner. They form banks of plants on the water, which move with the flow of water and, when passing through turbines, can damage equipment and, in extreme cases, force operations to stop. Even with the deviation of these banks to pass through the spillways, due to the low levels of the rivers, there are still risks of imprisonment of fish in stretches of the bed that become temporarily dry. Such an episode occurred in 2019 at the Salto Grande power plant. The teams were promptly deployed to rescue as many fish as possible and return them to the river bed.

In order to anticipate this type of risk, CTG Brasil is investing in a geotechnology-based space monitoring system for aquatic plants. Once implemented, it will make it possible to identify the geographical location of these banks, estimate quantities, predict their displacement and calculate the average time of arrival at the plant, allowing management measures and operations at spillways that avoid operational impacts. In addition, the company has been researching an economically viable and environmentally interesting application for the plants taken from the rivers. Started in 2019, this project aims to refine a bio-oil from macrophytes, which will be used in the plants' generators replacing fossil fuels.



The maintenance of spaces for environmental awareness activities is also part of CTG Brasil's strategy for biodiversity preservation. In the surroundings of the Ilha Solteira power plant, the company took over on January 2, 2020 the management of a wildlife conservation center, open to the public and occupying an area of 177.6 thousand square meters (the equivalent of 16 soccer fields). The space has a veterinary clinic and a Reception and Screening Center and currently houses 350 animals.

Other examples of this approach are found at the Garibaldi plant in Santa Catarina. In 2019, the unit donated an area around the reservoir, where a marina and a belvedere are installed, to Abdon Batista City Hall. The idea is that the space be used for educational, sports and cultural activities. At the end of 2018, the power plant had already delivered the structure of the headquarters and improvements in the ecological trails of the Rio Canoas State Park, established in 2004 in the municipality of Campos Novos (SC).



In Rio Paranapanema, the Forestry Promotion Program stimulates conservation on neighboring land properties through the donation of seedlings. In 2019, the units donated 61 thousand seedlings. At Rio Paraná, the Forest Promotion Program started in 2019 and donated 45 thousand seedlings to rural owners. In all, in the last 20 years and summing all operations, more than 3.5 million seedlings have been donated.

Spaces dedicated to species preservation and environmental education and the donation of seedlings for reforestation contribute to expanding the positive impacts of plants on local communities

Climate change

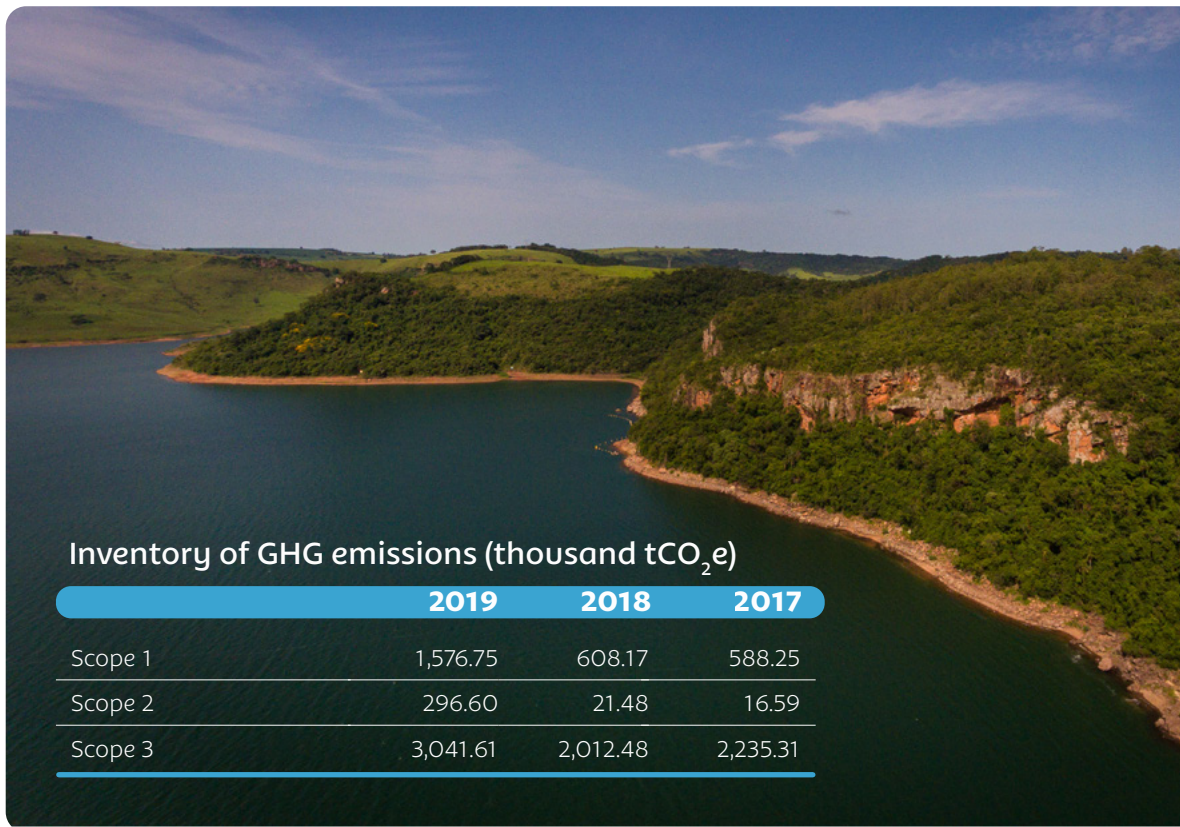
Attentive to the significant influence of the climate change context in its business, CTG Brasil manages the risks and opportunities associated with this issue, seeking to boost its positive contribution to the fight against global warming and adapt to the already inevitable impacts of this process.

The nature of its business, through the generation of clean energy, and the scope of its operations, with approximately 5% of installed capacity in Brazil, place the company in a relevant position to contribute to the growth of renewable sources in the Brazilian electricity matrix. Efforts to modernize its assets, for example, increase the efficiency of its plants in generation, enabling growth in the amount of energy generated and made available to the country.

At the same time, changes in rainfall patterns, with longer periods of drought, affect the level of reservoirs, bringing more complexity to plant management. It is increasingly necessary to anticipate these moments of drought and develop technological alternatives that allow the continuity of operations. On a national scale, this inconstancy in the rainfall regime also affects market prices, due to the availability of the entire generating park, which may entail additional costs for the company to meet its commitments to sell energy.

Even in the face of the evident contribution in its business of generating clean energy, CTG Brasil is committed to mitigating greenhouse gas (GHG) emissions inherent to the activities, such as fuel consumption in the fleet and generators. To do so, the first step was to identify in which processes and in which quantities GHG were emitted, through the preparation of the inventory of greenhouse gas emissions.

This practice was already consolidated at Rio Paranapanema, which annually prepares its inventory in the Public Registry of Emissions of the Brazilian Program GHG Protocol with Gold Seal (which evidences the external assurance of information) since 2014. The expansion to all assets in 2019 allowed for the identification of the carbon footprint of the operations and to offset the emissions generated by CTG Brasil through the planting of reforestation with a partner. This expansion of scope also explains the variation in the total emissions identified in the three scopes in the last inventory, as shown in the table.



Inventory of GHG emissions (thousand tCO₂e)

	2019	2018	2017
Scope 1	1,576.75	608.17	588.25
Scope 2	296.60	21.48	16.59
Scope 3	3,041.61	2,012.48	2,235.31

ECONOMIC AND FINANCIAL PERFORMANCE

National context

The performance of the electric power sector is closely related to the country's economic activity, which maintained a still slow pace of growth in 2019. According to IBGE data, Brazil's Gross Domestic Product (GDP) evolved 1.1% last year, repeating the 2018 level. Activity in the industrial sector grew 0.5%, driven mainly by civil construction, and the service and agricultural segments rose 1.3%.

Other economic indicators show signs of improvement for the country's investment environment as of 2020. The basic interest rate (Selic) closed the year at 4.5%, lowest historical level, and official inflation (IPCA) was 4.31%, little above the 4.25% goal, set by the Central Bank.

The exchange market presented volatility throughout 2019. Dollar appreciated 4% against real, closing the year at 4.03 reais per dollar. The Group is exposed to exchange variation because one of its controlled companies, Rio Paraná, holds debt with related parties (intra-group) in dollars. So, exchange is permanently monitored by the management, which mitigates risks resulting from this volatility.

Unstable scenario and low growth of Gross Domestic Product marked the Brazilian context in 2019

Macroeconomic indicators

	2019	2018
IGP-M	7.31%	7.54%
IPCA	4.31%	3.75%
Exchange rate (USD)	4.0307	3.8748
Var. % of exchange rate	4.02%	17.13%
Selic rate	4.50%	6.50%
CDI	4.40%	6.40%



Energy market

Electricity consumption in Brazil totaled 481.1 TWh in 2019, according to data from the Energy Research Company (EPE). This result represents 1.4% growth against the previous year.

The Brazilian energy sector is divided in two markets: the Regulated Contracting Environment (in Portuguese ACR) and the Unregulated Contracting Environment (in Portuguese ACL). In ACR, also called captive market, we have clients served by distributors that supply their concession areas with energy acquired in energy purchase and sale auctions. In 2019, energy consumption in this market grew 1.2%, amounting to approximately 319.4 TWh. In ACL, where energy purchase and sale contracts are directly negotiated between generators and clients, 162.6 TWh consumption

was recorded, 1.9% superior to that of the previous year. According to the Brazilian Energy Traders Association (Abraceel) data, 6,937 consumers participate in the free market, 20% increase in the annual base.

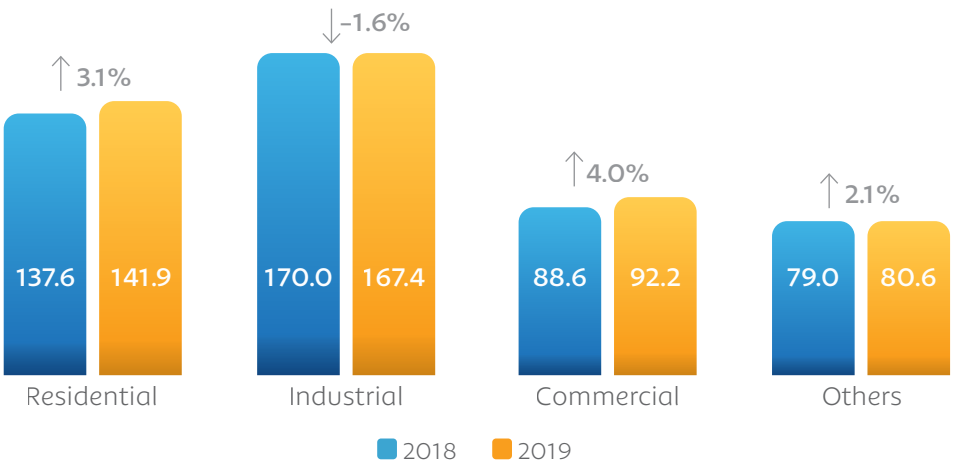
In the last year, there was increase in consumption in commercial (+4.0%) and residential (+3.1%) consumers' classes, due to higher temperatures in Central-West, Northeast and North regions, which demanded higher use of air cooling equipment. The industry segment presented fall (-1.6%) in the period, chiefly due to lower consumption in chemical and metallic mineral extraction segments and weak GDP evolution.

Hydropower generation

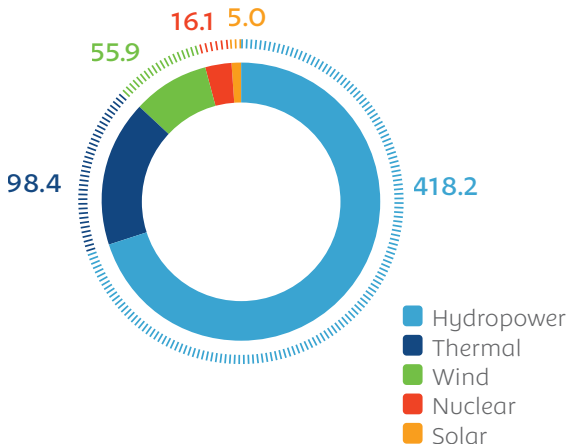
Hydropower plants, responsible for 64.1% of the installed capacity of generation in Brazil, operate in a centralized way, commanded by the National System Operator (ONS). The entity, responsible for the coordination and operation of the National Interconnected System (SIN), assesses several climate and operational parameters (like water security) to organize energy generation.

Hydropower plants subject to ONS centralized dispatch make up the Energy Reallocation Mechanism (MRE), a type of condominium where the higher production in one plant compensates the inferior generation of the others. In 2019, these plants responded for the generation of 70.5% of the electricity of the National Interconnected System (SIN). Thermal plants generated 16.6%.

Electricity market (thousand GWh)



Energy generated in SIN in 2019 (TWh)



Results for the year

The financial results achieved by CTG Brasil show the assertiveness of its strategy and the capacity to generate asset value even in the challenging scenario of 2019. Throughout the year, the Company also advanced in contracting an integrated business management system, which will be implemented in 2020.

The comparison of performance with the previous year is hampered by two factors: in 2018, Rio Parapanema's results were consolidated only in December, compared to the 12 months recorded in 2019; and Rio Paraná underwent a non-recurring accounting adjustment that negatively impacted the 2018 result, due to a change in the methodology for recognizing revenues from the financial assets of the grant.

Considering standardized and comparable bases, the evolution of net revenues in the period was 4.6%, reaching BRL 4.8 billion. Net income reached BRL 1.3 billion, with growth of 35.9%. In relation to indebtedness, the reduction of net debt by 12.8% is noteworthy, both due to the increase in cash and cash equivalents and the reduction in debt balances, closing the year at BRL 711.9 million.

The total added value distributed was BRL 4.3 billion, an amount 6.6% lower in the standard annual comparison. Of the total added value: 24.6% was distributed to the government and society, in the form of taxes, fees and contributions; 3.2% to employees, through salaries, benefits and social charges; 38.1% to third parties, related to the payment of interest and rents; and 34.1% in dividends and interest on equity to shareholders.

2019 performance was better than the previous year, confirming the assertiveness of the corporate strategy even in the face of the challenging scenario in the period

Main indicators (BRL million)

	2019	2018	Variation (%)
Gross operating revenue	5,535.5	3,889.4	42.3
Net operating revenue	4,844.7	1,589.2	204.9
Operating costs and expenses	(2,335.3)	(1,257.9)	85.6
Ebitda	3,242.8	701.6	362.2
Net profit/(loss) for the year	1,343.7	(414.8)	424.0
Total assets	29,129.9	29,028.0	0.4
Debts in national currency	5,037.2	5,228.5	-3.7
Foreign currency debts	3,605.6	3,604.8	0.0
Shareholders' equity	13,748.4	14,014.6	-1.9

Distribution of added value (BRL million)

	2019	2018	Variation (%)
Staff	140.3	143.5	-2.23
Taxes, fees and contributions	1,062.8	272.7	289.80
Return on third-party capital	1,650.0	2,179.7	-24.30
Return on equity	1,474.2	(105.5)	-1,497.60
Added value distributed	4,327.3	2,490.4	73.76



**We innovate
to transform**

DEVELOPING KNOWLEDGE

CTG Brasil plans to invest BRL 100 million over the next five years. And in order for these resources to have the best possible result, the company also intends to allocate them in an innovative way that contributes more significantly to the corporate strategy. In 2019, the very process of defining the projects to benefit from the research and development (R&D) resources required by the electricity sector regulations was a case of innovation.

The Technological Road Map, which began at the end of 2018, involved all areas of the company to map the opportunities for innovation in the various fields of operation, and not only in the traditional operational and environmental sphere. After the first stage of internal diagnosis of the maturity of the R&D portfolio management and external evaluation of benchmarks and trends, the project team held workshops with the company's leadership to define the technological routes and themes to be prioritized in project prospecting. This work methodology will be adopted annually in the planning of resource allocation.



Within this approach, one of the most prominent projects undertaken by the company is the genetic control of the golden mussel, one of the invading species with the greatest negative impact on Brazilian hydrographic basins. Another relevant investment is the evaluation of the feasibility of using oil from aquatic macrophytes as a biofuel for engines and equipment used in the plants' processes. Learn more about these projects on page 69.

In 2019, the R&D portfolio totaled 23 projects, which totaled BRL 13.2 million in investments, 67% more than in 2018. In the year, contracts were signed with 10 new projects, aligned with the new management approach, which will total an investment of BRL 40 million by 2022.

Among these new projects, it is worth highlighting CTG Brasil's participation in the Aneel Public Call focused on the development of efficient electric mobility solutions. Two studies were selected to receive investments from the company (see below in the chart).

CTG Brasil projects for electric mobility

P2P Open Trading Platform

For insertion of renewable sources in electric mobility. The objective is to create a digital platform that works as an opportunity counter in the commercialization of energy for the electric vehicles segment

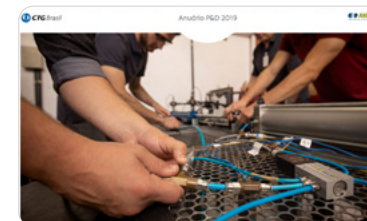
Sustainable Connection of Electrical Mobility between Hydropower Power Plants

Focused on investment for the acquisition of electric vehicles, installation of infrastructure of electric vehicle charging station for the displacement and loading of the fleet on the way between the Jupiá and Ilha Solteira HPPs. An expansion of this route to the Três Lagoas airport and the UNESP campus in the region is also being planned, in addition to the stretches that connect the plants of Rio Paraná and Rio Paranapanema to the headquarters in São Paulo



To know more

Click here and watch the series of videos about the R&D projects of CTG Brasil



To know more

Click here and access CTG Brasil's R&D Yearbook 2019 to learn more about the management of the theme and the projects supported during the year

INNOVATION ENVIRONMENT

The innovative way of developing knowledge surpassed all limitations of CTG Brasil in 2019, connecting the demands and resources of R&D to the universe of startups. To this end, the company announced a partnership with the Santa Catarina Technology Association (ACATE) that foresees the creation of the Digital Innovation Lab, a space dedicated to the interaction between CTG Brasil, universities and startups within the new ACATE innovation hub in São Paulo. In this space, the association's teams and other companies involved in the projects will work on the development of solutions that accelerate advances in the field of Information Technology (IT).



The partnership with ACATE provides a dedicated space for CTG Brasil's interaction with universities and startups

With a 24-month term and investments totaling BRL 2.4 million from R&D regulatory funds, the partnership began in August 2019, with an immersion of ACATE professionals at CTG Brasil to understand the company's strategy and organizational culture and map challenges connected to them. Once identified, these demands will be prioritized and directed to teams in the squads model. This methodology involves professionals with different specialties and competencies, who work together for a short period of time to prototype solutions in highly complex contexts. After planning their working approach, these teams will present the project proposals to CTG Brasil's Innovation Committee, which once approved will be developed in the Digital Innovation Lab space.

Clean Energy Innovation Hub

Strengthening the exchange between Brazil and China in the search for innovation for clean energy generation is one of the main objectives of the partnership signed by CTG Brasil with SENAI in November 2019. With planned investments of BRL 100 million over the next five years, the agreement involves the creation of the Clean Energy Innovation Hub, a space to connect the Brazilian innovation ecosystem to the challenges in the fields of plant planning, management and safety, social and environmental responsibility and energy efficiency.

In addition to financial resources, the partners add value levers to the endeavor that increase the transformation potential. On the one hand, SENAI articulates the largest innovation network in the country, with research in several areas. On the other hand, CTG Brasil already promotes internal technological exchange with China and will facilitate interaction with researchers abroad. The expectation is that the Clean Energy Innovation Hub also has a unit in Chinese territory, favoring the interaction between teams from each country.

The center will fund R&D projects, encouraging the adoption of technologies such as artificial intelligence and big data, and propose challenges for startups and events and workshops for sharing experiences. Other companies in the power sector or other productive segments may also join the initiative, which will have its space in São Paulo inaugurated still in 2020.



Annexes

COMPLEMENT TO THE GRI DISCLOSURES

102-8 • Information on employees and other workers

In 2019, CTG Brasil's workforce grew 8%, in line with business development. The only significant change was the transfer of 68 employees from Rio Verde to CTG Serviços, which also impacted the turnover rate. In relation to the other workers, it is worth mentioning that third parties work mainly in surveillance, cleaning, catering, reception and IT/Telecom service activities.

Number of employees by employment contract*

	2019		2018		2017	
	Undetermined	Determined	Undetermined	Determined	Undetermined	Determined
By gender						
Men	687	20	616	19	583	17
Women	161	9	168	10	136	9
Total	848	29	784	29	719	26
By company						
Rio Paraná	318	14	307	13	268	10
Rio Paranapanema	285	2	288	3	297	7
Rio Canoas	27	0	29	0	27	0
Rio Verde	20	0	71	1	58	0
CTG Serviços (CSC)	66	2	0	0	0	0
Corporate	132	11	89	12	69	9
Total	848	29	784	29	719	26

*Considers CLT employees and apprentices, all of them working full time.

Other employees by company

	2019		2018		2017	
	Third Parties	Trainees	Third Parties	Trainees	Third Parties	Trainees
Rio Paraná	124	8	117	1	95	1
Rio Paranapanema	87	5	79	8	77	5
Rio Canoas	10	0	8	0	8	0
Rio Verde	9	0	19	0	13	0
CTG Serviços (CSC)	3	4	0	0	0	0
Corporate	10	7	9	2	13	0
Total	243	24	232	11	206	6

102-10 • Significant changes to the organization and its supply chain

No significant changes occurred in 2019.

102-13 • Membership of associations

CTG Brasil's participation in sector entities and associations strengthens the exchange of knowledge and the discussion of common agendas for the electricity sector. Especially to foster Brazil-China integration, the company is a member of the Brazilian Association of Chinese Companies (Abec), the China Council for the Promotion of International Trade (CCPIT) and the Brazil China Business Council. The participation in the Asia nucleus of the Brazilian Center for International Relations (CEBRI) also strengthens relations with stakeholders in Brazil and abroad.

Within the scope of the operations, CTG Brasil is part of seven Paranapanema Basin Committees and the Sapucaí-Mirim Committee, which discuss issues related to reservoirs and environmental education, in addition to monitoring the activities of the Brazilian Committee on Large Dams.

At the corporate level, it is part of the Brazilian Council of Business Volunteering (CVBE), which encourages strategic volunteering and the exchange of corporate experiences on this front, and the

Employee Communication Committee of the Brazilian Association of Business Communication (Aberje), which discusses approaches to the dissemination of organizational culture and employee engagement. In particular, this involvement contributed in 2019 to the company's culture project. It also participates in the Reputation Leader Network, articulated by the Reputation Institute and aimed at sharing knowledge and practices in institutional reputation.

In the regulatory sphere, we participate in the main entities representing energy generators and traders: Brazilian Association of Independent Producers of Electric Energy (Apine), Brazilian Association of Electric Energy Generating Companies (Abrage), Brazilian Association of Energy Traders (Abraceel), Brazilian Association of Electric Energy Companies (ABCE), Brazilian Association of Clean Energy Generation (Abragel), Brazilian Association of Photovoltaic Solar Energy (ABSolar) and Brazilian Association of Wind Energy (ABEEólica). This engagement is fundamental for the discussion of relevant issues in the sector, contributing to the positioning of these associations in the debate on public policies through the involvement in working groups. Especially in Apine and Abrage, we also act as members of the Council of Institutions. Additionally, we dedicate efforts to the development of knowledge through research and academic studies coordinated by Instituto Acende Brasil.

102-41 • Collective bargaining agreements

All employees are covered by collective bargaining agreements and conventions, except for the two Pro-Labore directors. Thus, the percentage of employees covered was 99.77% at the end of 2019.

102-45 • Entities included in the consolidated financial statements

The information that meets the GRI disclosure items covers the companies controlled by CTG Brasil. In addition to these, the financial data and Consolidated Financial Statements consider the company's equity interests.

102-48 • Restatements of information

Any representations of data disclosed in the Sustainability Reports of previous years are signaled when applicable along the content.

102-54 • Claims of reporting in accordance with the GRI Standards

This report has been prepared in accordance with the GRI Standards: Core option.

102-56 • External assurance

Only the financial information was audited.

201-3 • Defined benefit plan obligations and other retirement plans

The pension plan is offered corporately in the defined contribution mode, in which the employees who voluntarily join the benefit allocate part of their compensation to the plan on a monthly basis. The company also contributes to these plans with a counterpart. The accumulated balances can be redeemed by the beneficiaries upon retirement, according to the rules established by each plan. The rate of adhesion to these plans was 59% at the end of the period.

At Rio Paranapanema, a defined benefit plan is available, managed by FUNCESP. In this modality, the amounts contributed by the employees and by the company are managed by a fund held and maintained separately from CTG Brasil's resources, in line with adequate market practices in order to guarantee the maintenance of the coverage of all liabilities. The defined benefit plan adherence rate was 22% at the close of 2019.

205-3 • Confirmed incidents of corruption and actions taken

No case or lawsuit related to corruption has been confirmed by the Ethics Line.

302-1 • Energy consumption within the organization

Energy generated from fuels (GJ)*

	2019	2018	2017
Non renewable fuels			
Diesel	5,155.42	4,235.69	2,940.50
Gasoline	3,499.27	2,672.76	2,810.36
Other – emergency auxiliary group group (diesel replacement)	449.95	633.68	316.27
Subtotal	9,104.64	7,542.12	6,097.13
Renewable fuels			
Ethanol	267.76	468.71	452.65
Total	9,372.39	8,010.82	6,549.78

*Historical data restated.

Own energy consumption GJ

	2019	2018	2017
Electricity	155.97	184.52	173.40

*Historical data restated.

304-4 • IUCN Red List species and national conservation list species with habitats in areas affected by operations

Species identified in monitoring of units in 2019 according to IUCN classification

	Critically endangered (CR)	Endangered	Vulnerable (VU)	Nearly endangered (NT)
Rio Paraná	na	na	na	na
Rio Paranapanema (includes Sapucaí-Mirim)	1	3	5	1
Rio Canoas	0	0	4	5
Rio Verde	2	2	5	1

303-3 and 303-5 • Water withdrawal; Water consumption

The plants that make up Rio Paranapanema, Rio Canoas and Rio Verde, in addition to the Jupiá plant (Rio Paraná), capture water from underground sources. The Ilha Solteira power plant, on the other hand, captures water from surface sources. However, the measurement of the captured volumes occurs only at Rio Paranapanema and Rio Canoas. In 2019, these units captured 145.4 thousand cubic meters, 98% of which were at Rio Paranapanema. Monitoring of total dissolved solids (TDS) is only carried out at Rio Paranapanema – in these units, the average concentration identified was 100 mg/l of TDS.

The operations generate only domestic effluent, which is treated or disposed of by the public sanitation network. Assuming that these represent 80% of the total collected, it is estimated that 116,300 cubic meters of effluents were generated in the units where the collection volume is measured.

306-2 • Waste by type and disposal method

The non-hazardous waste destined by CTG Brasil in 2019 totaled 157.7 tons and refers to scrap, copper and steel from Rio Paraná and Rio Paranapanema that are sold for recycling or reuse. Hazardous waste totaled 161.4 tons, 80% of which is sent to landfills. The suppliers that receive these residues are duly homologated and hold the applicable licenses, in addition to presenting the company with the certificates of final destination of the transported volumes.

Disposal of hazardous waste in 2018 (kg)*

Co-processing	20,115
Landfill	129,837
On-site storage	11,400
Total	161,352

*In addition to the volumes described in the table, Rio Paranapanema has allocated 48,800 liters of lubricating and insulating oil for re-refining.

305-4 • GHG emissions intensity

The intensity of GHG emissions at CTG Brasil in 2019 was 0.000055 tCO₂e/GWh generated. This measure considers the emissions of scopes 1 and 2.

307-1 and 419-1 • Non-compliance with environmental laws and regulations; Non-compliance with laws and regulations in the social and economic area

In 2019, CTG Brasil did not pay significant fines or receive significant monetary sanctions related to environmental, social or economic aspects. Fines or sanctions that may interrupt, suspend or cease activities, negatively impact the company's results or have an amount equal to or greater than BRL 10 million fall within this criterion. This concept does not include infraction notices, fines or sanctions that are being discussed in the administrative or judicial sphere, without a final and unappealable decision.

401-1 • New employee hires and employee turnover**Hiring**

	2019		2018		2017	
	Number	Rate*	Number	Rate*	Number	Rate*
By gender						
Men	151	22.3%	77	12.3%	48	7.8%
Women	30	17.3%	56	34.5%	27	18.2%
By age group						
Up to 30 years old	97	46.1%	71	40.8%	38	24.3%
From 31 to 40 years old	63	23.6%	44	19.0%	23	10.4%
From 41 to 50 years old	18	7.9%	17	7.5%	10	4.4%
Over 50 years old	3	2.1%	1	0.6%	4	2.5%
By company						
Rio Paraná	58	18.0%	58	19.1%	26	9.1%
Rio Paranapanema	68	24.5%	14	4.7%	22	7.0%
Rio Canoas	1	3.6%	4	14.3%	2	6.9%
Rio Verde	4	20.0%	22	34.9%	10	17.2%
CTG Serviços (CSC)	12	19.0%	na	na	na	na
Corporate	38	27.3%	35	37.2%	15	19.0%
Consolidated	181	21.3%	133	16.9%	75	9.8%

*Calculated as the number of hires over the average headcount of the year.

Turnover

	2019		2018		2017	
	Number of dismissals	Rate*	Number of dismissals	Rate*	Number of dismissals	Rate*
By gender						
Men	79	11.7%	44	7.0%	65	10.5%
Women	38	21.9%	23	14.2%	36	24.2%
By age group						
Up to 30 years old	23	10.9%	15	8.6%	26	16.6%
From 31 to 40 years old	47	17.6%	21	9.1%	30	13.5%
From 41 to 50 years old	18	7.9%	10	4.4%	22	9.7%
Over 50 years old	29	20.1%	21	13.4%	23	14.2%
By company						
Rio Paraná	46	14.2%	18	5.9%	22	7.7%
Rio Paranapanema	22	7.9%	25	8.4%	47	14.9%
Rio Canoas	2	7.1%	2	7.1%	6	20.7%
Rio Verde	4	20.0%	7	11.1%	13	22.4%
CTG Serviços (CSC)	11	17.5%	na	na	na	na
Corporate	32	23.0%	15	16.0%	13	16.5%
Consolidated	117	13.8%	67	8.5%	101	13.2%

*Calculated as the number of dismissals on the average headcount of the year.

401-2 • Benefits provided to full-time employees that are not provided to temporary or part-time employees

The company offers in its units a set of benefits, in line with the best market practices and contributing to the attractiveness of CTG Brasil as an employer brand. The coverage and conditions are similar, although with different partners in each location. The benefits are defined according to corporate policy and collective labor agreements and conventions and apply to all employees. The exception is only for short-term professionals (Chinese impatriates and apprentices), for whom we do not provide the complementary private pension plan.

Among the main benefits offered, some of them restricted to certain functional levels, are: medical and dental assistance; meal and food vouchers; transportation vouchers, fuel cards, chartered transportation or parking reimbursement; PASS Support (Employee Assistance Program); Gympass; complementary private pension plan; Birthday Gift and Christmas Gift; daycare/babysitting or reimbursement assistance; Baby Book; and checkup and car for executives.

403-7 • Prevention and mitigation of occupational health and safety impacts directly linked by business relationships

The companies contracted in the operations are the only commercial partner exposed to health and safety risks, which are mitigated by the occupational health and safety management system, as presented in the chapter "We Prioritize Life" (page 18).

403-10 • Work-related ill health

No cases of occupational illness were registered in the company in 2019.

404-1 • Average hours of training per year per employee**Average hours of training per employee**

	2019	2018	2017
By gender			
Men	60.6	50.8	39.2
Women	47.3	23.9	22.7
By functional level			
Executive Board	54.3	29.1	39.1
Management	59.5	32.7	
Administrative	34.5	25.2	26.6
Production	73.0	65.7	44.9
General	56.6	44.9	36

412-3 • Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening

All contracts of CTG Brasil include clauses related to human rights, specifically about the prohibition of child labor, forced or analogous to slavery. In 2019, a significant contract was signed regarding the acquisition of systems. Those submitted for the approval of the Advisory Board Members (ABM) and CTG Corporation are considered significant.

EU5 • Allocation of CO₂e emissions allowances or equivalent, broken down by carbon trading framework

CTG Brasil does not trade carbon credits.

EU8 • Research and development activity and expenditure aimed at providing reliable electricity and promoting sustainable development

Resources invested in research and technological and scientific development (BRL thousand)

	2019	2018	2017
FA – Alternative Sources of Electric Power Generation	645	91	344
GT – Thermoelectric Generation	0	0	0
GB – Basin and Reservoir Management	45	44	880
MA – Environment	4,562	4,285	2,173
SE – Safety	415	0	0
EF – Energy Efficiency	0	0	0
PL – Electric Power Systems Planning	1,677	1,055	1,463
OP – Electric Power Systems Operation	2,431	960	0
SC – Supervision, Control and Protection of Electrical Power Systems	2,701	1,438	254
QC – Quality and Reliability of Electric Power Services	0	0	0
MF – Measuring, Billing and Combating Trade Losses	0	0	0
OU – Other	686	0	1,282
Total	13,162	7,873	6,396

EU25 • Number of injuries and fatalities to the public involving company assets including legal judgments, settlements and pending legal cases of diseases

No accidents involving the population and assets of CTG Brasil in 2019 were recorded, nor were any lawsuits related to the issue.

GRI CONTENT INDEX



GRI Standard	Disclosure	Page	Omissions	Global Compact
GRI 101 Foundation 2016				
General disclosures				
GRI 102 General disclosures 2016	Organizational profile			
	102-1 Name of the organization	9	-	-
	102-2 Activities, brands, products, and services	9	-	-
	102-3 Location of headquarters	9	-	-
	102-4 Location of operations	12	-	-
	102-5 Ownership and legal form	9	-	-
	102-6 Markets served	11	-	-
	102-7 Scale of the organization	9, 27 and 74	-	-
	102-8 Information on employees and other workers	27 and 80	-	6
	102-9 Supply chain	39	-	-
	102-10 Significant changes to the organization and its supply chain	81	-	-
	102-11 Precautionary Principle or approach	44, 45, 46 and 62	-	-
	102-12 External initiatives	5	-	-
	102-13 Membership of associations	81	-	-
	Strategy			
	102-14 Statement from senior decision-maker	3 and 4	-	-
	102-15 Key impacts, risks, and opportunities	14, 40 and 41	-	-
	Ethics and integrity			
	102-16 Values, principles, standards, and norms of behavior	13 and 36	-	10
	102-17 Mechanisms for advice and concerns about ethics	38	-	10

For the Materiality Disclosures Service, GRI Services reviewed that the GRI content index is clearly presented and the references for Disclosures 102-40 to 102-49 align with appropriate sections in the body of the report. The service was performed on the Portuguese version of the report.

GRI Standard	Disclosure	Page	Omissions	Global Compact
General disclosures				
GRI 102 General disclosures 2016	Governance			
	102-18 Governance structure	47 and 48	-	-
	Stakeholder engagement			
	102-40 List of stakeholder groups	6 and 56	-	-
	102-41 Collective bargaining agreements	82	-	3
	102-42 Identifying and selecting stakeholders	6, 28, 57 and 63	-	-
	102-43 Approach to stakeholder engagement	6, 28, 57 and 63	-	-
	102-44 Key topics and concerns raised	7	-	-
	Reporting practice			
	102-45 Entities included in the consolidated financial statements	82	-	-
	102-46 Defining report content and topic Boundaries	6	-	-
	102-47 List of material topics	7	-	-
	102-48 Restatements of information	82	-	-
	102-49 Changes in reporting	7	-	-
	102-50 Reporting period	5	-	-
	102-51 Date of most recent report	5	-	-
	102-52 Reporting cycle	5	-	-
	102-53 Contact point for questions regarding the report	7	-	-
	102-54 Claims of reporting in accordance with the GRI Standards	82	-	-
	102-55 GRI content index	88, 89, 90, 91, 92 and 93	-	-
	102-56 External assurance	82	-	-
GRI Electric utilities sector supplement 2013	EU1 Installed capacity, broken down by primary energy source and by regulatory regime	12	-	-
	EU2 Net energy output broken down by primary energy source and by regulatory regime	9	-	-
	EU5 Allocation of CO ₂ e emissions allowances or equivalent, broken down by carbon trading framework	86	-	-

GRI Standard	Disclosure	Page	Global Omissions Compact	
Material topic Ethics, compliance and anti-corruption				
GRI 103 Management approach 2016 ¹	103-1 Explanation of the material topic and its Boundary	7, 36, 37, 38 and 39	-	-
	103-2 The management approach and its components	36, 37, 38 and 39	-	-
	103-3 Evaluation of the management approach	17, 36, 37, 38 and 39	-	-
GRI 205 Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	37	-	10
	205-2 Communication and training about anti-corruption policies and procedures	37	-	10
	205-3 Confirmed incidents of corruption and actions taken	82	-	10
GRI 307 Environmental compliance 2016	307-1 Non-compliance with environmental laws and regulations	84	-	8
GRI 408 Child labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	39	-	5
GRI 409 Forced or compulsory labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	39	-	4
GRI 412 Human rights assessment 2016	412-3 Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	86	-	-
			-	-
GRI 419 Socioeconomic compliance 2016	419-1 Non-compliance with laws and regulations in the social and economic area	84	-	-
Material topic Local development				
GRI 103 Management approach 2016 ²	103-1 Explanation of the material topic and its Boundary	7, 58, 59, 60 and 70	-	-
	103-2 The management approach and its components	58, 59, 60 and 70	-	-
	103-3 Evaluation of the management approach	17, 58, 59, 60 and 70	-	-
GRI 201 Economic performance 2016	201-1 Direct economic value generated and distributed	74	-	-
GRI 203 Indirect economic impacts 2016	203-1 Infrastructure investments and services supported	70	-	-
GRI 413 Local communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	58, 59 and 60	-	1

¹ The management approach refers to all GRI topics listed within the material topic "Ethics, compliance and anti-corruption."

² The management approach refers to all GRI topics listed within the material topic "Local development."

GRI Standard	Disclosure	Page	Global Omissions Compact	
Material topic Transparency and relationship with stakeholders				
GRI 103 Management approach 2016	103-1 Explanation of the material topic and its Boundary	7, 28, 56, 57, 61 and 63	-	-
	103-2 The management approach and its components	28, 56, 57, 61 and 63	-	-
	103-3 Evaluation of the management approach	17, 28, 56, 57, 61 and 63	-	-
Material topic Infrastructure and safety of the operation and the employee				
GRI 103 Management approach 2016 ³	103-1 Explanation of the material topic and its Boundary	7, 19, 20, 21, 22, 23, 24, 25, 44, 45 and 46	-	-
	103-2 The management approach and its components	19, 20, 21, 22, 23, 24, 25, 44, 45 and 46	-	-
	103-3 Evaluation of the management approach	17, 19, 20, 21, 22, 23, 24, 25, 44, 45 and 46	-	-
GRI 403 Occupational health and safety 2018	403-1 Occupational health and safety management system	19	-	-
	403-2 Hazard identification, risk assessment, and incident investigation	21	-	-
	403-3 Occupational health services	23	-	-
	403-4 Worker participation, consultation, and communication on occupational health and safety	21 and 22	-	-
	403-5 Worker training on occupational health and safety	20	-	-
	403-6 Promotion of worker health	23	-	-
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	86	-	-
	403-8 Workers covered by an occupational health and safety management system	19	-	-
	403-9 Work-related injuries	24	-	-
	403-10 Work-related ill health	86	-	-
GRI Electric utilities sector supplement 2013	EU16 Policies and requirements regarding health and safety of employees and employees of contractors and subcontractors	19, 20 and 25	-	-
	EU18 Percentage of contractor and subcontractor employees that have undergone relevant health and safety training	20	-	-
	EU21 Contingency planning measures, disaster/emergency management plan and training programs, and recovery/restoration plans	44, 45 and 46	-	-
	EU25 Number of injuries and fatalities to the public involving company assets including legal judgments, settlements and pending legal cases of diseases	87	-	-

³ The management approach refers to all GRI topics and sector disclosures listed within the material topic "Infrastructure and safety of the operation and the employee."

GRI Standard	Disclosure	Page	Global Omissions Compact	
Material topic Promotion of energy from renewable sources				
GRI 103 Management approach 2016 ⁴	103-1 Explanation of the material topic and its Boundary	7, 9, 10, 14 and 71	-	-
	103-2 The management approach and its components	9, 10, 14 and 71	-	-
	103-3 Evaluation of the management approach	9, 10, 14, 17 and 71	-	-
GRI 201 Economic performance 2016	201-2 Financial implications and other risks and opportunities due to climate change	71	-	7
GRI 302 Energy 2016	302-1 Energy consumption within the organization	82	-	7 and 8
GRI 305 Emissions 2016	305-1 Direct (Scope 1) GHG emissions	71	-	7 and 8
	305-2 Energy indirect (Scope 2) GHG emissions	71	-	7 and 8
	305-3 Other indirect (Scope 3) GHG emissions	71	-	7 and 8
	305-4 GHG emissions intensity	84	-	8
Material topic Preservation of biodiversity and water resources				
GRI 103 Management approach 2016 ⁵	103-1 Explanation of the material topic and its Boundary	7, 62, 63, 64, 65, 66, 67, 68, 69 and 70	-	-
	103-2 The management approach and its components	62, 63, 64, 65, 66, 67, 68, 69 and 70	-	-
	103-3 Evaluation of the management approach	17, 62, 63, 64, 65, 66, 67, 68, 69 and 70	-	-
GRI 303 Water and effluents 2018	303-1 Interactions with water as a shared resource	64 and 65	-	8
	303-2 Management of water discharge-related impacts	64 and 65	-	8
	303-3 Water withdrawal	65 and 83	-	7 and 8
	303-5 Water consumption	83	-	8
GRI 304 Biodiversity 2016	304-2 Significant impacts of activities, products, and services on biodiversity	66, 67, 68 and 69	-	8
	304-3 Habitats protected or restored	67	-	8
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	83	-	8
GRI 306 Effluents and waste 2016	306-2 Waste by type and disposal method	83	-	8

⁴ The management approach refers to all GRI topics listed within the material topic "Promotion of energy from renewable sources."

⁵ The management approach refers to all GRI topics listed within the material topic "Preservation of biodiversity and water resources."

GRI Standard	Disclosure	Page	Global Omissions Compact	
Material topic Reliable power generation				
GRI 103 Management approach 2016	103-1 Explanation of the material topic and its Boundary	7, 42, 43, 50, 51, 52, 53, 54 and 55	-	-
	103-2 The management approach and its components	42, 43, 50, 51, 52, 53, 54 and 55	-	-
	103-3 Evaluation of the management approach	17, 42, 43, 50, 51, 52, 53, 54 and 55	-	-
GRI Electric utilities sector supplement 2013	EU6 Management approach to ensure short and long-term electricity availability and reliability	42, 43, 50, 51, 52, 53, 54 and 55	-	-
	EU30 Average plant availability factor by energy source and by regulatory regime	53	-	-
Material topic Business innovation				
GRI 103 Management approach 2016	103-1 Explanation of the material topic and its Boundary	7, 76, 77 and 78	-	-
	103-2 The management approach and its components	76, 77 and 78	-	-
	103-3 Evaluation of the management approach	17, 76, 77 and 78	-	-
GRI Electric utilities sector supplement 2013	EU8 Research and development activity and expenditure aimed at providing reliable electricity and promoting sustainable development	76, 77, 78 and 87	-	-
Material topic People management				
GRI 103 Management approach 2016 ⁶	103-1 Explanation of the material topic and its Boundary	7, 27, 28, 29, 30, 31, 32, 33 and 34	-	-
	103-2 The management approach and its components	27, 28, 29, 30, 31, 32, 33 and 34	-	-
	103-3 Evaluation of the management approach	17, 27, 28, 29, 30, 31, 32, 33 and 34	-	-
GRI 201 Economic performance 2016	201-3 Defined benefit plan obligations and other retirement plans	82	-	-
GRI 401 Employment 2016	401-1 New employee hires and employee turnover	27 and 84	-	6
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	86	-	-
GRI 404 Training and education 2016	404-1 Average hours of training per year per employee	31 and 86	-	6
	404-2 Programs for upgrading employee skills and transition assistance programs	29, 30, 31, 32 and 33	-	-
	404-3 Percentage of employees receiving regular performance and career development reviews	34	-	6

⁶ The management approach refers to all GRI topics listed within the material topic "People management."

ANEEL INDICATORS

RIO PARANÁ ENERGIA

Operational and Productivity Indicators

Technical data (inputs, production capacity, sales, losses)

	2017	2018	2019
Energy generated (GWh)	19,734.5	20,226.5	20,609.0
Ilha Solteira HPP	12,369.2	12,703.0	13,033.3
Jupiá HPP	7,365.3	7,523.5	7,575.7
Energy sold (GWh) ¹	21,396.8	20,768.8	21,340.1
Installed capacity (MW)	4,995.2	4,995.2	4,995.2

¹ It considers quotas and sales contracts and does not consider Short Term Trading (MCP) and Energy Reallocation Mechanisms (MRE). Data from 2018 restated.

Governance – Managers

Governance – Managers

	2017				2018				2019			
	BD	EB	FC ¹	Total	BD	EB	FC ¹	Total	BD	EB	FC ¹	Total
Number of member ²	4	3	0	7	6	3	0	9	3	4	0	7
Number of paid members	0	2	0	2	0	2	0	2	0	2	0	2
Annual fixed remuneration (BRL thousand)												
Salary or pro-labore	-	1,462	-	1,462	-	1,517	-	1,517	-	1,959	-	1,959
Direct or indirect benefits	-	269	-	269	-	273	-	273	-	287	-	287
Committee participations	-	0	-	0	-	0	-	0	-	0	-	0
Other	-	584	-	584	-	604	-	604	-	629	-	629
Variable remuneration (BRL thousand)												
Bonus	-	0	-	0	-	0	-	0	-	0	-	0
Profit sharing	-	514	-	514	-	704	-	704	-	799	-	799
Participation in meetings	-	0	-	0	-	0	-	0	-	0	-	0
Committees	-	0	-	0	-	0	-	0	-	0	-	0
Other	-	134	-	134	-	142	-	142	-	134	-	134
Post-employment	-	0	-	0	-	0	-	0	-	0	-	0
Termination of office	-	0	-	0	-	0	-	0	-	0	-	0
Stock-based	-	0	-	0	-	0	-	0	-	0	-	0
Total remuneration	-	2,963	-	2,963	-	3,240	-	3,240	-	3,807	-	3,807

BD: Board of Directors; EB: Executive Board; FC: Fiscal Council

¹ There is no Fiscal Council installed.

² Data from 2018 restated.

Economic and Financial Indicators

Wealth Generation – Value Added Statement (BRL thousand)

	2017	2018	2019
Revenues	4,048,604	1,480,653	3,686,734
Energy sales and services	4,048,604	1,480,653	3,686,734
Other revenue	0	0	0
Revenues related to the construction of own assets	0	0	0
Provision for doubtful accounts – reversal/(constitution)	0	0	0
Inputs purchased from third parties (including tax values – ICMS, IPI, PIS and Cofins)	(587,859)	(526,093)	(867,987)
Costs of products, goods and services sold	(511,257)	(437,272)	(734,103)
Materials, energy, third-party service and others	(52,891)	(73,446)	(111,719)
Loss/Recovery of asset values	0	0	0
Other	(23,711)	(15,375)	(22,165)
Gross value added	3,460,745	954,560	2,818,747
Depreciation, amortization and exhaustion	0	0	0
Gain/(Loss) for non-recoverability of assets (CPC 01)	0	0	0
Reintegration quotas (depreciation, amortization)	(220,020)	(237,990)	(250,904)
Net added value produced by the entity	3,240,725	716,570	2,567,843
Value added received in transfer	148,108	93,836	770,174
Equity equivalence result	(50)	183	(628)
Financial revenues	54,144	81,459	99,472
Active exchange variation	0	0	668,869
Other	94,014	12,194	2,461
Total value added to be distributed	3,388,833	810,406	3,338,017

Distribution of value added (BRL thousand)

	2017	2018	2019
Staff	55,694	66,592	71,684
Direct remuneration	39,917	40,965	44,983
Benefits	16,634	22,413	22,922
FGTS	3,143	3,214	3,779
Social charges (except INSS)	0	0	0
Government – Taxes, fees and contributions	1,667,910	(94,430)	699,419
Federal	1,525,368	(245,657)	572,097
State	6,664	9,836	10,099
Municipal	118	256	307
Intersectoral obligations	135,760	141,135	116,916
Financiers – Remuneration of third-party capital	815,954	1,260,550	1,362,943
Interest (on loans/debentures)	505,329	538,725	443,689
Rentals	2,605	2,533	1,252
Monetary variation on debentures	0	0	0
Recovery of interest and monetary restatement of debentures	0	0	0
Other financial expenses	259,905	173,034	108,464
Other	48,115	546,258	809,538
Shareholders – Return on equity	845,275	(422,306)	1,203,971
Interest on equity capital	602,000	578,000	466,999
Dividends	200,753	0	630,246
Retained earnings/loss for the year	42,522	(1,000,306)	106,726
Non-controlling interests in retained earnings	0	0	0
Realization of assigned cost of fixed assets	0	0	0
Other	0	0	0
Company – Community investments	0	0	0
Value Added Distributed (total)	3,388,833	810,406	3,338,017

Investments¹

	2017	2018	2019
Expansion	0	0	0
Modernization	342,197	222,933	535,311
Maintenance	526	21,611	13,187
Operation	0	0	0
Other	791	521	0
Total	343,514	245,065	548,498

¹ Based on the societary statements.

Internal Social Indicators

Employees/employability/managers

	2017	2018	2019
(a) General information			
Total number of employees	278	320	332
Number of contractors (contractors, subcontractors, freelancers) by employment type, employment contract and region	95	117	124
Employees up to 30 years old (%)	8.6%	15.0%	16.0%
Employees aged between 31 and 40 (%)	23.4%	25.3%	28.9%
Employees aged between 41 and 50 (%)	33.8%	31.6%	30.7%
Employees aged over 50 (%)	34.2%	28.1%	24.4%
Women in relation to total employees (%)	8.3%	8.8%	8.1%
Women in managerial positions – in relation to total managerial positions (%)	0.0%	0.0%	6.3%
Black employees in relation to total employees (%)	1.1%	1.6%	1.2%
Black employees in relation to total employees (%)	20.1%	22.8%	22.9%
Black (black and mixed race) employees in managerial positions in relation to total managerial positions (%)	0.0%	0.0%	12.5%
Trainees in relation to total employees (%)	0.4%	0.3%	2.4%
Employees of the apprentice hiring program (No.)	0	3	3
Employees with disabilities (No.)	0	0	1
b) Remuneration, benefits and career			
Remuneration (BRL thousand)			
Gross payroll (BRL thousand)	71,095	78,062	84,080
Compulsory social charges (BRL thousand)	14,544	14,859	16,174
Benefits (BRL thousand)	NA	NA	NA
Education (BRL thousand)	26	116	279
Food (BRL thousand)	4,298	4,933	5,034
Transportation (BRL thousand)	1,513	1,186	1,186
Health (BRL thousand)	3,348	4,093	4,941
Foundation (private pension) (BRL thousand) ¹	1,697	1,784	1,939
Safety and occupational medicine (BRL thousand)	37	247	368
Culture (BRL thousand)	0	0	0
Training and professional development (BRL thousand)	402	424	475
Day care or day care allowance (BRL thousand)	16	29	26
Employee profit sharing (BRL thousand)	4,569	8,723	7,323
Other (housing, life insurance, gift voucher) (BRL thousand)	1,004	927	692

¹ The Foundation item refers to the foundation for private pension administration.

Employees/employability/managers (cont.)

	2017	2018	2019
(c) Profit-sharing			
Total investment in the company's profit sharing program (BRL thousand)	4,569	8,723	7,323
Distributed values in relation to gross payroll (%)	6.4%	11.2%	8.7%
Division of the highest remuneration for the lowest remuneration paid for the one granted	27.14	30.93	31.13
Division of the company's lowest remuneration by the minimum wage in force	2.22	2.03	2.04
d) Remuneration profile			
Categories (average salary in the current year) – BRL			
Board positions	37,892	40,354	42,419
Managerial positions	31,738	30,832	18,937
Administrative positions ²	11,125	10,039	7,024
Production positions	5,826	5,427	6,311
e) Health and safety			
Average overtime per employee/year	73.61	107.21	180.07
Total company TF (frequency rate) index in the period, for employees	5.01	2.78	0.00
TG index (severity rate) in the period, for employees	0.00	45.00	0.00
Total company TF (frequency rate) index in the period, for subcontractors/contractors	7.34	7.79	3.3
TG index (severity rate) in the period, for subcontractors/contractors	39.83	68.00	3,300
TF index (frequency rate) of the company in the period for the workforce (own + third parties)	6.15	6.36	1.37
TG index (severity rate) in the period for the workforce (own + third parties)	32.78	62.00	1,372
Deaths – own	0.00	0.00	0.00
Deaths – third parties	0.00	0.00	1.00
Lost day rate for employees ³	0.0290	0.0360	NA
Occupational illness rate for employees	0.00	0.00	NA
Absenteeism rate	NA	NA	NA

² Administrative positions: assistants, analysts, supervisors and specialists (until 2018, they also considered the coordinators, who from 2019 fit into managerial positions).

³ In this case, lost days are considered only absences for accidents and occupational diseases.

Employees/employability/managers (cont.)

	2017	2018	2019
f) Professional development			
Schooling profile – breakdown in percentage of total employees (%)			
Elementary school	1.8%	1.6%	1.2%
High school	43.5%	45.0%	39.2%
Technical instruction	0.0%	0.6%	7.2%
Tertiary education	39.6%	38.4%	38.6%
Postgraduate (specialization, master's, doctorate)	15.1%	14.4%	13.9%
Amount invested in professional development and education (BRL thousand)	428	540	754
Average hours of training per year, per employee, broken down by functional category			
Executive Board	NA	7.6	55.3
Management	24.6	29.6	64.4
Administrative	22.7	30.7	40.7
Operational	15.9	86.9	51.8
Total training hours per employee/year	18.6	65.3	50.1
g) Behavior in the face of dismissals			
Number of employees at the end of the period	278	320	332
Number of admissions during the period	26	58	58
Turnover rate	7.7%	5.9%	14.2%
Labor complaints			
Amount provisioned in the period (BRL million) ⁴	0	0	0
Number of labor lawsuits filed against the company in the period	4	44	7
Number of labor lawsuits found to be justified in the period	1	0	0
Number of labor lawsuits found to be unfounded in the period	0	24	37
Total amount of indemnities and fines paid for the period (BRL thousand)	0	0	0
h) Preparation for retirement			
Investments in supplementary pension (BRL thousand)	1,697	1,784	1,939
Number of beneficiaries of the supplementary pension program	251	265	288

⁴ Data from 2018 restated.

External Social Indicators

Communities

	2017	2018	2019
Health and safety impacts			
Total number of accidents without deaths in the population	0	0	0
Total number of deaths in the population	0	0	0
Lawsuits arising out of accidents with the population – General Litigation Basis	0	0	0
Company involvement with social action			
Resources invested in education (BRL thousand)	1,918	2,193	2,290
Resources invested in health and sanitation (BRL thousand)	750	1,321	1,917
Resources invested in culture (BRL thousand)	4,666	617	2,544
Resources invested in sports (BRL thousand)	1,823	270	1,100
Other resources invested in social actions (BRL thousand)	0	305	0
Employees carrying out volunteer work in the community outside the company/total employees (%)	*	26.3%	22%
Quantity of monthly hours donated (released from normal working hours) by the company for voluntary employee work	*	0	0
Involvement of the company in cultural, sports and social projects (Rouanet Law, Sports Incentive Law, Pronon, Pronas, Childhood and Adolescence Fund, Elderly Fund)			
Amount of resources allocated to projects (BRL thousand)	9,157	4,706	7,851
Number of projects benefited	24	15	14
Amount of resources allocated to the largest project (BRL thousand)	870	800	1,124
Project name	Circuito Corrida pelo Verde	Peixes do Brasil (livro)	Projeto Guri
Proposer	Benedito Franco Leal Filho	Marte Cultura and Educação	Sustenidos Organização Social de Cultura

*In 2017, the number of volunteers from all units of CTG Brasil was consolidated in Rio Paranapanema

Electrical Sector Indicators

Resources applied in technological and scientific research and development by research theme (Manual of Research and Development – Aneel)

	2017		2018		2019	
	Value (BRL thousand)	%	Value (BRL thousand)	%	Value (BRL thousand)	%
FA – Alternative Sources of Electric Power Generation	0.0	0.0%	0.0	0.0%	644.5	12.2%
GT – Thermoelectric Generation	0.0	0.0%	0.0	0.0%	0.0	0.0%
GB – Basin and Reservoir Management	0.0	0.0%	0.0	0.0%	44.5	0.8%
MA – Environment	0.0	0.0%	737.0	38.0%	1,526.2	28.9%
SE – Safety	0.0	0.0%	0.0	0.0%	415.3	7.9%
EF – Energy Efficiency	0.0	0.0%	0.0	0.0%	0.0	0.0%
PL – Electric Power Systems Planning	11.7	2.1%	68.0	3.5%	35.1	0.7%
OP – Electric Power Systems Operation	0.0	0.0%	182.0	9.4%	549.4	10.4%
SC – Supervision, Control and Protection of Electrical Power Systems	0.0	0.0%	951.0	49.1%	1,426.5	27.0%
QC – Quality and Reliability of Electric Power Services	0.0	0.0%	0.0	0.0%	0.0	0.0%
MF – Measuring, Billing and Combating Trade Losses	0.0	0.0%	0.0	0.0%	0.0	0.0%
OU – Other	538.0	97.9%	0.0	0.0%	643.3	12.2%
Total	549.7	100.0%	1,938.0	100.0%	5,284.8	100.0%

Environmental Indicators

Environmental Indicators

	2017	2018	2019
Waste generation and treatment			
Emission			
Annual volume of greenhouse gases (CO ₂ , CH ₄ , N ₂ O, HFC, PFC, SF ₆) emitted into the atmosphere (in tons of CO ₂ equivalent)	NA	NA	2,370.03
Annual emissions of ozone depleting gases (in tons of CFC equivalent)	NA	NA	244.28
Effluent			
Total water discharge by quality and destination (m ³ /year)	NA	NA	NA
River (m ³ /year)	NA	NA	NA
Wastewater Treatment Plant (m ³ /year)	NA	NA	NA
Municipal sanitation company (m ³ /year)	NA	NA	NA
Solids			
Annual quantity (in tons) of solid waste generated (garbage, waste, rubble, etc.)	171.80	168.30	72.15
Amount of PCB contaminated waste (ascarel) destined (kg)	0.0	0.0	0.0
Use of resources in the production process and management processes of the organization			
Total energy consumption by source, in GJ¹	988.53	2,593.76	3,654.99
Non renewable fuels ¹	930.92	2,347.92	3,616.27
Diesel ¹	739.86	2,064.72	2,929.35
Gasoline ¹	121.48	242.38	617.33
Natural gas ¹	0.00	0.00	0.00
Other – Emergency auxiliary group (diesel replacement) ¹	69.58	40.83	69.58
Renewable fuels ¹	44.65	232.88	37.16
Ethanol ¹	44.65	232.88	37.16
Electricity (GJ) ¹	12.96	12.96	1.56
Electric power sold (GJ) ¹	77,029,200	74,768,400	76,824,000
Energy consumption per GJ sold (GJ) ¹	0.0000128	0.0000347	0.0000476

¹ Historical data restated.

Environmental Indicators (cont.)

	2017	2018	2019
Total water consumption by source (in m³)			
Supply (public network)	NA	NA	NA
Underground source (well)	NA	NA	NA
Surface catchment (watercourses)	NA	NA	NA
Bottled mineral water (human consumption)	68	83	141
Total water consumption (in m ³)	68	83	141
Water consumption per employee (in m ₃) ¹	0.245	0.259	0.425
Environmental education and awareness			
Environmental education – In the organization			
Number of employees trained in environmental education programs.	215	200	265
Percentage of employees trained in environmental education programs/total employees	100%	12%	20%
Number of hours of environmental training/total hours of training	0.2%	0.2%	3%
Environmental Education – Community			
Number of elementary and high school units attended	5	38	6
Number of students served	1,270	2,145	550
Number of trained teachers	NA	0	0
Number of technical and higher education units served	0	1	1
Number of students served	0	1,422	45
Resources invested (BRL thousand)	38	24	12

¹ Historical data restated.

Performance Indicators

	2017	2018	2019
Power consumption of generating and auxiliary units (kWh)	28,226,339	26,722,793	21,093,178
Water consumption per KWh generated (maximum flow consumption (m ³ /s) per KWh delivered)	NA	NA	NA
Restoration of riparian forest (seedling units or planted/recovered area per year) (hectares)	0	0	100
Rescue of fish in turbines	542	2,800	1,800
Restocking of fish (number of fry)	2,168,000	2,100,000	2,100,000
Lubricant and hydraulic oil leakage in turbines (tons/year or m ³ /year, depending on the type of oil)	NA	0	0
Recovery of areas degraded by the extraction of coal and its waste generated (recovered area unit – hectares per year)	NA	NA	NA
Recovery of areas degraded by the extraction of coal and its waste generated (commitment of resources in recovery and preservation projects) (BRL/year)	NA	NA	NA
Replacement water consumption during generation (m ³ /MWh)	NA	NA	NA

RIO PARANAPANEMA ENERGIA

Operational and Productivity Indicators

Technical data (inputs, production capacity, sales, losses)

	2017	2018	2019
Energy generated (GWh) ¹	13,525.00	12,457.90	7,740.83
Jurumirim HPP	720.0	540.2	279.4
Chavantes HPP	2,533.7	2,021.9	922.7
Salto Grande HPP	568.8	517.1	332.8
Canoas II HPP	556.2	494.3	308.4
Canoas I HPP	665.3	549.4	386.0
Capivara HPP	3,367.9	3,496.2	2,388.4
Taquaruçu HPP	2,653.0	2,466.8	1,502.4
Rosana HPP	2,390.6	2,281.3	1,523.4
Palmeiras SHP	29.2	43.3	46.8
Retiro SHP	40.3	47.4	50.5
Energy sold (GWh) ²	8,422.0	7,989.6	8,634.1
Installed capacity (MW)	2,281.8	2,289.8	2,297.8

¹Historical data restated.

²It considers quotas and sales contracts and does not consider Short Term Trading (MCP) and Energy Reallocation Mechanisms (MRE). Historical data restated.

Governance – Managers

Governance – Managers

	2017				2018				2019			
	BD	EB	FC	Total	BD	EB	FC	Total	BD	EB	FC	Total
Number of members	6	5	6	17	7	5	6	18	5	5	6	16
Number of paid members	2	3	6	11	4	4	6	14	2	2	6	10
Annual fixed remuneration (BRL thousand)												
Salary or pro-labore	390	4,577	880	5,847	383	2,110	902	3,395	415	730	902	2,047
Direct or indirect benefits	74	252	0	326	78	104	0	182	50	121	0	171
Committee participations	0	0	0	0	0	0	0	0	0	0	0	0
Other	216	1,546	176	1,938	187	428	180	795	177	303	180	660
Variable remuneration (BRL thousand)												
Bonus	40	837	0	877	21	165	0	186	0	0	0	0
Profit sharing	39	102	0	141	129	254	0	383	36	87	0	-51
Participation in meetings	0	0	0	0	0	0	0	0	0	0	0	0
Committees	0	0	0	0	0	0	0	0	0	0	0	0
Other	14	295	22	331	7	58	26	91	0	0	27	27
Post-employment	27	180	0	207	22	82	0	104	20	48	0	68
Termination of office	0	0	0	0	0	0	0	0	0	0	0	0
Stock-based	0	0	0	0	0	0	0	0	0	0	0	0
Total remuneration	800	7,789	1,078	9,667	827	3,201	1,108	5,136	698	1,114	1,109	2,921

BD: Board of Directors; EB: Executive Board; FC: Fiscal Council.

Economic and Financial Indicators

Wealth Generation – Value Added Statement (BRL thousand)

	2017	2018	2019
Revenues	1,709,539	1,506,368	1,607,503
Energy sales and services	1,631,236	1,459,321	1,554,177
Other revenue	0	0	0
Revenues related to the construction of own assets	75,622	47,047	53,326
Provision for doubtful accounts – reversal/(constitution)	2,681	0	0
Inputs purchased from third parties (including tax values – ICMS, IPI, PIS and Cofins)	(754,778)	(517,969)	(629,352)
Costs of products, goods and services sold	(595,746)	(392,024)	(464,867)
Materials, energy, third-party service and others	(51,033)	(53,027)	(85,631)
Loss/Recovery of asset values	(75,625)	(47,047)	(53,326)
Other	(32,374)	(25,871)	(25,528)
Gross value added	954,761	988,399	978,151
Depreciation, amortization and exhaustion	(224,204)	(213,068)	(221,101)
Gain/(Loss) for non-recoverability of assets (CPC 01)	16,878	0	0
Reintegration quotas (depreciation, amortization)	0	0	0
Net added value produced by the entity	747,435	775,331	757,050
Value added received in transfer	91,579	85,181	74,082
Equity equivalence result	0	0	0
Financial revenues	91,195	84,844	73,792
Other	384	337	290
Total value added to be distributed	839,014	860,512	831,132

Distribution of value added (BRL thousand)

	2017	2018	2019
Staff	85,292	64,581	63,331
Direct remuneration	49,190	38,811	41,494
Benefits	25,739	17,342	13,575
FGTS	6,583	4,644	4,793
Social charges (except INSS)	3,780	3,784	3,469
Government – Taxes, fees and contributions	336,620	306,598	314,585
Federal	314,153	300,592	292,986
State	22,273	5,939	21,522
Municipal	194	67	77
Intersectoral obligations	0	0	0
Financiers – Remuneration of third-party capital	173,221	233,422	206,825
Interest (on loans/debentures)	113,509	105,730	90,000
Rentals	4,762	2,704	2,199
Monetary variation on debentures	19,428	36,453	35,906
Recovery of interest and monetary restatement of debentures	0	0	0
Other financial expenses	35,522	88,535	78,720
Other	0	0	0
Shareholders – Return on equity	243,881	255,911	313,130
Interest on equity capital	74,000	74,000	68,000
Dividends	242,649	240,934	245,130
Retained earnings/loss for the year	0	0	0
Non-controlling interests in retained earnings	0	0	0
Realization of assigned cost of fixed assets	(72,768)	(59,023)	(66,739)
Other	0	0	0
Company – Community investments	0	0	0
Value Added Distributed (total)	839,014	860,512	831,132

Investments

	2017	2018	2019
Expansion	0	0	0
Modernization	57,942	31,207	7,889
Maintenance	16,000	12,392	25,613
Operation	0	0	0
Other	12,448	4,261	4,453
Total	86,390	47,860	37,955

Internal Social Indicators

Employees/employability/managers

	2017	2018	2019
(a) General information			
Total number of employees	304	291	287
Number of contractors (contractors, subcontractors, freelancers) by employment type, employment contract and region	77	79	87
Employees up to 30 years old (%)	22.7%	21.3%	30.3%
Employees aged between 31 and 40 (%)	29.9%	29.2%	25.8%
Employees aged between 41 and 50 (%)	31.3%	32.6%	30.0%
Employees aged over 50 (%)	16.1%	16.8%	13.9%
Women in relation to total employees (%)	18.8%	18.9%	9.4%
Women in managerial positions – in relation to total managerial positions (%)	19.2%	14.3%	7.1%
Black employees in relation to total employees (%)	2.0%	2.1%	1.1%
Black employees in relation to total employees (%)	10.2%	10.3%	14.6%
Black (black and mixed race) employees in managerial positions in relation to total managerial positions (%)	3.9%	0.0%	3.6%
Trainees in relation to total employees (%)	1.6%	2.7%	1.7%
Employees of the apprentice hiring program (No.)	7	3	2
Employees with disabilities (No.)	9	9	2
b) Remuneration, benefits and career			
Remuneration (BRL thousand)			
Gross payroll (BRL thousand)	95,680	74,183	71,577
Compulsory social charges (BRL thousand)	20,752	18,030	16,600
Benefits (BRL thousand)	NA	NA	NA
Education (BRL thousand)	825	310	194
Food (BRL thousand)	5,181	6,301	6,470
Transportation (BRL thousand)	75	82	41
Health (BRL thousand)	6,809	3,077	2,415
Foundation (private pension) (BRL thousand) ¹	1,121	1,003	676
Safety and occupational medicine (BRL thousand)	945	556	1,484
Culture (BRL thousand)	0	0	0
Training and professional development (BRL thousand)	675	466	688
Day care or day care allowance (BRL thousand)	105	99	71
Employee profit sharing (BRL thousand)	4,002	7,871	3,775
Other (housing, life insurance, gift voucher) (BRL thousand)	8,287	558	735

¹ The Foundation item refers to the foundation for private pension administration.

Employees/employability/managers (cont.)

	2017	2018	2019
(c) Profit-sharing			
Total investment in the company's profit sharing program (BRL thousand)	4,002	7,871	3,775
Distributed values in relation to gross payroll (%)	4.2%	10.6%	5.3%
Division of the highest remuneration for the lowest remuneration paid for the one granted	27.42	38.05	30.56
Division of the company's lowest remuneration by the minimum wage in force	2.45	1.67	1.8
d) Remuneration profile			
Categories (average salary in the current year) – BRL			
Board positions	59,894	46,467	49,684
Managerial positions	24,428	25,656	20,971
Administrative positions ²	9,053	9,470	6,405
Production positions	5,037	5,966	5,921
e) Health and safety			
Average overtime per employee/year	141.39	132.94	125.57
Total company TF (frequency rate) index in the period, for employees	0.00	2.92	0.00
TG index (severity rate) in the period, for employees	0.00	24.81	0.00
Total company TF (frequency rate) index in the period, for subcontractors/contractors	0.00	1.60	0.00
TG index (severity rate) in the period, for subcontractors/contractors	0.00	0.00	0.00
TF index (frequency rate) of the company in the period for the workforce (own + third parties)	0.00	2.29	0.00
TG index (severity rate) in the period for the workforce (own + third parties)	0.00	12.97	0.00
Deaths – own	0.00	0.00	0.00
Deaths – third parties	0.00	0.00	0.00
Lost day rate for employees ³	0.00	0.00	0.00
Occupational illness rate for employees	0.00	0.00	0.00
Absenteeism rate	NA	NA	NA

² Administrative positions: assistants, analysts, supervisors and specialists (until 2018, they also considered the coordinators, who from 2019 fit into managerial positions).

³ In this case, lost days are considered only absences for accidents and occupational diseases.

Employees/employability/managers (cont.)

	2017	2018	2019
f) Professional development			
Schooling profile – breakdown in percentage of total employees (%)			
Elementary school	0.3%	0.3%	0.3%
High school	13.8%	13.1%	11.8%
Technical instruction	17.4%	17.2%	32.4%
Tertiary education	46.7%	47.4%	38.0%
Postgraduate (specialization, master's, doctorate)	21.7%	22.0%	17.4%
Amount invested in professional development and education (BRL thousand)	1,281	776	882
Average hours of training per year, per employee, broken down by functional category			
Executive Board	NA	51.3	47.5
Management	51.2	26.7	53.3
Administrative	42.8	18.4	33.4
Operational	73.8	43.1	100.1
Total training hours per employee/year	57.5	31.6	78.7
g) Behavior in the face of dismissals			
Number of employees at the end of the period	304	291	287
Number of admissions during the period	22	14	68
Turnover rate	15.3%	8.4%	7.9%
Labor complaints			
Amount provisioned in the period (BRL million)	13.91	22.17	16.33
Number of labor lawsuits filed against the company in the period	1	94	20
Number of labor lawsuits found to be justified in the period	1	0	12
Number of labor lawsuits found to be unfounded in the period	0	1	20
Total amount of indemnities and fines paid for the period (BRL thousand)	148	23	8,700
h) Preparation for retirement			
Investments in supplementary pension (BRL thousand)	1,121	1,003	676
Number of beneficiaries of the supplementary pension program	300	293	106

⁴ Historical data restated.

External Social Indicators

Communities

	2017	2018	2019
Health and safety impacts			
Total number of accidents without deaths in the population	0	2	0
Total number of deaths in the population	0	0	0
Lawsuits arising out of accidents with the population – General Litigation Basis	0	0	0
Company involvement with social action			
Resources invested in education (BRL thousand)	1,740	120	955
Resources invested in health and sanitation (BRL thousand)	1,935	783	500
Resources invested in culture (BRL thousand)	1,554	2,000	1,745
Resources invested in sports (BRL thousand)	754	505	500
Other resources invested in social actions (BRL thousand)	0	0	0
Employees carrying out volunteer work in the community outside the company/total employees (%)	40%	41%	62%
Quantity of monthly hours donated (released from normal working hours) by the company for voluntary employee work	37	0	4
Involvement of the company in cultural, sports and social projects (Rouanet Law, Sports Incentive Law, Pronon, Pronas, Childhood and Adolescence Fund, Elderly Fund)			
Amount of resources allocated to projects (BRL thousand)	5,983	3,403	3,701
Number of projects benefited	33	9	7
Amount of resources allocated to the largest project (BRL thousand)	600	2,000	755
Project name	Amparo ao Idoso – Hospital de Câncer de Barretos	Balé da China	My Dream
Proposer	FMI de Barretos	DellArte	DellArte

Electrical Sector Indicators

Resources applied in technological and scientific research and development by research theme (Manual of Research and Development – Aneel)

	2017		2018		2019	
	Value (BRL thousand)	%	Value (BRL thousand)	%	Value (BRL thousand)	%
FA – Alternative Sources of Electric Power Generation	0.0	0.0%	0.0	0.0%	0.0	0.0%
GT – Thermoelectric Generation	0.0	0.0%	0.0	0.0%	0.0	0.0%
GB – Basin and Reservoir Management	880.0	22.6%	44.0	2.1%	0.0	0.0%
MA – Environment	1,253.0	32.2%	1,152.5	53.9%	1,522.7	29.5%
SE – Safety	0.0	0.0%	0.0	0.0%	0.0	0.0%
EF – Energy Efficiency	0.0	0.0%	0.0	0.0%	0.0	0.0%
PL – Electric Power Systems Planning	1,242.0	31.9%	62.3	2.9%	447.4	8.7%
OP – Electric Power Systems Operation	0.0	0.0%	778.2	36.4%	1,882.0	36.5%
SC – Supervision, Control and Protection of Electrical Power Systems	254.0	6.5%	100.9	4.7%	1,274.7	24.7%
QC – Quality and Reliability of Electric Power Services	0.0	0.0%	0.0	0.0%	0.0	0.0%
MF – Measuring, Billing and Combating Trade Losses	0.0	0.0%	0.0	0.0%	0.0	0.0%
OU – Other	267.0	6.9%	0.0	0.0%	33.2	0.6%
Total	3,896.0	100.0%	2,137.9	100.0%	5,160.0	100.0%

Environmental Indicators

Environmental Indicators

	2017	2018	2019
Waste generation and treatment			
Emission			
Annual volume of greenhouse gases (CO ₂ , CH ₄ , N ₂ O, HFC, PFC, SF ₆) emitted into the atmosphere (in tons of CO ₂ equivalent)	2,642.12	NA	2,303.17
Annual emissions of ozone depleting gases (in tons of CFC equivalent)	14.7	NA	5.43
Effluent			
Total water discharge by quality and destination (m ³ /year)	103,989	93,825	114,380
River (m ³ /year)	0.0	NA	NA
Wastewater Treatment Plant (m ³ /year)	103,989	93,825	114,380
Municipal sanitation company (m ³ /year)	0.0	NA	NA
Solids			
Annual quantity (in tons) of solid waste generated (garbage, waste, rubble, etc.)	313.4	224.5	117,079.0
Amount of PCB contaminated waste (ascarel) destined (kg)	0.0	0.0	0.0
Use of resources in the production process and management processes of the organization			
Total energy consumption by source, in GJ¹	5,442.39	4,579.31	5,148.92
Non renewable fuels ¹	4,882.21	4,201.71	4,797.44
Diesel ¹	1,946.64	1,615.92	1,665.41
Gasoline ¹	2,688.88	2,319.54	2,870.59
Natural gas ¹	0.00	0.00	0.00
Other – Emergency auxiliary group (diesel replacement) ¹	246.69	266.25	261.44
Renewable fuels ¹	408.00	235.83	227.47
Ethanol ¹	408.00	235.83	227.47
Electricity (GJ) ¹	152.18	141.77	124.01
Electric power sold (GJ) ¹	30,319,200	28,434,960	31,082,760
Energy consumption per GJ sold (GJ) ¹	0.0001795	0.0001610	0.0001657

¹ Historical data restated.

Environmental Indicators (cont.)

	2017	2018	2019
Total water consumption by source (in m³)			
Supply (public network)	NA	NA	NA
Underground source (well)	126,797	129,987	142,975
Surface catchment (watercourses)	NA	NA	NA
Bottled mineral water (human consumption)	130	103	134
Total water consumption (in m ³)	126,927	130,090	143,109
Water consumption per employee (in m ³)	417.5	447.0	498.6
Environmental education and awareness			
Environmental education – In the organization			
Number of employees trained in environmental education programs	66	0	0
Percentage of employees trained in environmental education programs/total employees	NA	0%	0%
Number of hours of environmental training/total hours of training	2%	0%	0%
Environmental Education – Community			
Number of elementary and high school units attended	27	19	10
Number of students served	2,768	1,612	720
Number of trained teachers	520	0	0
Number of technical and higher education units served	0	0	0
Number of students served	0	0	0
Resources invested (BRL thousand)	NA	NA	NA

Performance Indicators

	2017	2018	2019
Power consumption of generating and auxiliary units (kWh)	30,362,684	29,126,690	27,189,235
Water consumption per KWh generated (maximum flow consumption (m ³ /s) per KWh delivered)	ND	ND	ND
Restoration of riparian forest (seedling units or planted/recovered area per year) (hectares)	33.67	239	20
Rescue of fish in turbines	683	1,085	751
Restocking of fish (number of fry)	1,685,000	1,551,500	1,667,600
Lubricant and hydraulic oil leakage in turbines (tons/year or m ³ /year, depending on the type of oil)	0.00	70.55	0.00
Recovery of areas degraded by the extraction of coal and its waste generated (recovered area unit – hectares per year)	NA	NA	NA
Recovery of areas degraded by the extraction of coal and its waste generated (commitment of resources in recovery and preservation projects) (BRL/year)	NA	NA	NA
Replacement water consumption during generation (m ³ /MWh)	NA	NA	NA

RIO CANOAS ENERGIA

Operational and Productivity Indicators

Technical data (inputs, production capacity, sales, losses)

	2017	2018	2019
Energy generated (GWh)	592.43	657.13	621.50
Energy sold (GWh) ¹	577.52	897.67	812.85
Installed capacity (MW)	191.90	191.90	191.90

¹ It considers quotas and sales contracts and does not consider Short Term Trading (MCP) and Energy Reallocation Mechanisms (MRE).

Governance – Managers

Governance – Managers

	2017				2018				2019			
	BD	EB	FC ¹	Total	BD	EB	FC ¹	Total	BD	EB	FC ¹	Total
Number of members ¹	4	2	0	6	4	3	0	7	4	3	0	7
Number of paid members	0	0	0	0	0	0	0	0	0	0	0	0
Annual fixed remuneration (BRL thousand)												
Salary or pro-labore	-	-	-	-	-	-	-	-	-	-	-	-
Direct or indirect benefits	-	-	-	-	-	-	-	-	-	-	-	-
Committee participations	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Variable remuneration (BRL thousand)												
Bonus	-	-	-	-	-	-	-	-	-	-	-	-
Profit sharing	-	-	-	-	-	-	-	-	-	-	-	-
Participation in meetings	-	-	-	-	-	-	-	-	-	-	-	-
Committees	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Post-employment	-	-	-	-	-	-	-	-	-	-	-	-
Termination of office	-	-	-	-	-	-	-	-	-	-	-	-
Stock-based	-	-	-	-	-	-	-	-	-	-	-	-
Total remuneration	-	-	-	-	-	-	-	-	-	-	-	-

BD: Board of Directors; EB: Executive Board; FC: Fiscal Council.

¹ There is no Fiscal Council installed.

Economic and Financial Indicators

Wealth Generation – Value Added Statement (BRL thousand)

	2017	2018	2019
Revenues	122,511	198,215	187,064
Energy sales and services	122,511	198,215	187,064
Other revenue	0	0	0
Revenues related to the construction of own assets	0	0	0
Provision for doubtful accounts – reversal/(constitution)	0	0	0
Inputs purchased from third parties (including tax values – ICMS, IPI, PIS and Cofins)	(31,634)	(80,417)	(113,539)
Costs of products, goods and services sold	(19,297)	(72,190)	(72,194)
Materials, energy, third-party service and others	(7,342)	(9,265)	(16,039)
Loss/Recovery of asset values	0	0	0
Other	(4,995)	1,038	(25,306)
Gross value added	90,877	117,798	73,525
Depreciation, amortization and exhaustion	0	0	0
Gain/(Loss) for non-recoverability of assets (CPC 01)	0	0	0
Reintegration quotas (depreciation, amortization)	(35,339)	(36,101)	(32,022)
Net added value produced by the entity	55,538	81,697	41,503
Value added received in transfer	5,369	2,776	2,690
Equity equivalence result	0	0	0
Financial revenues	5,369	2,776	2,690
Other	0	0	0
Total value added to be distributed	60,907	84,473	44,193

Distribution of value added (BRL thousand)

	2017	2018	2019
Staff	2,410	2,917	3,271
Direct remuneration	1,590	1,697	1,956
Benefits	706	1,086	1,123
FGTS	114	134	192
Social charges (except INSS)	0	0	0
Government – Taxes, fees and contributions	17,440	25,222	11,506
Federal	12,833	19,585	5,060
State	9	0	869
Municipal	0	0	0
Intersectoral obligations	4,598	5,637	5,577
Financiers – Remuneration of third-party capital	37,082	33,900	42,509
Interest (on loans/debentures)	35,519	31,849	27,955
Rentals	77	51	43
Monetary variation on debentures	0	0	0
Recovery of interest and monetary restatement of debentures	0	0	0
Other financial expenses	1,486	2,000	14,511
Other	0	0	0
Shareholders – Return on equity	3,975	22,434	(13,093)
Interest on equity capital	0	8,000	0
Dividends	944	5,328	0
Retained earnings/loss for the year	3,031	9,106	(13,093)
Non-controlling interests in retained earnings	0	0	0
Realization of assigned cost of fixed assets	0	0	0
Other	0	0	0
Value Added Distributed (total)	60,907	84,473	44,193

Investments

	2017	2018	2019
Expansion	0	0	0
Modernization	0	0	0
Maintenance	751	2,278	4,364
Operation	0	0	0
Other	5,579	4,228	1,036
Total	6,330	6,506	5,400

Internal Social Indicators

Employees/employability/managers

	2017	2018	2019
(a) General information			
Total number of employees	27	29	27
Number of contractors (contractors, subcontractors, freelancers) by employment type, employment contract and region	8	8	10
Employees up to 30 years old (%)	81.5%	72.4%	74.1%
Employees aged between 31 and 40 (%)	11.1%	20.7%	22.2%
Employees aged between 41 and 50 (%)	7.4%	6.9%	3.7%
Employees aged over 50 (%)	0.0%	0.0%	0.0%
Women in relation to total employees (%)	14.8%	13.8%	14.8%
Women in managerial positions – in relation to total managerial positions (%)	0.0%	0.0%	0.0%
Black employees in relation to total employees (%)	0.0%	0.0%	0.0%
Black employees in relation to total employees (%)	18.5%	17.2%	18.5%
Black (black and mixed race) employees in managerial positions in relation to total managerial positions (%)	0.0%	0.0%	0.0%
Trainees in relation to total employees (%)	0.0%	0.0%	0.0%
Employees of the apprentice hiring program (No.)	0	0	0
Employees with disabilities (No.)	0	0	0
b) Remuneration, benefits and career			
Remuneration (BRL thousand)			
Gross payroll (BRL thousand)	513	591	708
Compulsory social charges (BRL thousand)	NA	NA	NA
Benefits (BRL thousand)	NA	NA	NA
Education (BRL thousand)	1	7	20
Food (BRL thousand)	250	272	326
Transportation (BRL thousand)	1	247	197
Health (BRL thousand)	215	247	284
Foundation (private pension) (BRL thousand) ¹	23	25	21
Safety and occupational medicine (BRL thousand)	1	22	29
Culture (BRL thousand)	0	0	0
Training and professional development (BRL thousand)	40	18	49
Day care or day care allowance (BRL thousand)	0	0	0
Employee profit sharing (BRL thousand)	142	217	187
Other (housing, life insurance, gift voucher) (BRL thousand)	95	30	9

¹ The Foundation item refers to the foundation for private pension administration.

Employees/employability/managers (cont.)

	2017	2018	2019
(c) Profit-sharing			
Total investment in the company's profit sharing program (BRL thousand)	142	271	187
Distributed values in relation to gross payroll (%)	5.1%	6.4%	4.8%
Division of the highest remuneration for the lowest remuneration paid for the one granted	6.62	6.62	6.95
Division of the company's lowest remuneration by the minimum wage in force	1.54	1.57	1.57
d) Remuneration profile			
Categories (average salary in the current year) - BRL			
Board positions	0	0	0
Managerial positions	0	0	10,863
Administrative positions ²	4,074	0	2,652
Production positions	2,720	2,802	2,818
e) Health and safety			
Average overtime per employee/year	110.24	107.54	111.48
Total company TF (frequency rate) index in the period, for employees	0.00	0.00	0.00
TG index (severity rate) in the period, for employees	0.00	0.00	0.00
Total company TF (frequency rate) index in the period, for subcontractors/contractors	0.00	0.00	0.00
TG index (severity rate) in the period, for subcontractors/contractors	0.00	0.00	0.00
TF index (frequency rate) of the company in the period for the workforce (own + third parties)	0.00	0.00	0.00
TG index (severity rate) in the period for the workforce (own + third parties)	0.00	0.00	0.00
Deaths – own	0.00	0.00	0.00
Deaths – third parties	0.00	0.00	0.00
Lost day rate for employees ³	0.00	0.00	0.00
Occupational illness rate for employees	0.00	0.00	0.00
Absenteeism rate	NA	NA	NA

² Administrative positions: assistants, analysts, supervisors and specialists (until 2018, they also considered the coordinators, who from 2019 fit into managerial positions).

³ In this case, lost days are considered only absences for accidents and occupational diseases.

Employees/employability/managers (cont.)

	2017	2018	2019
f) Professional development			
Schooling profile – breakdown in percentage of total employees (%)			
Elementary school	0.0%	0.0%	0.0%
High school	85.2%	79.3%	81.5%
Technical instruction	0.0%	6.9%	3.7%
Tertiary education	11.1%	10.3%	11.1%
Postgraduate (specialization, master's, doctorate)	3.7%	3.5%	3.7%
Amount invested in professional development and education (BRL thousand)	41	26	69
Average hours of training per year, per employee, broken down by functional category			
Executive Board	NA	0	0
Management	0	0	65.0
Administrative	21	47.3	32.7
Operational	21	59.3	49.9
Total training hours per employee/year	21	56.4	46.6
g) Behavior in the face of dismissals			
Number of employees at the end of the period	27	29	27
Number of admissions during the period	2	4	1
Turnover rate	20.5%	7.2%	7.1%
Labor complaints			
Amount provisioned in the period (BRL million) ⁴	0	0.221	0.219
Number of labor lawsuits filed against the company in the period	5	6	0
Number of labor lawsuits found to be justified in the period	0	1	0
Number of labor lawsuits found to be unfounded in the period	0	0	6
Total amount of indemnities and fines paid for the period (BRL thousand)	0	0	111
h) Preparation for retirement			
Investments in supplementary pension (BRL thousand)	23	25	21
Number of beneficiaries of the supplementary pension program	31	26	26

⁴ Historical data restated.

External Social Indicators

Communities

	2017	2018	2019
Health and safety impacts			
Total number of accidents without deaths in the population	1	0	0
Total number of deaths in the population	0	0	0
Lawsuits arising out of accidents with the population – General Litigation Basis	0	0	0
Company involvement with social action			
Resources invested in education (BRL thousand)	0	0	0
Resources invested in health and sanitation (BRL thousand)	0	0	0
Resources invested in culture (BRL thousand)	0	0	0
Resources invested in sports (BRL thousand)	0	0	0
Other resources invested in social actions (BRL thousand)	0	0	0
Employees carrying out volunteer work in the community outside the company/total employees (%)	0	59%	0%
Quantity of monthly hours donated (released from normal working hours) by the company for voluntary employee work	0	NA	0
Involvement of the company in cultural, sports and social projects (Rouanet Law, Sports Incentive Law, Pronon, Pronas, Childhood and Adolescence Fund, Elderly Fund)			
Amount of resources allocated to projects (BRL thousand)	0	0	0
Number of projects benefited	0	0	0
Amount of resources allocated to the largest project (BRL thousand)	0	0	0
Project name	NA	NA	NA
Proposer	NA	NA	NA

Electrical Sector Indicators

Resources applied in technological and scientific research and development by research theme (Manual of Research and Development – Aneel)

	2017		2018		2019	
	Value (BRL thousand)	%	Value (BRL thousand)	%	Value (BRL thousand)	%
FA – Alternative Sources of Electric Power Generation	0	0%	0	0%	0	0%
GT – Thermoelectric Generation	0	0%	0	0%	0	0%
GB – Basin and Reservoir Management	0	0%	0	0%	0	0%
MA – Environment	920	85%	1,572	78.9%	525	62.1%
SE – Safety	0	0%	0	0%	0	0%
EF – Energy Efficiency	0	0%	0	0%	0	0%
PL – Electric Power Systems Planning	105	10%	421	21.1%	316	37.3%
OP – Electric Power Systems Operation	0	0%	0	0%	0	0%
SC – Supervision, Control and Protection of Electrical Power Systems	0	0%	0	0%	0	0%
QC – Quality and Reliability of Electric Power Services	0	0%	0	0%	0	0%
MF – Measuring, Billing and Combating Trade Losses	0	0%	0	0%	0	0%
OU – Other	63	6%	0	0%	5	0.6%
Total	1,088	100%	1,993	100%	846	100%

Environmental Indicators

Environmental Indicators

	2017	2018	2019
Waste generation and treatment			
Emission			
Annual volume of greenhouse gases (CO ₂ , CH ₄ , N ₂ O, HFC, PFC, SF ₆) emitted into the atmosphere (in tons of CO ₂ equivalent)	NA	NA	95.54
Annual emissions of ozone depleting gases (in tons of CFC equivalent)	NA	NA	0.00
Effluent			
Total water discharge by quality and destination (m ³ /year)	NA	NA	NA
River (m ³ /year)	NA	NA	NA
Wastewater Treatment Plant (m ³ /year)	NA	NA	NA
Municipal sanitation company (m ³ /year)	NA	NA	NA
Solids			
Annual quantity (in tons) of solid waste generated (garbage, waste, rubble, etc.)	3.3	7.3	19.5
Amount of PCB contaminated waste (ascarel) destined (kg)	0.0	0.0	NA
Use of resources in the production process and management processes of the organization			
Total energy consumption by source, in GJ¹	291.68	741.55	410.65
Non renewable fuels ¹	284.00	712.35	380.87
Diesel ¹	284.00	306.51	263.02
Gasoline ¹	NA	86.34	11.35
Natural gas ¹	NA	NA	0.00
Other – Emergency auxiliary group (diesel replacement) ¹	NA	319.50	106.50
Renewable fuels ¹	NA	NA	0.00
Ethanol ¹	NA	NA	0.00
Electricity (GJ) ¹	7.68	29.21	29.79
Electric power sold (GJ) ¹	2,079,072	3,231,612	2,252,392
Energy consumption per GJ sold (GJ) ¹	0.0001403	0.0002295	0.0001823

¹ Historical data restated.

Environmental Indicators (cont.)

	2017	2018	2019
Total water consumption by source (in m³)			
Supply (public network)	NA	0	NA
Underground source (well)	NA	1	2.447
Surface catchment (watercourses)	NA	0	NA
Bottled mineral water (human consumption)	NA	4	6
Total water consumption (in m³)	NA	5	2.453
Water consumption per employee (in m³) ¹	NA	0.172	90.852
Environmental education and awareness			
Environmental education – In the organization			
Number of employees trained in environmental education programs	4	19	26
Percentage of employees trained in environmental education programs/total employees	100%	68%	80%
Number of hours of environmental training/total hours of training	64	1	NA
Environmental Education – Community			
Number of elementary and high school units attended	2	9	4
Number of students served	353	900	205
Number of trained teachers	5	90	10
Number of technical and higher education units served	2	1	2
Number of students served	350	100	205
Resources invested (BRL thousand)	164,682	10,600	NA

¹ Historical data restated.

Performance Indicators

	2017	2018	2019
Power consumption of generating and auxiliary units (kWh)	2,054,470	2,253,690	2,153,542
Water consumption per KWh generated (maximum flow consumption (m³/s) per KWh delivered)	NA	NA	NA
Restoration of riparian forest (seedling units or planted/recovered area per year) (hectares)	30	66	20
Rescue of fish in turbines	250	0	5
Restocking of fish (number of fry)	0	NA	NA
Lubricant and hydraulic oil leakage in turbines (tons/year or m³/year, depending on the type of oil)	NA	0	NA
Recovery of areas degraded by the extraction of coal and its waste generated (recovered area unit – hectares per year)	NA	NA	NA
Recovery of areas degraded by the extraction of coal and its waste generated (commitment of resources in recovery and preservation projects) (BRL/year)	NA	NA	NA
Replacement water consumption during generation (m³/MWh)	NA	NA	NA

RIO VERDE ENERGIA

Operational and Productivity Indicators

Technical data (inputs, production capacity, sales, losses)

	2017	2018	2019
Energy generated (GWh)	587.81	607.43	622.12
Energy sold (GWh) ¹	573.11	563.64	570.01
Installed capacity (MW)	116.00	116.00	116.00

¹ It considers quotas and sales contracts and does not consider Short Term Trading (MCP) and Energy Reallocation Mechanisms (MRE).

Governance – Managers

Governance – Managers

	2017				2018				2019			
	BD	EB	FC ¹	Total	BD	EB	FC ¹	Total	BD	EB	FC ¹	Total
Number of members	4	2	0	6	4	3	0	7	4	3	0	7
Number of paid members	0	0	0	0	0	0	0	0	0	0	0	0
Annual fixed remuneration (BRL thousand)												
Salary or pro-labore	-	-	-	-	-	-	-	-	-	-	-	-
Direct or indirect benefits	-	-	-	-	-	-	-	-	-	-	-	-
Committee participations	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Variable remuneration (BRL thousand)												
Bonus	-	-	-	-	-	-	-	-	-	-	-	-
Profit sharing	-	-	-	-	-	-	-	-	-	-	-	-
Participation in meetings	-	-	-	-	-	-	-	-	-	-	-	-
Committees	-	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Post-employment	-	-	-	-	-	-	-	-	-	-	-	-
Termination of office	-	-	-	-	-	-	-	-	-	-	-	-
Stock-based	-	-	-	-	-	-	-	-	-	-	-	-
Total remuneration	-	-	-	-	-	-	-	-	-	-	-	-

BD: Board of Directors; EB: Executive Board; FC: Fiscal Council.

¹ There is no Fiscal Council installed.

Economic and Financial Indicators

Wealth Generation – Value Added Statement (BRL thousand)

	2017	2018	2019
Revenues	180,263	248,686	209,068
Energy sales and services	180,263	248,686	209,068
Other revenue	0	0	0
Revenues related to the construction of own assets	0	0	0
Provision for doubtful accounts – reversal/(constitution)	0	0	0
Inputs purchased from third parties (including tax values – ICMS, IPI, PIS and Cofins)	(91,583)	(128,452)	(86,201)
Costs of products, goods and services sold	(44,697)	(73,871)	(44,561)
Materials, energy, third-party service and others	(8,476)	(9,742)	(12,563)
Loss/Recovery of asset values	0	0	0
Other	(38,410)	(44,839)	(29,077)
Gross value added	88,680	120,234	122,867
Depreciation, amortization and exhaustion	0	0	0
Gain/(Loss) for non-recoverability of assets (CPC 01)	0	0	0
Reintegration quotas (depreciation, amortization)	(22,990)	(24,975)	(15,265)
Net added value produced by the entity	65,690	95,259	107,062
Value added received in transfer	7,279	5,188	6,342
Equity equivalence result	0	0	0
Financial revenues	7,279	5,188	6,342
Other	0	0	0
Total value added to be distributed	72,969	100,447	113,944

Distribution of value added (BRL thousand)

	2017	2018	2019
Staff	8,105	9,366	1,976
Direct remuneration	5,024	5,354	1,450
Benefits	2,725	3,617	408
FGTS	356	395	118
Social charges (except INSS)	0	0	0
Government – Taxes, fees and contributions	22,920	35,272	37,335
Federal	18,207	29,638	31,772
State	0	0	0
Municipal	0	0	0
Intersectoral obligations	4,713	5,634	5,563
Financiers – Remuneration of third-party capital	20,504	17,325	37,751
Interest (on loans/debentures)	18,276	15,699	13,089
Rentals	798	710	17
Monetary variation on debentures	0	0	0
Recovery of interest and monetary restatement of debentures	0	0	0
Other financial expenses	1,433	916	24,645
Other	0	0	0
Shareholders – Return on equity	21,440	38,484	36,882
Interest on equity capital	13,000	13,000	12,501
Dividends	5,092	9,140	29,810
Retained earnings/loss for the year	3,348	16,344	(5,429)
Non-controlling interests in retained earnings	0	0	0
Realization of assigned cost of fixed assets	0	0	0
Other	0	0	0
Value Added Distributed (total)	72,969	100,447	113,944

Investments

	2017	2018	2019
Expansion	0	0	0
Modernization	0	0	0
Maintenance	677	231	2,341
Operation	0	0	0
Other	4,714	963	0
Total	5,391	1,194	2,341

Internal Social Indicators

Employees/employability/managers

	2017	2018	2019
(a) General information			
Total number of employees	58	72	20
Number of contractors (contractors, subcontractors, freelancers) by employment type, employment contract and region	13	19	9
Employees up to 30 years old (%)	55.2%	56.9%	50.0%
Employees aged between 31 and 40 (%)	31.0%	31.9%	50.0%
Employees aged between 41 and 50 (%)	12.1%	8.3%	0.0%
Employees aged over 50 (%)	1.7%	2.8%	0.0%
Women in relation to total employees (%)	46.6%	50.0%	10.0%
Women in managerial positions – in relation to total managerial positions (%)	0.0%	0.0%	0.0%
Black employees in relation to total employees (%)	1.7%	4.2%	0.0%
Black employees in relation to total employees (%)	6.9%	6.9%	15.0%
Black (black and mixed race) employees in managerial positions in relation to total managerial positions (%)	33.3%	0.0%	0.0%
Trainees in relation to total employees (%)	0.0%	0.0%	0.0%
Employees of the apprentice hiring program (No.)	0	1	0
Employees with disabilities (No.)	0	0	0
b) Remuneration, benefits and career			
Remuneration (BRL thousand)			
Gross payroll (BRL thousand)	9,503	10,725	2,377
Compulsory social charges (BRL thousand)	1,620	1,812	519
Benefits (BRL thousand)	NA	NA	NA
Education (BRL thousand)	14	28	18
Food (BRL thousand)	829	1,030	269
Transportation (BRL thousand)	142	414	404
Health (BRL thousand)	606	691	203
Foundation (private pension) (BRL thousand) ¹	154	148	15
Safety and occupational medicine (BRL thousand)	27	35	33
Culture (BRL thousand)	0	0	0
Training and professional development (BRL thousand)	135	100	45
Day care or day care allowance (BRL thousand)	5	0	0
Employee profit sharing (BRL thousand)	772	1,011	-582
Other (housing, life insurance, gift voucher) (BRL thousand)	367	153	3

¹ The Foundation item refers to the foundation for private pension administration.

Employees/employability/managers (cont.)

	2017	2018	2019
(c) Profit-sharing			
Total investment in the company's profit sharing program (BRL thousand)	772	1.011	-582
Distributed values in relation to gross payroll (%)	8.1%	9.4%	-24.5%
Division of the highest remuneration for the lowest remuneration paid for the one granted	20.27	11.22	1.85
Division of the company's lowest remuneration by the minimum wage in force	1.73	2.03	2.03
d) Remuneration profile			
Categories (average salary in the current year) – BRL			
Board positions	0	0	0
Managerial positions	22,767	21,241	0
Administrative positions ²	4,600	4,814	2,576
Production positions	2,600	2,455	2,706
e) Health and safety			
Average overtime per employee/year	61.13	68.23	147.69
Total company TF (frequency rate) index in the period, for employees	0.00	0.00	0.00
TG index (severity rate) in the period, for employees	0.00	0.00	0.00
Total company TF (frequency rate) index in the period, for subcontractors/contractors	0.00	16.44	0.00
TG index (severity rate) in the period, for subcontractors/contractors	0.00	0.00	0.00
TF index (frequency rate) of the company in the period for the workforce (own + third parties)	0.00	4.74	0.00
TG index (severity rate) in the period for the workforce (own + third parties)	0.00	0.00	0.00
Deaths – own	0.00	0.00	0.00
Deaths – third parties	0.00	0.00	0.00
Lost day rate for employees ³	0.00	0.00	0.00
Occupational illness rate for employees	0.00	0.00	0.00
Absenteeism rate	NA	NA	NA

² Administrative positions: assistants, analysts, supervisors and specialists (until 2018, they also considered the coordinators, who from 2019 fit into managerial positions).

³ In this case, lost days are considered only absences for accidents and occupational diseases.

Employees/employability/managers (cont.)

	2017	2018	2019
f) Professional development			
Schooling profile – breakdown in percentage of total employees (%)			
Elementary school	0.0%	0.0%	0.0%
High school	43.1%	36.1%	85.0%
Technical instruction	0.0%	0.0%	5.0%
Tertiary education	34.5%	44.4%	10.0%
Postgraduate (specialization, master's, doctorate)	22.4%	19.5%	0.0%
Amount invested in professional development and education (BRL thousand)	149	128	63
Average hours of training per year, per employee, broken down by functional category			
Executive Board	0.0	0.0	0.0
Management	44.0	81.0	12.7
Administrative	55.0	30.9	7.2
Operational	75.1	27.3	0.0
Total training hours per employee/year	72.6	31.4	7.7
g) Behavior in the face of dismissals			
Number of employees at the end of the period	58	72	20
Number of admissions during the period	13	19	4
Turnover rate	55.2%	56.9%	20.0%
Labor complaints			
Amount provisioned in the period (BRL million) ⁴	0.0006	0.0165	0.000
Number of labor lawsuits filed against the company in the period	1	5	0
Number of labor lawsuits found to be justified in the period	1	1	3
Number of labor lawsuits found to be unfounded in the period	0	0	1
Total amount of indemnities and fines paid for the period (BRL thousand)	0	0	954
h) Preparation for retirement			
Investments in supplementary pension (BRL thousand)	154	148	15
Number of beneficiaries of the supplementary pension program	63	71	26

⁴ Historical data restated.

External Social Indicators

Communities

	2017	2018	2019
Health and safety impacts			
Total number of accidents without deaths in the population	0	0	0
Total number of deaths in the population	0	0	0
Lawsuits arising out of accidents with the population – General Litigation Basis	0	0	0
Company involvement with social action			
Resources invested in education (BRL thousand)	250	280	18
Resources invested in health and sanitation (BRL thousand)	0	117	182
Resources invested in culture (BRL thousand)	0	237	400
Resources invested in sports (BRL thousand)	0	82	100
Other resources invested in social actions (BRL thousand)	0	0	0
Employees carrying out volunteer work in the community outside the company/total employees (%)	0%	22%	40%
Quantity of monthly hours donated (released from normal working hours) by the company for voluntary employee work	0	0	4
Involvement of the company in cultural, sports and social projects (Rouanet Law, Sports Incentive Law, Pronon, Pronas, Childhood and Adolescence Fund, Elderly Fund)			
Amount of resources allocated to projects (BRL thousand)	250	716	700
Number of projects benefited	1	5	5
Amount of resources allocated to the largest project (BRL thousand)	250	280	400
Project name	Projeto Guri	Prazer de Ler	My Dream
Proposer	Associação Amigos do Projeto Guri	Instituto Oldenburg	DellArte

Electrical Sector Indicators

Resources applied in technological and scientific research and development by research theme (Manual of Research and Development – Aneel)

	2017		2018		2019	
	Value (BRL thousand)	%	Value (BRL thousand)	%	Value (BRL thousand)	%
FA – Alternative Sources of Electric Power Generation	344	39.9%	91	5.0%	0	0.0%
GT – Thermoelectric Generation	0	0.0%	0	0.0%	0	0.0%
GB – Basin and Reservoir Management	0	0.0%	0	0.0%	0	0.0%
MA – Environment	0	0.0%	823	45.6%	988	52.8%
SE – Safety	0	0.0%	0	0.0%	0	0.0%
EF – Energy Efficiency	0	0.0%	0	0.0%	0	0.0%
PL – Electric Power Systems Planning	104	12.1%	504	27.9%	879	47.0%
OP – Electric Power Systems Operation	0	0.0%	0	0.0%	0	0.0%
SC – Supervision, Control and Protection of Electrical Power Systems	0	0.0%	386	21.4%	0	0.0%
QC – Quality and Reliability of Electric Power Services	0	0.0%	0	0.0%	0	0.0%
MF – Measuring, Billing and Combating Trade Losses	0	0.0%	0	0.0%	0	0.0%
OU – Other	414	48.0%	0	0.0%	5	0.3%
Total	862	100.0%	1.804	100.0%	1.872	100.0%

Environmental Indicators

Environmental Indicators

	2017	2018	2019
Waste generation and treatment			
Emission			
Annual volume of greenhouse gases (CO ₂ , CH ₄ , N ₂ O, HFC, PFC, SF ₆) emitted into the atmosphere (in tons of CO ₂ equivalent)	NA	NA	146.22
Annual emissions of ozone depleting gases (in tons of CFC equivalent)	NA	NA	0.00
Effluent			
Total water discharge by quality and destination (m ³ /year)	868	852	NA
River (m ³ /year)	NA	NA	NA
Wastewater Treatment Plant (m ³ /year)	868	852	NA
Municipal sanitation company (m ³ /year)	NA	NA	NA
Solids			
Annual quantity (in tons) of solid waste generated (garbage, waste, rubble, etc.)	6.7	2.5	NA
Amount of PCB contaminated waste (ascarel) destined (kg)	0.0	0.0	NA
Use of resources in the production process and management processes of the organization			
Total energy consumption by source, in GJ¹	0.58	280.72	313.80
Non renewable fuels ¹	NA	280.14	310.06
Diesel ¹	NA	248.54	297.63
Gasoline ¹	NA	24.50	0.00
Natural gas ¹	NA	NA	0.00
Other – Emergency auxiliary group (diesel replacement) ¹	NA	7.10	12.43
Renewable fuels ¹	NA	NA	3.13
Ethanol ¹	NA	NA	3.13
Electricity (GJ) ¹	0.58	0.58	0.61
Electric power sold (GJ) ¹	2,063,196	2,029,104	2,052,036
Energy consumption per GJ sold (GJ) ¹	0.0000003	0.0001383	0.0001529

¹ Historical data restated.

Environmental Indicators (cont.)

	2017	2018	2019
Total water consumption by source (in m³)			
Supply (public network)	NA	0	NA
Underground source (well)	NA	0	NA
Surface catchment (watercourses)	NA	0	NA
Bottled mineral water (human consumption)	NA	10,400	12,000
Total water consumption (in m³)	NA	10,400	12,000
Water consumption per employee (in m³)	NA	144.4	12.0
Environmental education and awareness			
Environmental education – In the organization			
Number of employees trained in environmental education programs	0	0	0
Percentage of employees trained in environmental education programs/total employees	0%	0%	0%
Number of hours of environmental training/total hours of training	0%	0%	0%
Environmental Education – Community			
Number of elementary and high school units attended	0	2	4
Number of students served	0	470	300
Number of trained teachers	0	0	0
Number of technical and higher education units served	0	0	0
Number of students served	0	0	0
Resources invested (BRL thousand)	0	0	1

Performance Indicators

	2017	2018	2019
Power consumption of generating and auxiliary units (kWh)	4,103,590	1,882,570	1,915,093
Water consumption per KWh generated (maximum flow consumption (m³/s) per KWh delivered)	NA	NA	NA
Restoration of riparian forest (seedling units or planted/recovered area per year) (hectares)	60	185.58	102.00
Rescue of fish in turbines	NA	0	0
Restocking of fish (number of fry)	0	NA	NA
Lubricant and hydraulic oil leakage in turbines (tons/year or m³/year, depending on the type of oil)	0	0	0
Recovery of areas degraded by the extraction of coal and its waste generated (recovered area unit – hectares per year)	NA	NA	NA
Recovery of areas degraded by the extraction of coal and its waste generated (commitment of re-sources in recovery and preservation projects) (BRL/year)	NA	NA	NA
Replacement water consumption during generation (m³/MWh)	NA	NA	NA

Corporate Information

Executive Board

President

Zhao Jianqiang

Vice-Presidents | Carlos Carvalho, Evandro Vasconcelos,
José Renato Domingues and Liu Yujun

Headquarters

Rua Funchal, 418 – 3rd floor

ZIP CODE 04551-060

Vila Olímpia – São Paulo (SP)

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General coordination

Brand, Communication & Sustainability Board

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usina82

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