

2018 integrated report

CORPORATE GOVERNANCE IN CONSTANT EVOLUTION



COPEL



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Product and Services



Generation



Transmission



Distribution



Energy trading



Telecommunications

Number of operations

35 own power plants and **10** participations

6,628 km of transmission lines and **35** substations

198,373 km of distribution lines and **369** substations

7,611

Number of employees

740 MWm

commercialized in 2018 at the Câmara de Comercialização de Energia Elétrica (CCEE) (Electric Energy Trading Chamber)

R\$ 14,93 BI

Net Operating Revenue

34,2 mil km

of optical fiber (**10,488** of backbone and **23,708 km** of access grid)

19,362.4 GWh

Net Power Generation

1,177 km of lines under construction

Power Transmission

5,828.00 MW

Installed Capacity of Generator Park

6.22
Equivalent Frequency of Interruption due to interruption of internal origin to the distribution system (FECi)

10.31
Equivalent Duration of Interruption due to interruption from internal origin to the distribution system (DECi):

Energy Distribution



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Awards / Certifications	Certifier
State Governance Highlight Program	Brasil, Bolsa, Balcão - B3
Best Socio-Environmental Practices	<i>Benchmarking Brasil</i>
Excellence in Copel Distribution Management	Fundação Nacional da Qualidade - FNQ
Excellence in Management of Copel Telecomunicações	Fundação Nacional da Qualidade - FNQ
Good practices related to the Sustainable Development Objectives - Industry category	Serviço Social da Indústria - SESI
Recognition SESI ODS Seal - Recognition of Good Practices for the Sustainable Development - Industry category - Copel Telecommunications	Serviço Social da Indústria - SESI
SESI ODS Award - Contribution towards the Sustainable Development Objectives - Large Industry category - Copel Generation and Transmission	Serviço Social da Indústria - SESI
Abradee Quality Management Award	Associação Brasileira de Distribuidores de Energia Elétrica - Abradee
150 Best Companies to Work For (<i>see page 66</i>)	<i>Revista Você S/A</i>
Best Distributor in Latin America	Comissão de Integração Energética Regional - CIER
Largest Company in Paraná (<i>see page 21</i>)	Amanhã Magazine
Live Volunteer	Federal Government
Most Transparent Public Company of Brazil	Transparência Internacional (T International Transparency (TRAC Brasil) RAC Brasil)
Selo Clima Parana "Ouro"	Governo do Estado do Paraná - Secretaria de Estado de Meio Ambiente
10 years of publication of greenhouse gas emissions inventory	<i>GHG Protocol</i>
Recognition for the implantation of the nursing support rooms	Ministério da Saúde
Citizen Company Certificate - information presented in the Social Report	Conselho Regional de Contabilidade do Rio de Janeiro, Sistema Firjan e Fecomércio
500 largest Southern Prize - Highest net energy sector revenue	Amanhã Magazine



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Awards / Certifications	Certifier
500 largest Southern Prize - Higher net revenue and higher shareholders' equity among the 100 largest companies in Paraná	Amanhã Magazine
Highlight in data center - COPEL Telecommunications	Telecom Yearbook
Best Fleet Management in Latin America	Parar Institute
Professionals of the Year	Globo Organizations
Carbon zero certificate - COPEL Telecommunications	Biofflica
Company of the year, Telecommunications sector – COPEL Telecomunicações	Telecom Yearbook
Abraconee Award for Best Disclosure of Financial Statements for 2017 - 3rd place in the category of large companies in the electric energy sector	Associação Brasileira dos Contadores do Setor de Energia Elétrica (Abraconee)
Abraconee Award for Best Disclosure of Financial Statements for 2017 - 3rd place in the category of large companies in the electric energy sector	Associação Brasileira dos Contadores do Setor de Energia Elétrica (Abraconee)
Best Countrywide Broadband Operator by Customer Evaluation - Satisfaction and Perceived Quality survey of 2018 - COPEL Telecomunicações	Anatel



about the report



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Companhia Paranaense de Energia - COPEL presents its 2018 Integrated Report, prepared according to the framework of the International Integrated Reporting Council (IIRC), in the continuous search for improved communication of its performance. With the enhancement and consolidation of the use of this methodology, COPEL advances in cohesion, conciseness, strategic focus and demonstration of its capacity to generate value for its stakeholders over time.

In this sense, this COPEL (Holding) performance report brings together the financial information required by current legislation, presents the business model of its wholly owned subsidiaries and the Company's performance in capital (human, intellectual, social and natural, infrastructure and financial). This edition of the material, which is published annually, consolidates information regarding the period from January 1 to December 31, 2018.

GRI 102-50, 102-52

COPEL also adopts the following assumptions in the preparation of its Integrated Report:

- » principles of the Global Reporting Initiative (GRI) - GRI Standards: essential option. The report also included the set of indicators of the sectoral energy supplement available in version G4, as well as indicators specifically requested by Aneel in its Manual of Accounting of the Electric Sector. To ensure content reliability

- » informed in the report, independent assurance of material disclosures and reporting principles was performed by Deloitte Touche Tohmatsu Auditores Independentes. **GRI 102-54, 102-56**

- » guidelines of the International Financial Reporting Standards (IFRS), considered in the information from the Financial Statements and the Progress Communication in relation to the commitments made with the Global Compact.

- » Law No. 13,303 (State Law)1, dated 06.30.2016, which establishes in its article 8, item IX, the annual disclosure of an integrated or sustainability report.

- » principles for Responsible Executive Education (PRME), a global platform of the United Nations (UN) for voluntary engagement, which influence the performance of UniCOPEL, corporate education department of COPEL.

The accounting data presented in this report refer to the companies in which COPEL holds equity interest. The non-accounting data include COPEL (Holding) and its wholly-owned subsidiaries COPEL Geração e Transmissão S.A., COPEL Distribuição S.A., COPEL Telecomunicações S.A. and COPEL Comercialização S.A., indicating, when applicable, some inclusion or exclusion.

GRI 102-45

COPEL Integrated Report is organized in two parts. The first presents an overview of

the Company's business, bringing together the main impacts and strategic risks of its operations. The second describes the context and performance of capitals with a detailed approach to relevant business issues and their ability to generate value.

Doubts, suggestions or clarifications about the contents of the 2018 Integrated Report can be sent to the email relato.integrado@COPEL.com.

GRI 102-53

See other COPEL reports:

[Management Report and Financial Statements](#)

[20F Report](#)

[COPEL Geração e Transmissão Socio-Environmental and Economic-Financial Responsibility Report](#)

[COPEL Distribuição Social-Environmental and Economic-Financial Responsibility Report](#)

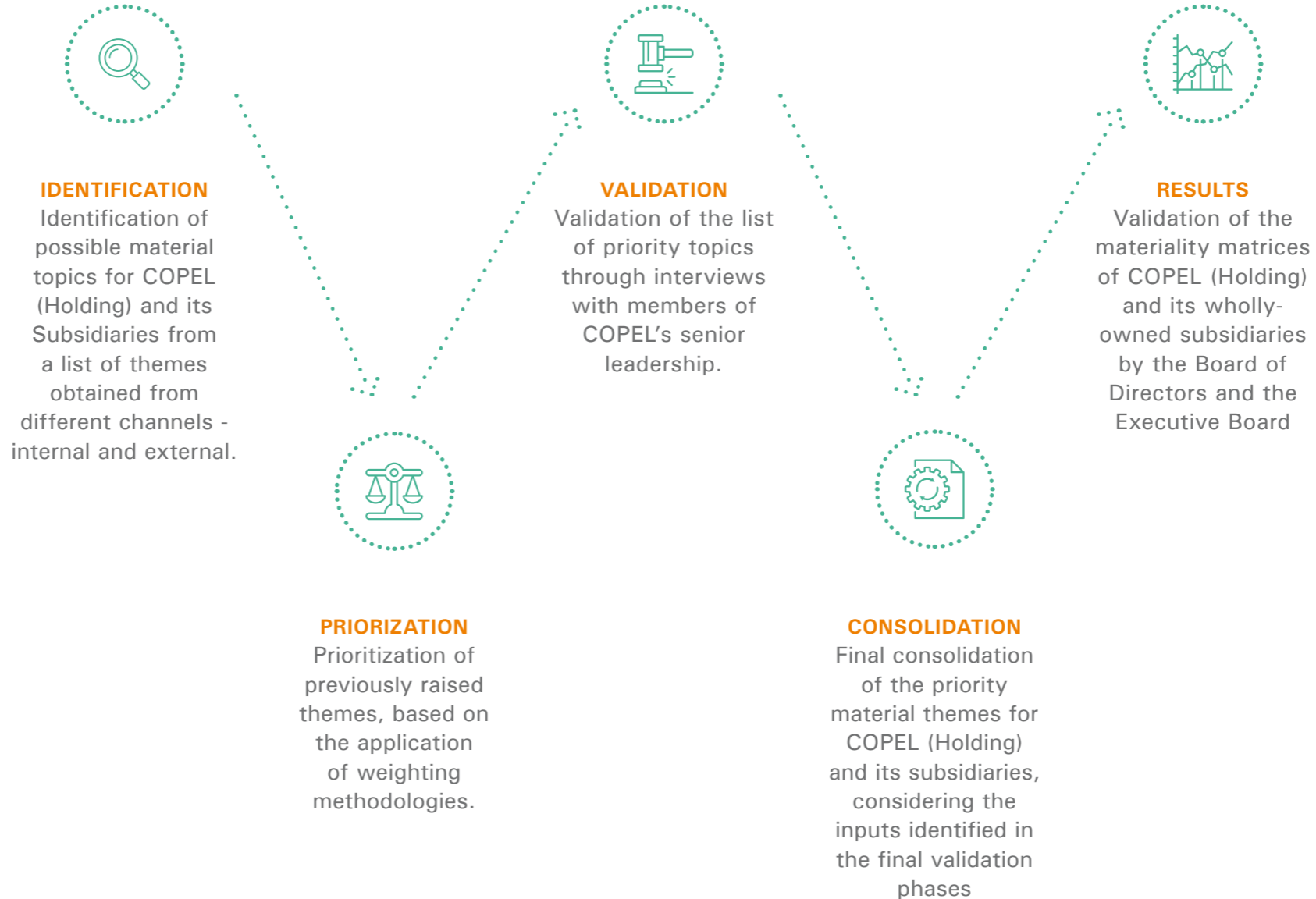
[COPEL's materiality report](#)

¹Law No. 13,303 / 2016 establishes in Art. 91 the term of June 30, 2018 so that public companies and mixed capital companies constituted before the validity of the Law promote the necessary adaptations to their devices.

1. RELEVANT AND STRATEGIC

GRI 102-21, 102-44, 102-46, 102-47

In 2018 COPEL (Holding) revisited the materiality to define the social, environmental, economic and governance topics to be reported. This work was divided in the following steps:





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This process included benchmarking with 15 companies in the industry, including 11 listed in B3's Business Sustainability Index (ISE), and inquiries to sustainability or industry related publications (SASB's "Electric Utilities Sustainability Accounting Standard" - Sustainability Accounting Standards Board, and "Defining What Matters. Do Companies and Investors agree on what is the material?", joint publication of GRI and RobecoSAM). The demands of the company's main stakeholders - shareholders, investors, customers, community / society, internal public, suppliers and public authorities - were also raised - registered in dialogue channels and in internal communications. **GRI 102-40 GRI 102-42**

A total of ten dialogue channels were analyzed, five of which were related to the demands of stakeholders from COPEL (Holding) - Organizational Climate Survey; Internal Commissions for Accident Prevention; 150 Best Companies to Work For; Ethics Guidance Board; and Reporting Channel - and the other five referring to the stakeholders of its Subsidiaries - Ombudsman; 2017 Aneel Consumer Satisfaction Index; Abradee Survey of Consumer Satisfaction Urban Residential Electric Power; and Mapping of Stakeholders of Integral Subsidiaries. **GRI 102-43**

The prioritization of the themes included the preparation of a matrix with the correlation of the results obtained for COPEL (Holding) and its wholly owned subsidiaries, and relevant topics for the sector (presented in the previous steps). Also included as a criterion was the result of materiality published in the 2017 Annual Sustainability Report. The material themes reported in the Integrated Report were first presented at the meeting of the Board of Executive Officers held on October 24, 2018 and forwarded for deliberation and approval by the Board of Directors at meeting held on November 7 of that same year.



Wind farms in RN

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Matrix of material themes and limits of impacts GRI 102-46, 102-47									
2018 Material themes	Correlation with 2017 material themes ¹	Material topics according to GRI	Internal limits of 2018 material themes		External limits of 2018 material themes				
			Employees	COPEL (operations)	Government	Regulatory bodies	Suppliers	Customers	Communities
Corporate governance	Governance, ethics, compliance	Corporate Governance (102-18, 102-39)	█	█	█	█	█	█	█
		Anti-corruption (205)	█	█	█	█	█	█	█
		Anti-competitive behavior (206)	█	█	█	█	█	█	█
		Diversity and equal opportunity (diversity of governing bodies) (405)	█	█	█	█	█	█	█
		Public policies (contributions to politicians or parties) (415)	█	█	█	█	█	█	█
Health and safety at Work	Health and safety at Work	Health and safety at work (403 and sectoral indicators)	█	█	█	█	█	█	█
Economic and financial performance	Economic and financial performance	Economic and financial Performance (200-1, 201-3)	█	█	█	█	█	█	█
Risk management and operational efficiency	Operational excellence and eco-efficiency	Risk management (102-11, 102-15)	█	█	█	█	█	█	█
		System efficiency (sector indicators)	█	█	█	█	█	█	█
Human capital management	Human capital management	Human capital (102-8, 102-41)	█	█	█	█	█	█	█
		Employment (hiring, turn-over, maternity leave) (401)	█	█	█	█	█	█	█
		Training and education (404 - EU14 - EU15)	█	█	█	█	█	█	█
		Non-discrimination (406)	█	█	█	█	█	█	█
Supply chain	-	Supply Chain (102-9)	█	█	█	█	█	█	█
		Evaluation of suppliers (308 - 414)	█	█	█	█	█	█	█
		Procurement Practices (204)	█	█	█	█	█	█	█
Engagement with stakeholders	Relationship with customers and consumers	Engagement of stakeholders (102-40, 102-44)	█	█	█	█	█	█	█

█ Direct Impacts █ Indirect Impacts █ No impact

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2018 Material themes	Correlation with 2017 material themes ¹	Material topics according to GRI	Internal limits of 2018 material themes		External limits of 2018 material themes				
			Employees	COPEL (operations)	Government	Regulatory bodies	Suppliers	Customers	Communities
Climate changes	Climate changes	Financial implications of climate change (201)	—	—	—	—	—	—	—
		Emissions (305 - EU5)	—	—	—	—	—	—	—
Research, development and technological advances	Culture of innovation	P&D and technological advances (EU8)	—	—	—	—	—	—	—
Regulatory environment	-	Regulatory environment (102, 201-4)	—	—	—	—	—	—	—
		<i>Environmental Compliance (307)</i>	—	—	—	—	—	—	—
		<i>Social and economic compliance (419)</i>	—	—	—	—	—	—	—
Social responsibility	Relationship with communities	Indirect economic impacts (203)	—	—	—	—	—	—	—
		Local communities (413)	—	—	—	—	—	—	—
		Expropriations (EU20 - EU22)	—	—	—	—	—	—	—
		Access to information and customer health and safety (EU24 - EU25)	—	—	—	—	—	—	—
		Access to energy (EU27 - EU30)	—	—	—	—	—	—	—
Human rights	Human rights	Freedom of association and collective bargaining (407)	—	—	—	—	—	—	—
		Child labor (408)	—	—	—	—	—	—	—
		Forced or analogous to slave labor (409)	—	—	—	—	—	—	—
		Rights of Indigenous Peoples (411)	—	—	—	—	—	—	—
		Assessment of human rights practices (412)	—	—	—	—	—	—	—

— Direct Impacts — Indirect Impacts — No impact

Matrix of material themes and limits of impacts GRI 102-46, 102-47

2018 Material themes	Correlation with 2017 material themes ¹	Material topics according to GRI	Internal limits of 2018 material themes		External limits of 2018 material themes				
			Employees	COPEL (operations)	Government	Regulatory bodies	Suppliers	Customers	Communities
Energy planning and demand increase	-	Availability and reliability of the system (sector indicators)	█	█	█	█	█	█	█
Diversity	Diversity	Diversity and equal opportunities (405)	█	█	█	█	█	█	█
Finite Natural Resource Management	Impacts on ecosystems ²	Materials (301)	█	█	█	█	█	█	█
		Energy (302)	█	█	█	█	█	█	█
		Water (303)	█	█	█	█	█	█	█
		Biodiversity (304 – sectoral indicators)	█	█	█	█	█	█	█
		Effluents and waste (306)	█	█	█	█	█	█	█

█ Direct impacts █ Indirect impacts █ No impact

Remarks [GRI 102-49](#)

1. The theme “Relationship with customers and consumers” - which was included in the materiality of 2017 - was not mentioned in 2018, because during the materiality review process it was concluded that it composes the topic “Engagement with Stakeholders” and that the theme “Regulatory Environment” complements it by dealing with the regulation of services, service and quality indices, carried out by regulatory agencies, ensuring a good relationship with this public.

2. The theme “Operational excellence and eco-efficiency” has been dismembered, with operational excellence included in “Risk management and operational efficiency” and eco-efficiency is directly linked to the subject “Management of finite natural resources”.

3. Another issue not addressed in 2018 was “Impacts on ecosystems”, which is part of the “Finite Natural Resources Management” theme, which, in turn, encompasses more GRI topics and provides a more complete picture of COPEL’s environmental performance.



message from the administration



Message from the Administration

GRI 102-14

In 2018 COPEL consolidated, from an increasingly solid governance structure, the historic commitment to sustainability in all its activities.

From an economic perspective, COPEL presented consistent results, expanding its assets with priority focus on renewable sources of generation and strategic transmission lines for the National Interconnected System. Even in a year of political transition and with the macroeconomic framework still recovering, COPEL recorded Ebitda of R\$3,143.3 million, 9.4% higher than the previous year and net income of R\$1,444.0 million, one growth of 29.1%.

The figures reflect a broad program of cost reduction, improved efficiency and strict discipline in capital allocation. The year marked the end of a long cycle of investments in its generation and transmission facilities in the ten states where it operates, particularly the completion of Colíder hydroelectric plants (300 MW), Baixo Iguaçu (350 MW), in which COPEL has a 30% stake, and the Cutia wind farm (312.9 MW), which together amount to R\$6.8 billion of investments, all with production started in 2019.

In addition to providing a structural benefit to the SIN, COPEL starts this year to reap the fruits of these investments, with an incremental revenue around of R \$ 450 million.



Copel's electrical station in Curitiba, Author: Daniela Catisti

At the end of the investments, will be R \$ 2 billion, with the start of works of PCH Bela Vista, auctioned in the last year, and transmission lines concentrated in the State of Paraná.

COPEL Distribuição currently presents its main indices of supply quality - DEC and FEC - below regulatory limits, which contributed to the company being recognized as the best distributor in Brazil, according to its customers, by Aneel. In the last two years, the subsidiary has managed to improve Ebitda efficiency by 73% in relation to the estimated regulatory Ebitda, focusing on the full achievement of the target already in 2019, when the subsidiary plans to invest R\$835 million.

Considering the radical transformation of the distribution segment today, investment in innovation is vital, aimed at building the infrastructure of future smart cities.

COPEL inaugurated Smart COPEL, Brazil's most modern distribution center in the Novo Mundo neighborhood in Curitiba. The unit will gradually centralize the management of the system - by assuming the function previously performed from the five regions of the State - and allows to control the electrical system remotely, isolate problems quickly and control the quality of the supply in real time, among other possibilities.



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The grid modernization program in the field will continue, incorporating innovations that are the fruit of more than a decade of testing in the operation of smart grids. These include automation and remote control of the grid, installation of smart meters and pioneering research and development projects in Brazil.

Ipiranga, in the interior of Paraná, became in 2018 the first city in the country to be entirely covered by reclosers and intelligent meters integrated to the same communication system. The second project to use this concept will fully cover the municipalities of São José dos Pinhais and Tijucas do Sul, serving 126 thousand consumers.

COPEL's range of innovations also includes the largest research on energy storage in Brazil, and micro-generation tests from agribusiness biomass, which holds enormous potential for exploration in the State of Paraná. Another important investment in the area of innovation lies in the electric mobility, with the inauguration in 2018 of the largest electrified monorail in the country. Throughout more than 700 km, it has electric service station that connect Paraná from east to west, from the Port of Paranaguá to Foz do Iguaçu.

The basis for all these investments and results is found in our corporate governance, certified in December 2018 as Highlight in Governance on B3, which makes the company the only state-controlled with such recognition.

In pursuit of becoming a benchmark in sustainability, we remain committed to the principles and objectives of the Global Compact, and in the last year we have consolidated a leading role in the articulation of actors from the Southern Region of Brazil in pursuit of the ODS goals, leading the regional front of the Global Compact Cities Program and hosting, in Curitiba, 2030 Local Hub, directly linked to the UN.

It is essential to recognize that the results achieved are a reflection of the Company's greatest assets, a group of more than 7,600 employees who make every effort to maintain a service of excellence, and in 2018 put us among the 150 best companies to work for, *Revista Você S/A*.

It is with great courage and confidence that we face the challenges unveiled in 2019. We are starting a new cycle for the company, with plenty of energy to collaborate as an indispensable inductor to economic growth and thus serve our customers, partners and society in general.

Daniel Pimentel Slaviero
President of COPEL



sector context



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1.1 ECONOMIC CONTEXT

According to the Instituto Brasileiro de Geografia e Estatística (IBGE) (Brazilian Institute of Geography and Statistics-IBGE), Brazil's Gross Domestic Product – PIB (GDP) for 2018 grew by 1.1% compared to 2017. PIB (GDP) growth resulted from the 1.1% increase in Added Value at basic prices and the 1.4 % in the volume of Taxes on Products net of Subsidies. The result of Added Value in this type of comparison reflected the performance of the three activities that comprise it: Agriculture (0.1%), Industry (0.6%) and Services (1.3%).

IBGE also pointed out that the accumulated National Consumer Price Index (IPCA) of 2018 reached 3.75%, while the Selic rate, interest rate

of the economy, showed little variation, from 6.90% in January 2018 to 6.40% in December.

Federal public debt increased 8.90% in the year, jumping from R\$3.56 trillion to R\$3.88 trillion. With the approval of Constitutional Amendment No. 95, which limits the inflation of annual public expenditure growth with primary expenditures for the next 20 years, in force since 2017, a trajectory of reduction of public debt is projected in the coming decades.

The unemployment rate remained high in the period, reaching 12.3%. The unemployed population was 12.84 million people, an average lower than that of the previous year.



Wind Farm in RN

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DEMAND INCREASE****REGULATORY ENVIRONMENT****SUSTAINABILITY****CAPITAL PERFORMANCE****GRI CONTENT INDEX****APPENDIX****1.1.1. Economic context of Paraná**

At the regional level, Paraná had already anticipated the recovery movements of the crisis since the second half of 2016, reaping the excellent results of the performance in the field, when a record harvest of 41.5 million tons was observed in 2017. The estimate by 2018, fell short of the previous year, but with production levels higher than those observed in 2016, so that the positive effects benefited by agricultural income were reflected in the industrial segments directly linked to agriculture and other sectors such as commerce and services. In addition, the state productive sector has been gradually recovering its production levels since the second half of 2017, with emphasis on the automobile and pulp and paper industry, supported in part by the international market. The expansion of the indices of commerce and the service sector in Paraná also presented significant growth, associated to the several sectors of the expanded retail trade. In view of this scenario, the economy of Paraná registered growth of 1.5% in 2018, according to data from the Instituto Paranaense de Desenvolvimento Econômico e Social – IparDES (Paranaense Institute for Economic and Social Development - IparDES).

1.2. SECTOR CONTEXT

The behavior of the Brazilian electricity sector tends to keep pace with the growth prospects of the economy. This sector is undergoing a recast regulatory framework. In addition to

the new technologies, which are providing the creation of new businesses, the current model presents structural problems that have resulted in higher system costs, which end up burdening the weakest link, which is the consumer. Learn more about these changes on p. 55.

The simplified overview presented below is based on the diagnosis that accompanies Public Consultation 33/2017, of the Ministério das Minas e Energia – MME (Ministry of Mines and Energy - MME), and other sector analyzes, and includes the generation, transmission and distribution segments, the main characteristics of the current model and brief assessment of the business environment.

1.2.1. Generation Sector

The generation market is one of the segments of the electricity sector in which there is free competition. With the publication of Law 12,783 / 2013, this scenario changed, as the power plants that had their renewed contract started to be regulated, with their Annual Generation Revenue (RAG) defined through regulatory analysis and the energy produced being passed on to the captive market in the quota regime.

In this context, the main factor that has an impact on the generation market is the low growth of the sector as a whole. The direct relationship between the stagnation of PIB (GDP) and demand, which has been occurring since 2014, results in a significant reduction in

the contracting of energy from new projects and the intensification of the dispute in the new energy auctions.

In the free market, the difficulty of expanding generation also prevails, since the short duration of contracts makes it difficult to obtain financing. In addition, there is concern about the ability to meet high demand in case of economic recovery due to the large expansion of intermittent sources and hydroelectric plants without reservoirs, which have little capacity to regularize and are therefore not dispatchable.

There is also the issue of subsidies, which are currently diverse for sources of energy generation, such as wire fare discount, for the purchase of coal, among others. These subsidies cause distortions in the prices of the sources and generate larger portions of charges, without considering the effects that the sources can give to the system.

Lastly, we have the hydrological judicialization, in which the agents who own power plants in the Energy Reallocation Mechanism (MRE) requested injunctions in court to avoid payment of amounts related to hydrological risk, considering that changes caused by regulation were interfering with the MRE. The elements that would have caused these distortions are the generation outside the order of merit, the anticipation of the physical guarantee of structuring projects and the restriction of the outflow of structuring projects due to the delay of transmission.

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1.2.2. Transmission industry

Driven by the low demand for new projects in the generation sector, transmission is the segment that attracted the attention of investors in recent years. This sector is a natural monopoly and is therefore highly regulated. The regulatory framework of transmission is well-established, with relative stability.

The new contracts, resulting from the auctions held since 2000, have concession periods of 30 years. The old contracts, however, refer to concessions renewed for 20 years by MME Ordinance No. 185/2001, later renewed for 30 years by Law 12,783/13. The payment of the indemnification of these last concessions, valid for assets not yet amortized, is pending, after questioning by the Associação dos Grandes Consumidores de Energia Elétrica – Abrace (Association of Large Electric Energy Consumers - Abrace) on part of the amounts.

The adoption of the lower fare model from 2016 onwards has made the tenders of new projects more attractive. Since then, the success rate has been practically 100%, with high bid competitiveness and the participation of new agents.

The current regulation of the transmission market, on the other hand, is unattractive for new technologies, which are usually more expensive than conventional ones. These technologies are adopted only when defined as requirements in the notices for new ventures.

1.2.3. Distribution sector

The distribution sector is also a natural monopoly, and also a highly regulated market. In this sector, since the companies operate in a concession area of their own and have autonomy in the planning and strategy of Operation and Maintenance (O&M), the regulator acts in the search for the operational efficiency of the companies and by lower tariffs for the consumers.

The regulatory framework of distribution has not changed much since its modeling in the RE-SEB reform (a project conducted by the Federal Government to adapt the Brazilian Electricity Sector to the new market conditions and the consequent need for investments in the sector).

The tariffs charged by distributors are composed of two installments, A and B, relating to non-manageable costs (energy, charges, transmission, etc.) and manageable costs (network investment, O&M, personnel, etc.) respectively. These tariffs are readjusted annually and reviewed every five years. In the annual adjustment, these are corrected by official inflation indices, by individual efficiency indices defined for the distributors and by the correction of the portion of the non-manageable costs. In the review, all the manageable components of the tariff are analyzed, and the level of operating costs and the remuneration of the investments are redefined.

The distributors are obliged to contract 100% of your demand. In the event of a deficit, in addition to being penalized by the regulator, these companies are exposed to the short-term energy price. In this model, the costs of the distributor represent a small portion of the total value of the tariff charged by consumers. There is also the need to manage the risks of energy cost oscillations and dispatch out of order of merit. Large fluctuations in the values of charges and cost of energy generate deficits in the cash of the distributors that are only recovered in the revisions or tariff readjustments. Since this model is based on the volume of energy, distributors are penalized if consumption is reduced. This phenomenon, which occurred in specific economic crisis situations, also happened due to new technologies and environmental concerns, with the dissemination of energy efficiency and distributed generation.

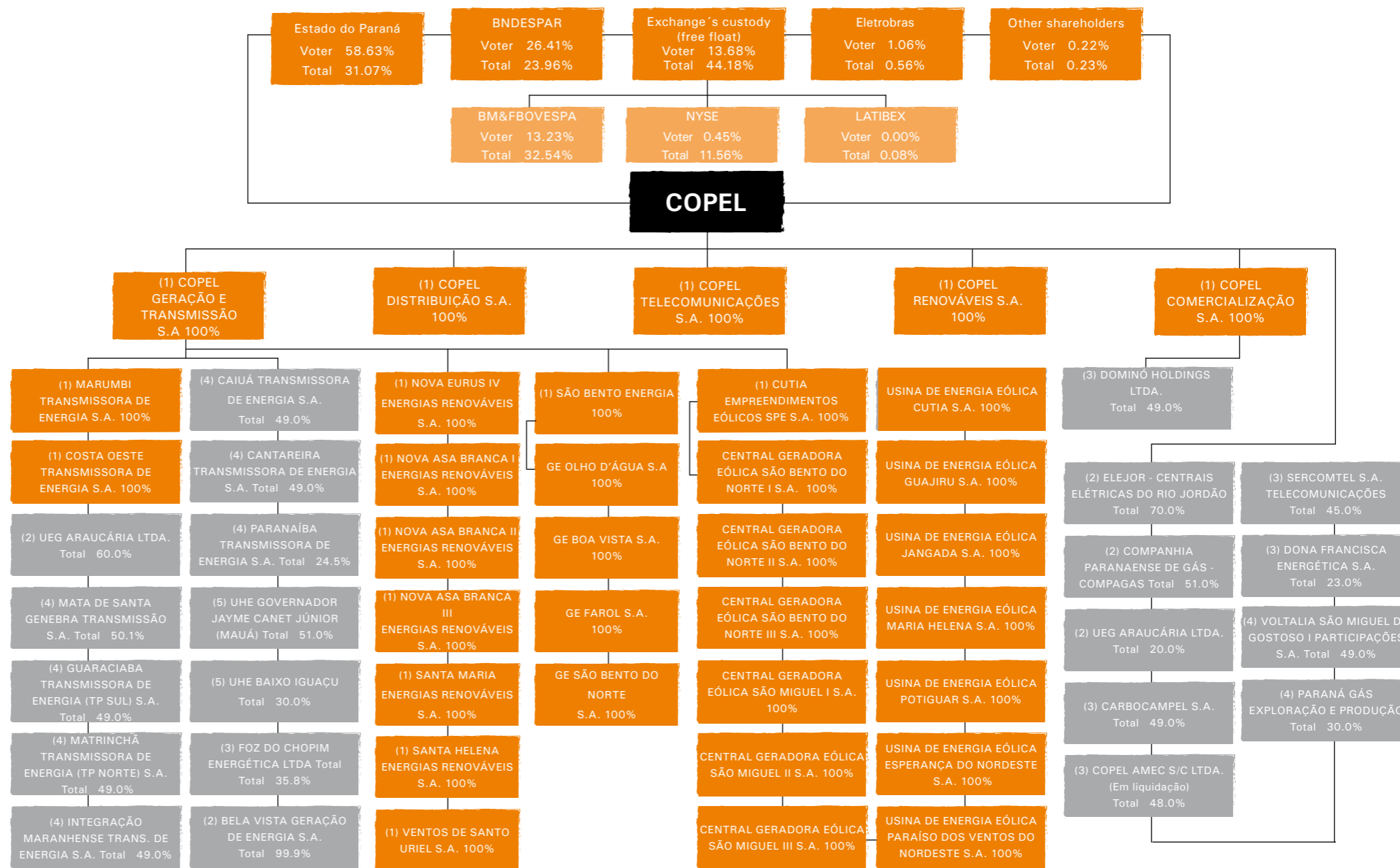


about Copel and business models





Organization Chart - Equity Interest



(1) Wholly-owned subsidiary (2) Controlled companies (3) Related undertakings (4) Jointly-owned subsidiaries (5) Consortia

Note: The controlled UEG Araucária Ltda. holds a 19.31% stake in GBX Tietê II Empreendimentos Participações S.A.

2. COMPANHIA PARANAENSE DE ENERGIA GRI 102-2, 102-5, 102-6, 102-7

COPEL was created on October 26, 1954, in the form of a mixed-capital company, controlled by the State of Paraná. Currently, COPEL's shares are traded on B3 and on the New York and Madrid Stock Exchanges. GRI 102-5

Largest Paraná company in equity and net income², COPEL is headquartered in Curitiba (PR) and operates in ten Brazilian states (see map). Its business is generation, transmission, distribution and commercialization of energy, in addition to telecommunications and natural gas. The Company's electrical system is composed of a generator set of power plants, transmission lines, substations, lines and electricity grids of the distribution system and a modern optical telecommunications system that integrates all the cities of Paraná.

GRI 102-2, 102-3, 102-4

In the energy segment, the main customers are consumers in the regulated market (residences, industry and commerce) and consumers in the free market (industry and commerce), conducted and supervised by Aneel. COPEL Telecomunicações mainly operates with corporate solutions in the 399 municipalities of Paraná, also serving retail customers in 82 municipalities of the State (see *COPEL Telecomunicações performance map on page 22*). GRI 102-6

COPEL'S ACTIVITY MAP GRI 102-4, 102-6



²According to a survey conducted by Revista Amanhã, which selects the largest and best companies according to public information extracted from its financial statements.

Information can be checked on the links: <http://www.aen.pr.gov.br/modules/noticias/article.php?storyid=99579> e <https://www.bemparana.com.br/noticia/copel-e-premiada-como-a-maior-empresa-do-parana>

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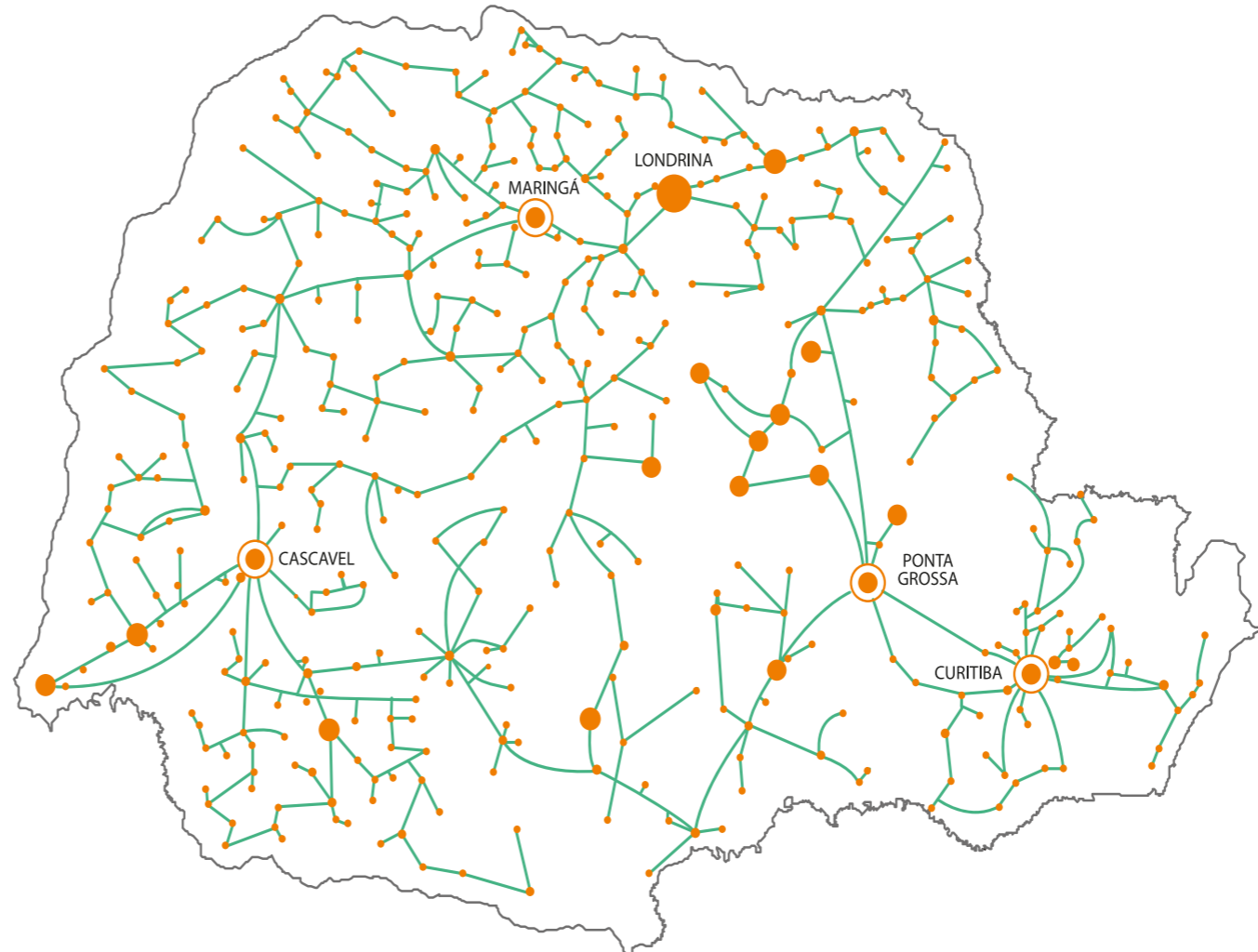
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3. BUSINESS MODELS GRI 102-2

3.1. COPEL DISTRIBUIÇÃO | OVERVIEW





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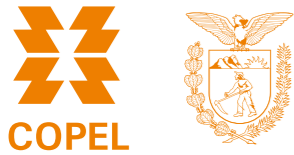
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4. STRATEGIC REFERENTIAL

GRI 102-16, PRME 1, 2

COPEL's actions and management decisions are oriented by the guidelines set forth in its Mission, Vision and Values, as follows.

Mission: To provide energy and solutions for development with sustainability.

Vision: To be a reference in the business in which it operates generating value in a sustainable way.

Values:

- » Ethics: Result of a collective agreement that defines individual behaviors aligned to a common goal.
- » Respect for people: Consideration with others.
- » Dedication: Ability to engage intensely and completely in the work contributing to the achievement of the organization's objectives.
- » Transparency: Accountability of the decisions and achievements of the Company to inform its positive or negative aspects to all interested parties.
- » Safety and Health: Healthy working environment in which workers and managers collaborate to use a process of continuous improvement in the protection and promotion of the safety, health and well-being of all.
- » Responsibility: Conduct the life of the Company in a sustainable way, respecting the rights of all interested parties, including future generations and the commitment to sustain all life.
- » Innovation: Application of ideas in processes, products or services in order to improve something existing or build something different and better.



Governador Ney Braga Power Plant, Author: Carlos Borba

Corporate governance



GRI 103-1, 103-2, 103-3

COPEL's Corporate Governance model is based on the principles of transparency, equity, accountability and corporate responsibility, following best market practices and seeking the best results for stakeholders. These principles are set forth in a [Corporate Governance Policy](#) with guidelines, objectives and commitments applicable to COPEL (Holding) and its wholly-owned subsidiaries and, where applicable, to other equity interests.

The corporate governance practices adopted by the Company comply with the requirements established for companies listed in Level 1 of Governance of B3 - Brasil, Bolsa, Balcão (formerly BM&FBOVESPA), and have as reference the Code of Best Governance Practices of the Brazilian Institute of Corporate Governance (IBGC), taking into account the provisions of Federal Laws 6,404 / 1976 and 13,303 / 2016, CVM Instruction 586/2017 and other applicable laws.

GRI 103-1

So that the Company be permanently driven by ethical principles, all those acting on its behalf are governed by a Code of Conduct developed in accordance with COPEL's values, the Global Compact Principles, best corporate governance practices and other voluntary commitments.

GRI 103-2

5. CORPORATE GOVERNANCE PRACTICES

PRME 1, 2

During 2018 COPEL promoted improvements in its Corporate Governance System, aiming to establish best practices aligned with its strategic benchmark and to generate shared value to stakeholders, based on full compliance with legal requirements, to the regulations of the Securities and Exchange Commission (CVM), the B3 Issuer Regulations and the practices established by the United States legislation for companies listed on the New York Stock Exchange. This guidance is linked to the Board of Directors' guidelines and strategic objectives "Maximize the value of the Company in a sustainable manner" and "Improve performance in governance and sustainability".

Among the advances related to corporate governance, the following stand out:

- » the revision of the bylaws of COPEL (Holding) and its wholly-owned subsidiaries, as well as the internal regulations of the Company's statutory bodies, which incorporated improvements in its governance structure, in addition to those envisaged in Federal Law 13,303/2016 (State);
- » the publication of the Internal Tender and Contracts Regulation;
- » the unified publication of the Annual Chart of Public Policies and Corporate Governance;

- » the publication of the Report on the Brazilian Code of Corporate Governance;
- » the contracting of the tool to carry out a procedure of integrity check (background check), aiming to assist the process of appointment and election of members of statutory bodies;
- » the outsourcing of the Reporting Channel;
- » the review of the Integrity Program;
- » the optimization of the Company's Internal Control System;
- » the review of Policies: Corporate Governance; of Sustainability; of Climate Change; of Related Party Transactions and Conflicts of Interest; of Communication; of Dividends; Integrated Management of Corporate Risks; Investor Relations; of Information Security; of Information Technology; and the Reporting Channel;
- » Creation of Policies: Managing the Effects of Climate Change; of Integrity; of Independent Audit Services; of Indication; of Shareholdings; of Sponsorship;
- » The implementation of actions to obtain the certification of the Highlight Program on State Governance of B3.

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Besides these advances, another one that deserves attention is the management of fraud risks and corruption in operations, conflicts of interest, damage to reputation and anticompetitive practices.

COPEL's approach to avoiding these risks is described on pages 37-41.

Certification in the Highlight Program on State Governance of B3

By understanding the relevance of the governance criteria of the Highlight Program on State Governance of B3⁷, COPEL has been improving its governance system, which has contributed to obtaining certification. The work was primarily aimed at adherence to the State Law, and in 2018, the Company defined as strategic goal to obtain this certification.

Adjustments were made to statutes and regiments, review and creation of corporate policies and internal regulations, improvement of the information disclosed in the Reference Form and the process of evaluating the performance of members of statutory bodies, among others. All adjustments made in the Governance System considered the measures of the Program, the requirements of the State Law and compliance with the practices recommended by CVM Instruction 586/2017.

In December 2018 COPEL became the first state-owned company to receive certification in the Program, obtaining the best score among those certified. The Company was also the only one to present the Code of Ethics of the High State Public Administration with the requirements of the Program.

⁷State Governance Highlight Program is a "Program" of B3 - Brazil, Exchange, Counter Market which is aimed at state-owned companies that are open or in the process of opening the capital, with the objective of encouraging companies controlled directly or indirectly by federal entities (Union, States, Federal District and Municipalities) to improve their corporate governance practices. The aim of the initiative is to contribute to the restoration of the relationship of trust between investors and state companies, presenting objective and concrete measures to help reduce uncertainties related to the conduct of business, the disclosure of information, especially regarding the achievement of the public interest and its limits, as well as the political component inherent in these companies.

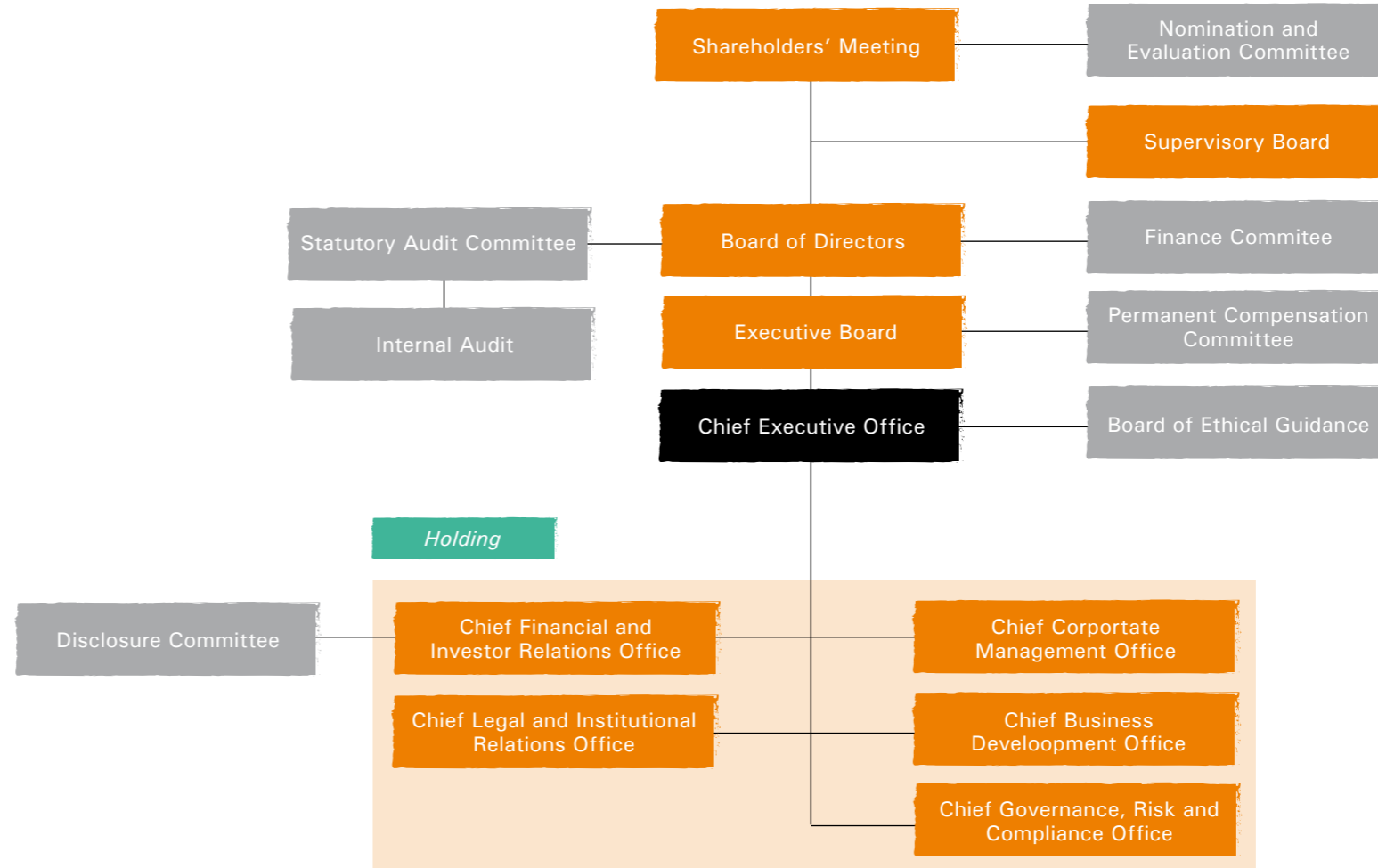


Certification Trophy of the B3 Highlight Program on State Governance
Author: Daniela Catisti

6. CORPORATE GOVERNANCE STRUCTURE

GRI 102-18, 102-22

In accordance with the Bylaws, COPEL (Holding) is organized in a structure composed of six statutory bodies, with different levels of responsibilities and attributions, assisted by non-statutory bodies⁸.



Statutory bodies

6.1. SHAREHOLDERS' MEETING

It is the maximum body of the Company with powers to deliberate on all businesses related to its corporate purpose. It is governed by applicable law.

6.2. NOMINATION AND EVALUATION COMMITTEE*

Committee with competence to assist the shareholder in verifying the compliance of the process of nomination and evaluation of the Directors, tax advisors and members of statutory committees of COPEL (Holding), its wholly-owned subsidiaries, and may be extended to its direct and indirect equity interests, pursuant to applicable legislation.

6.3. SUPERVISORY BOARD

Independent body of the Board of Directors, which has the purpose of supervising the actions performed by directors and board members and expressing an opinion on the Company's accounts.

6.4. BOARD OF DIRECTORS

Strategic and collegiate decision-making body, responsible for defining the Company's superior orientation, ensuring the protection of its assets the achievement of its social objective, as well as being responsible for guiding the board to maximize return on investment, adding value to the business.

6.5. EXECUTIVE BOARD

Executive management and representation body of COPEL (Holding), with responsibility for ensuring the regular operation of the Company, in line with the general strategy outlined by the Board of Directors. It is composed of a Chief Executive Officer, a Chief Corporate Management Officer, a Chief Financial and Investor Relations Officer, a Chief Legal and Institutional Relations Officer, a Chief Business Development Officer, a Chief Governance, Risk and Compliance Officer. The company also has a Chief Assistant Officer.

COPEL's (Holding) Chief Financial and Investor Relations Officer is responsible for exercising the unpaid function of Chief Financial Officer of the wholly-owned subsidiaries, unless specific legislation determines an exclusive Chief Officer.

It is incumbent upon the Company's Chief Legal and Institutional Relations Officer to perform the unpaid function of Chief Legal and Institutional Relations Officer of COPEL GeT, COPEL DIS, COPEL Energia and COPEL REN.

6.6. STATUTORY AUDIT COMMITTEE*

Advisory body to the Board of Directors, composed mostly of independent directors, selected among the members of the Board of Directors and in accordance with the applicable legislation. This body is intended to protect the interests of shareholders and other stakeholders by monitoring the quality of

financial statements and internal controls, and the organization's compliance, integrity and risk management.

6.7. NON-STATUTORY BODIES

6.7.1. Board of Ethical Guidance*

Body linked to the Presidency, whose purpose is to ensure that COPEL's ethical and moral position remains high in society.

6.7.2. Disclosure Committee*

Body linked to the Finance and Investor Relations Department whose purpose is to manage the Company's Policy for Disclosure of Information and Preservation of Confidentiality and is responsible for approving the information to be disclosed to the market and for monitoring and providing privileged information to the area responsible for communicating with regulators and other agents of the capital market.

6.7.3. Finance Committee (ad hoc)

Committee to advise the Board of Directors of COPEL (Holding), with a view to maximizing the return of related to economic and financial matters of the Company, its wholly-owned controlled and affiliates subsidiaries.

6.7.4. Permanent Compensation Committee

Body linked to the Corporate Management Department responsible for preparing and proposing a policy for determining the

*The bodies marked with an asterisk are shared with the wholly-owned subsidiaries of COPEL (Holding).

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compensation of the managers and fiscal councilors of COPEL's wholly-owned subsidiaries, controlled and affiliated companies.

6.7.5. Internal Audit

An independent, non-statutory body responsible for assessing the effectiveness of the risk management process and the adequacy of treatment actions and internal control mechanisms, as well as providing advice to the Fiscal Council, Board of Directors, Statutory Audit Committee, Executive Board and other business areas.

Interest conflicts GRI 102-25

In the Company's Bylaws, the Company, its shareholders, directors and members of the Fiscal Council undertake to resolve, through arbitration, all matters involving conflicts of interest.

The internal regulations of the statutory bodies detail the procedures for resolving conflicts of interest, observing IBGC's best corporate governance practices.



Author: Daniela Catisti

Composition of members of statutory bodies according to diversity criteria GRI 102-22, 102-23, 405-1

Statutory bodies	Board of Directors		Administrative Council ¹		Fiscal Council		Statutory Audit Committee		Total	
Term	2 years, maximum of 3 consecutive renewals		2 years, maximum of 3 consecutive renewals		2 years, maximum of 2 consecutive renewals		2 years, maximum of 3 consecutive renewals			
Total members	7		9		5 members and 5 substitutes		5		25 ²	
Gender	Members	% in relation to total members	Members	% in relation to total members	Members	% in relation to total members	Members	% in relation to total members	Members	% in relation to total members
Men	6	85.71%	6	66.67%	9	90.00%	3	60.00%	20 ²	80.00%
Women	1	14.28%	3	33.33%	1	10.00%	2	40.00%	5 ²	20.00%
Age Group										
Under 30 years	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Between 30 and 50 years	3	42.85%	2	22.22%	5	50.00%	2	40.00%	10	40.00%
Over 50 years	4	57.14%	7	77.78%	5	50.00%	3	60.00%	15 ²	60.00%

Remarks:

1. The composition of the Board of Directors considered the shareholders' agreement between the Government of the State of Paraná and BNDES Participações S.A. - BNDESPAR, which expired on December 22, 2018.

2. Disregarding the members of the Audit Committee and the Chairman of COPEL (Holding), as they are all members of the Board of Directors.

Percentage of representatives of statutory bodies (by gender) | GRI 405-1

	2016	2017	2018
Men	95%	84%	80%
Women	5%	16%	20%

Percentage of representatives of statutory bodies (by age group) | GRI 405-1

	2016	2017	2018
Under 30 years	0%	0%	0.00%
Between 30 and 50 years	20%	28%	36.00%
Over 50 years	80%	72%	64.00%

7. INDICATION AND EVALUATION OF PERFORMANCE OF THE MEMBERS OF THE STATUTORY BODIES

7.1. INDICATION AND APPOINTMENT PROCESS GRI 102-24

The process of indicating the members of the statutory bodies complies with the provisions set forth in COPEL's Bylaws, applicable legislation - Federal Laws 6,404 / 1976 and 13,303 / 2016 - and in the normative deliberations of the Control Council of State Companies / PR (CCEE). This process is guided by the Nomination Policy and regulated by an internal administrative rule.

Candidates' independence requirements are verified in accordance with legal requirements, CVM regulations, and practices established by US law for listed companies on the New York Stock Exchange.

Based on the indications of the controlling shareholder (Paraná State Government), the verification of the minimum requirements and absence of obstacles to names by the CCEE is carried out, complemented by the background check procedure carried out by the COPEL Board of Governance, Risk and Compliance. After attesting the compliance of the nominations, the names of nominees are disclosed on the Investor Relations website, according to CVM regulations.

Through this disclosure, the other shareholders are called to present their candidates. There is also a vacancy for an employee representative, which is filled by means of an application process and open election to all employees.

The Nomination Policy establishes the basic principles to be considered in the nomination process, which recognize the importance of the diversity of training, qualifications and experiences, including in relation to gender, religion, age and race. In addition, the Policy defines the guidelines to be followed by the nominees, among them the sustainable management of the business and the generation of value for the company for which it was indicated.

7.2. PERFORMANCE ASSESSMENT OF STATUTORY BODIES

GRI 102-28

The process of evaluating the performance of the statutory bodies of COPEL (Holding) and its wholly-owned subsidiaries is carried out annually, in a collective manner (pairs and body) and individual (self-assessment), in accordance with applicable legislation and best practices of corporate governance. The process has been conducted since 2016 by independent consultants and approved by the Board of Directors, with a participative and multilateral character. It also contemplates the evaluation of the Secretariat of Corporate Governance in relation to the services rendered to statutory bodies.

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In 2018 the performance evaluation process had its cycle changed for the period from January to September, to enable the consolidation and presentation of the final results, except for the results of the quantitative evaluations of the Board of Directors in the criterion “Business Result”, which is based on indicators related to corporate strategic objectives.

The result of the evaluation process includes the identification of actions to improve the performance of statutory bodies and decision making.

7.3. DEVELOPMENT

GRI 102-27, 205-2

In 2018, a continuation of the development process of COPEL’s (Holding) directors, counselors and fiscal council members and their equity interests, it was established a development plan that provides for 32 hours of training, in compliance with the requirements of Federal Laws 12,846/2013 and 13,303/2016. With the objective of disseminating the best practices of corporate governance and the legal aspects of the

function, the course “Governance and Capital Market Improvement for Public Companies and Mixed Economy Companies” was conducted by the Brazilian Institute of Corporate Governance.

In addition, workshops, lectures and trainings were conducted in the distance learning mode (EaD), in modules that address the following topics: Code of Conduct, Transaction with Related Parties and Conflicts of Interest, Anti-Corruption Law, Risk Management Policy, Internal Control, COPEL Policies and Corporate Law and Capital Markets.

The data on the participation of members of the governing bodies and employees in initiatives of this type are listed in the following tables.

GRI 205-2

Participation in related training – GRI 102-27	
Training	Number of participants
Improvement in Governance and Capital Markets for Directors of Public Companies and Mixed Economy Societies	66 members of statutory bodies
Code of conduct	4,930 employees 102 trainees 23 administrators
State Law, Corporate Governance, Corporate Strategy, Internal Control and Strategic Management of Corporate Risks	26 managers of COPEL (Holding) and wholly-owned subsidiaries

Communication and training in the Anti-Corruption Law for corporate governance bodies – GRI 205-2			
	Total	Training Participants	% of participants in relation to total
Board of Directors	34	26	76
Employees	7,611	4,938	65
Total	7,645	4,964	65



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8. INTEGRITY

8.1. INTEGRITY PROGRAM GRI 102-16

The COPEL Integrity Program, reviewed and approved by the Company's Board of Directors in August 2018, specifically focuses on anti-corruption measures adopted for the prevention, detection and remediation of acts harmful to the Company, involving, for example, the occurrence of bribery, kickback, conflicts of interest, fraud in bidding processes and payments, among others.

The program is supported by the Code of Conduct, which has been in force since 2003 and is reviewed periodically, and also public consultation every four years. The document incorporates COPEL's values, the principles of the UN Global Compact and Corporate Governance, and presents a set of behaviors related to integrity, compliance, transparency, safety and health, social and environmental responsibility, respect and relationship with segments in which the Company operates.

It is the guiding instrument for the acts of all persons engaged in activities on behalf of the Company and its shareholdings, establishing parameters of conduct for employees, members of the Board of Directors, of Councils and of Committees, trainees, suppliers, service providers and contracted. It is widely disclosed among all such audiences and the guidance for their use by suppliers is contained in the Supplier's Manual.

It should be noted that non-compliance with the principles and commitments expressed in the Code of Conduct subjects the individual to the penalties provided for in a standard of functional discipline. The document is available to all interested parties on the company's website.

8.1.1. Disclosure of the Integrity Program GRI 404-2, PRME 1, 2, 3

The dissemination of the Integrity Program and other compliance initiatives is made periodically by electronic means throughout the Company. The Program is also fully available for consultation through the [Compliance Portal](#).

COPEL's business partners are informed about the anti-corruption measures adopted by the Company, as well as its policies and standards, through workshops, lectures and events, and the Supplier's Manual, which is accompanied by a Statement of Science and Commitment, which must be signed and delivered to COPEL.

8.1.2. Internal Control Optimization Project

In order to contribute to the effectiveness of the Integrity Program, in compliance with the legislation (Federal Law No. 12,846/2013 and Federal Decree No. 8,420/2015 and Federal Law No. 13,303/2016) and in maintenance of compliance with the SOX Law, in 2018, the Company implemented the Internal Control Optimization Project, whose objective was to update the Risk and Control Matrix, which was now managed through the SAP GRC PC System.

This project considered, among other steps, the revision and import of the control base for the SAP GRC PC, which has mechanisms for the automated management of the controls from the available solutions in the system, making the process more agile, secure and integrated between the involved.

Another highlight was the expansion of the scope of the Risks and Controls Matrix, also incorporating other companies of the COPEL group, providing greater security for the Company, its administrators, investors and employees involved in the activity, as well as ensuring its continuity in the environment in which it acts.

Due to the complexity and comprehensiveness of the process, it was conducted with the support of specialized consulting.

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Project Highlights

- 18 companies involved in the scope
- 83 cases visited during the review of controls
- 1.534 revised controls - consider SOx, operational and compliance controls

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8.2. ANTICORRUPTION PRACTICES

GRI 103-1, 103-2, 103-3, PRME 1, 2, 3

COPEL emphasizes that the fight against corruption is everyone’s responsibility, as this problem affects the development, reliability and sustainability of companies. The perception that corruption affects not only the public administration, but also the economic order, has mobilized Brazilian society in this decade. This mobilization has generated quite advanced national legislation, which has as its main target the companies, since these are the economic engine of the Country and are directly involved in the most notorious cases of corruption in recent history. The Anti-Corruption Law and its Decree No. 8,420 brought obligations such as the implementation of Integrity Programs and sanctions such as the administrative and civil liability of legal persons for the practice of acts against the public administration, national or foreign.

Non-compliance with legislation entails risks that can compromise the long-term business of organizations, where integrity mechanisms, if effective, reduce financial losses, promote trustworthiness in relation to the market and society, and improve the workplace, as they offer instruments to curb unethical behavior. This anti-corruption apparatus is also considered as an attenuator in the case of isolated criminal cases. Depending on the magnitude of the case, this can mean, for a company, the difference between remaining active or shutting down.

COPEL’s Integrity Program has a specific focus on prevention, detection and remediation measures of acts harmful to the Company, involving bribery, kickback, conflicts of interest, fraud in bidding processes, payments, among others. It allows the integrated management of internal controls and is a planned environment to provide reasonable assurance that the authorizations and records of the financial transactions are carried out properly so as to allow the preparation and disclosure of financial reports in accordance with current standards. The structure of internal controls follows the standards of the Committee of Sponsoring Organizations of the Treadway Commission (COSO), which is an internationally recognized framework. COPEL uses tools provided by the ERP-SAP system.

The Integrity Program and the Code of Conduct are the most important guiding instruments for preventing and combating corruption, but COPEL has other complementary documents to the topic: The Corporate Risk Integrated Management Policy, the Related Party Transactions Policy, the Integrity Policy, the Reporting Channel Policy and the Administrative Standard for the Prevention and Treatment of Fraud and Corruption. The policies apply to COPEL (Holding), its wholly-owned subsidiaries and its controlled. The norm is followed by all, except for the subsidiaries, for which it serves as a recommendation. These materials are in line with the US Foreign Corrupt Practices Act (FCPA) of 1977 and the Sarbanes-Oxley Act of 2002 and the COSO. The policies were reviewed in 2018 and the standard is reviewed every three years, with the next update due in 2021.

The operational processes are evaluated annually for risks related to errors or fraud that could interfere with the results of the financial statements. The process begins in October, when internal controls are audited by the internal auditors and the independent auditor, and the results are reported to the Administration. The tests are completed by assessing the severity and magnitude of deficiencies at the time of filing Form 20-F in the Securities and Exchange Commission (SEC) in April of each year.

Also, annually, the Risk and Compliance Management areas elaborate the Fraud and Corruption Risk Matrix, with the purpose of identifying the risks and their relationship with the Company’s business processes. This document outlines the treatment actions for identified vulnerabilities and impacted target audiences.

Considering COPEL (Holding) and its wholly-owned subsidiaries, 100% of COPEL’s operations were subject to a risk assessment related to corruption. During this evaluation, corruption cases were not identified in 2018. GRI 205-1 205-3



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COPEL adopts the principles of the United Nations Global Compact, of which it has been a signatory since 2000, which encompass the fight against corruption in all its forms, including extortion and bribery. In 2014 the Company also adhered to the Call to Action for Governments in the Fight Against Corruption statement and, in the following year, the Corporate Pact for Integrity and Against Corruption, reaffirming its commitment to transparency and this fight. It also expressed its support for the UN Agenda 2030 movement in its efforts to promote sustainability, ethical conduct and best corporate governance practices. In addition, its principles are based on the Charter of Principles of Social Responsibility, the UN Convention against Corruption and the Organization for Economic Cooperation and Development (OECD) guidelines.

Performance against the 2018 targets

COPEL had as targets for the year to implement certain practices related to conduct and corruption. These goals are outlined below, along with their implementation status.

Goals	Status
Implementation of the outsourced reporting channel	Implemented in June 2018
Background check (integrity due diligence procedure) for critical suppliers	Internal Regulation - NAC 030913 Suppliers and Partners Integrity Evaluation published in November 2018
Training on updating the Code of Conduct	Training of the Code of Conduct was made available as soon as its update was approved in the 166° RECAD of 03/13/2018

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8.3. COMMUNICATION CHANNELS

GRI 102-17, 102-43, 103-3

In order to receive opinions, criticisms, complaints, complaints and inquiries, COPEL provides communication channels that, in addition to contributing to the fight against fraud and corruption, also increase the organization's relationship with its stakeholders.

The Company encourages these parties to record any situation that indicates violation of ethical principles, policies, norms, laws and regulations or other improper conduct.

Report Abuse 	
	Aiming at improving and enhancing the perception of the guarantee of anonymity to the complainant, COPEL made available to its internal and external public, on June 14, 2018, its new Reporting Channel, managed by a contracted company through a bidding process. The initiative is part of the set of measures that are being adopted with the objective of strengthening the Company's governance. With the outsourcing, the number of reports received only in 2018 reached more than 48% of all communications accumulated since 2005, the year in which Copel deployed its first Channel.
	All complaints are treated in a confidential manner, which guarantees anonymity, confidentiality and protection of the protester. COPEL encourages the filing of complaints about fraud, corruption, non-compliance with laws, norms or the Code of Conduct, and other illegal acts or irregularities that involve finance, auditing or accounting. GRI 102-17
	0800 643-5665
	https://www.conformidade.com.br/CanalCopel/
	Available 24 hours a day, 7 days a week
	Open to internal and external audiences

Complaints received by the Reporting Channel in 2018

120 founded

78 unfounded

67 complaints with insufficient content or data

77 pending

28 untreated by the Reporting Channel, for which demonstrators were given guidance on the use of the appropriate channel

Copel Distribuição Ombudsman 	
	Suggestions, complaints and denunciations
	0800-647-0606
	ouvidoria@copel.com
	Available on weekdays, from 8 am to 6pm
	Rua Professor Brasília Ovídio da Costa, 1703, Santa Quitéria Curitiba (PR) – CEP 80310-130
	Receive manifestations personally
	Open to internal and external audiences

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Copel Telecomunicações Ombudsman 	
	Suggestions, complaints and denunciations
	0800-649-3949
	ouvidoriatelecom@copel.com
	Available on weekdays, from 8am to 6pm
	Rua Comendador Araújo, 614, Batel Curitiba (PR) – CEP 80420-000
	Receive manifestations personally
	Open to internal and external audiences

Analysis Commission of Moral Harassment Reporting (CADAM) 	
	Commission of attendance and support for every employee who is a victim of bullying in the workplace. The information is confidential and both the complainant and the defendant have a guarantee of identity preservation
	cadam@copel.com
	Available on demand
	Open to the internal public only

Ethics Guidance Board (COE) 	
	Advisory body that appreciates and issues guidance on processes related to ethical conduct in the Company, with a maximum deadline of 90 days for final response
	conselho.etica@copel.com
	Available on demand
	Open to internal and external audiences

Demands handled by COE in 2018
53 complaints
35 queries

9. RISK MANAGEMENT

9.1. RISK MANAGEMENT

GRI 102-11, 102-15, 102-29, 103-1, 103-2, 103-3

Identifying and responding proactively to events with potential to affect strategic objectives is critical to the sustainability of any company. Not only because this is an activity directly linked to the perennality and image of organizations, but also because it is a demand of investors and other financiers of the business.

At COPEL, the seriousness with which this matter is dealt with is expressed in the Corporate Risk Integrated Management Policy, which establishes that risk maintenance must be maintained at adequate levels. According to the document, this process is divided into five macro stages: identification, evaluation, treatment, monitoring and communication. This COPEL model is based on the Committee of Sponsoring Organizations of the Treadway Commission - Enterprise Risk Management (COSO - ERM) and the Corporate Governance Best Practices Code of the Brazilian Institute of Corporate Governance (IBGC).

Risks are measured in terms of impact (or consequence) and probability, and are classified as:

- » Inherent, when they exist before the adoption of treatment actions that aim to alter the probability or the impact of materialization; and
- » Residual, if remaining after the adoption of actions of treatment of inherent risk.

The main risks that affect COPEL and its wholly-owned subsidiaries, as well as the mitigation measures adopted, are described throughout this document. Further information on this matter is available on Form 20-F and on the [Company's website](#). COPEL is aware that failure to properly manage its risks can generate financial losses, damage to reputation and operations, or damage to environmental resources and society.

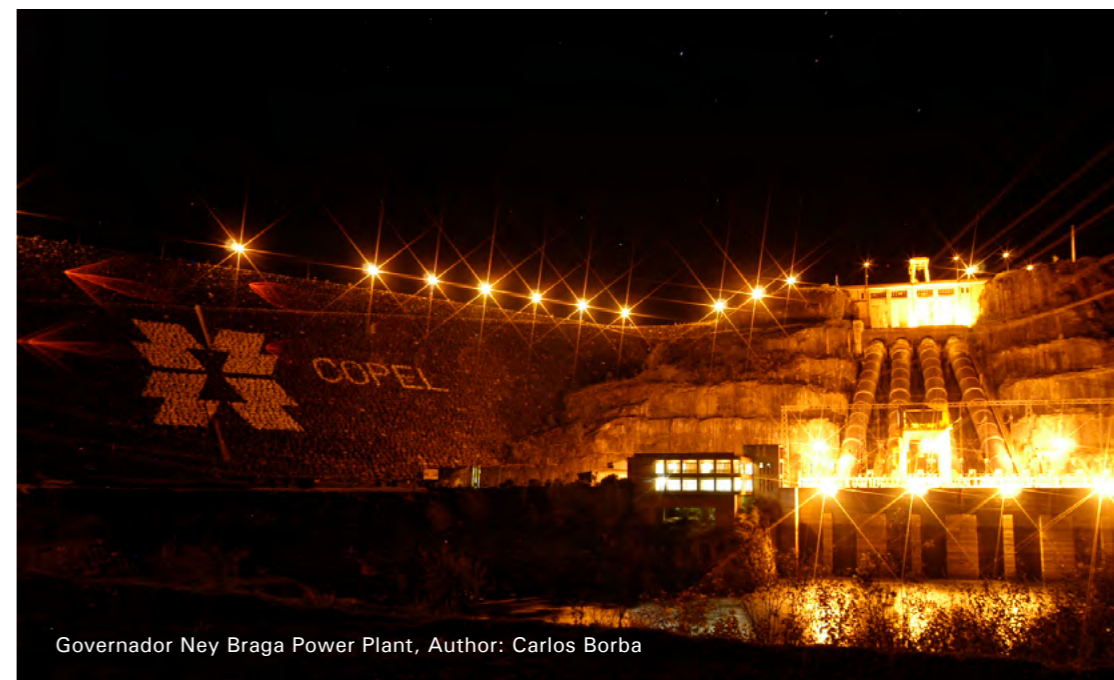
As part of the process of defining Strategic Planning 2018-2027, COPEL reviewed the strategic risks associated with its operations at the end of 2017. The work consisted in identifying and analyzing risks, defining a control plan and contingency, and determining actions of monitoring. Throughout 2018, strategic risks were monitored quarterly, and periodically reported to the Statutory Audit Committee and to the Board of Directors.

9.2. COPEL RISK MANAGEMENT

GRI 102-15, 102-29, 102-30

RISK MANAGEMENT MODEL

The risk management model adopts parameters of risk appetite, considering the probability of its occurrence and its financial, operational, image and socio-environmental impacts, and provides tools for its treatment and mitigation.



Governador Ney Braga Power Plant, Author: Carlos Borba

GUIDELINES FOR RISK MANAGEMENT

Integrated Corporate Risk Management and Internal Regulations Policy

Risks	Impacts
Strategy Risks associated with senior management decision-making and strategic planning	Substantial loss in Copel's economic value
Reputation Negative Advertising	Losses due to the deterioration of Copel's market brand, customers and regulators bodies
Market Changes in market prices, such as exchange and interest rates, and of the shares	Impairment of fair value or future cash flows of financial instrument
Liquidity Insufficient resources, cash or other financial assets	Impossibility to settle obligations on due dates
Credit Failure of customers to fulfill their contractual obligations	Difficulty in receiving amounts billed to clients or counterparts in financial instrument
Disclosure Possibility of issuing financial, managerial, regulatory, fiscal, statutory, incomplete, inaccurate or untimely reports	Copel penalty with fines or other sanctions
Processes Ineffectiveness and inefficiency of Copel's operations, including financial performance targets, operational	Losses resulting from failure, deficiency or inadequacy of internal processes, people and systems, or external events
Information Technology Vulnerabilities in access control, role segregation failure, policy violation, external attacks, IT outages, improper information change or disclosure	Unauthorized access to Company data and information

Risks	Impacts
Social and environmental Impacts of Copel's operations on society and the environment. It is also related to severe climatic events resulting from climate change, the scarcity of natural resources or the mobilization of communities	Impacts on the reputation and assessment of the Company by the supervisory bodies. It may also cause disruption in the rendering of services or damage to energy production.
Projects Risks related to generation, transmission, distribution, telecommunications, research and development projects, among others	It may imply additional costs, delay in delivery of the project and assessment by regulators
Laws and regulations Non-compliance with environmental, labor, tax and regulatory laws to which Copel is subject, including internal policies and standards	Performance by regulatory agencies
Fraud and corruption Theft of physical assets, agency of information, diversion of financial resources, conflict of interests, influence traffic, bribery, kickback, collusion with suppliers and clients, among others	Financial losses, fines, sanctions and penalties by regulatory agencies, and deterioration of Copel's image

RISK PROTECTION INSTRUMENTS

- » Approvals and segregation of duties
- » Incident reporting and control practices
- » Periodic review of risks and associated controls, according to their level of exposure
- » Periodic reports to the Statutory Audit Committee and to the Board of Directors

RESPONSIBLE FOR RISK MANAGEMENT

- » Administrative Council
- » Statutory Audit Committee
- » Executive Board
- » Board of Governance, Risk and Compliance
- » Internal Audit



operational efficiency





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GRI 103-1, 103-2, 103-3

Ensuring operational efficiency is a commitment of COPEL, which understands that failures in this regard constitute a significant risk to the business. If the Company does not reach the minimum level in the plants with dispatch⁹ centralized by the National Electric System Operator (ONS), it may suffer losses of revenue and physical guarantee.

The targets are defined with technical criteria and are demanding, but COPEL has been meeting them annually, especially for its planning. In terms of generation, the availability of the generating plant is around 93.00%, but there are plants that have reached availability above 95% in 2018. Regarding the transmission, the availability indicator currently has a performance above 99%. On a yearly basis, the ONS issues a performance report, which indicates the position of organizations in relation to the industry average for the various indices related to generation and transmission efficiency. In the last three years, COPEL has been above this average. GRI EU30

The Company must also meet Aneel's expectations, as well as the average maintenance cost (maintenance cost percentage in relation to the total operating cost of the plant in the previous year). This value must be informed in the Declaration of Self-Assessment and Operational Performance (Dardo), required by that agency.

The main risk for COPEL's operating efficiency is the unavailability of the generating unit due to equipment failures, which may result in loss of the generation function, that is, the power to produce power at the plant. Occurrences of this nature impact on the availability of the generating set and the rate of failure. To avoid this problem, COPEL continuously monitors the performance of its equipment. Annually, availability and failure rate projections are performed, based, respectively, on maintenance stop schedules and on performance historic at the generating plants. COPEL also maintains an operating reserve for equipment that presents greater difficulty in immediate replacement. In addition, the Company executes a biweekly event analysis program, finding causes of loss of generation function, which allows defining means to prevent them from repeating in other plants. This process involves maintenance and operation teams and maintenance

engineering. In addition, the preventive maintenance plan is followed to the letter, with monthly monitoring.

Those responsible for managing operational efficiency are the area of technical management, which determines the performance metrics, and the Superintendence of Energy Generation and Transmission. Operational areas inform and act on failures. Power plants, transmission lines and substations are serviced by its own maintenance teams. The Maintenance Engineering, installed in Curitiba, takes care of the support to more complex questions, that extrapolate the competences of the field teams.

The software operation management was developed internally by COPEL's I. T. One of such programs has now been modernized to support Transmission Intervention Programming.

It should be noted that the operation and maintenance processes of all power generation plants have been certified to ISO 9001 (Quality Management Systems) since 2005. In 2018, the processes of operation and maintenance of energy transmission infrastructure were also certified. In the same year, COPEL GeT finalized the mapping of the processes of operation and maintenance of generation and transmission. This initiative has evolved to identify risks related to these processes.

The subsidiary also seeks to maintain close contact with its partners. Three to four times a year, those responsible for operational efficiency management meet with the operational areas of these partners to identify possible deviations from the common procedures. The maintenance team has developed a generation management manual, which should be used by these plants. In this document, all generation maintenance activities are listed. A similar manual is being drafted for transmission, with the purpose of unifying the various documents available on this topic.

At COPEL Telecom, internal processes are constantly reviewed and those that are critical to the business pass annually by internal audit. The subsidiary also holds periodic meetings, called Critical Review Meetings (RACs), based on the Management Excellence Model (MEG) of the National Quality Foundation, in which it tracks the indicators and events related to a given period in order to identify

⁹Provision of generation by the generating park.



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deviations and propose preventive and corrective actions. The standard of quality of services is regulated through performance indicators practiced by the market and monitored by the National Telecommunications Agency (Anatel). Telecom's goal is to benchmark these indicators.

COPEL Distribuição also adopts the MEG and monitors its performance in operational efficiency by the RACs. For indicators that do not meet the defined criteria and agreed as targets, action plans are prepared according to the methodology of the 3 Generations Report, which identifies the problematic points that prevented each indicated and the proposals for the recovery of results.

The availability of electricity is guaranteed through the process called Operation of Distribution Grids, which involves the planning of networks in the medium and long term, in addition to short-term actions. The distribution systems are divided according to the voltage class: medium voltage (13,8 Kv and 34,5 Kv) and high voltage (69 Kv, 88 Kv and 138 Kv). For the medium voltage system, the planning uses consumption and demand data for market growth and substation measurements. For the high voltage system, the planning uses the same data, plus those provided by the National System Operator (ONS) and the EPE (Energy Research Company), with whom COPEL develops several studies. [GRI EU6](#)

The grids are simulated considering the vegetative growth of a certain region and, from the results, are planned systemic works to supply the energy demand of the consumers.

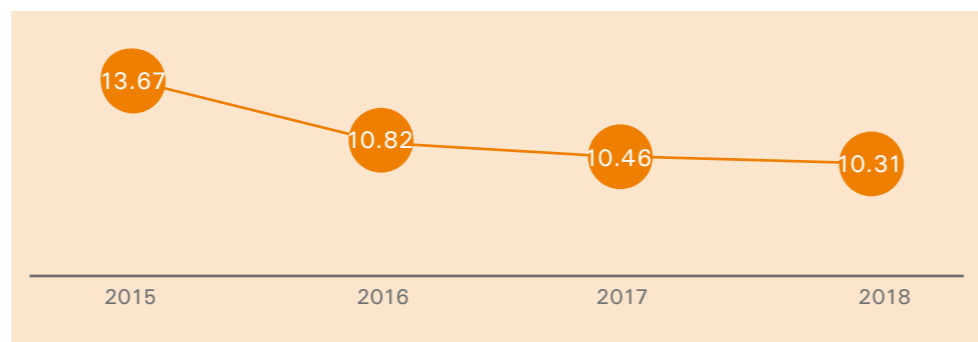
At COPEL Comercialization, the management is done through the monitoring of process indicators and action plans defined in the Performance Analysis Meetings (RADs), held monthly, also in accordance with the MEG methodology. Quarterly, Strategic Analysis Meetings (RAEs) are held, during which the indicators of the management contract of COPEL COM, available in the Strategic Management System (SGE), are evaluated.

The results of the indicators Equivalent Duration of Interruption per Consumer Unit due to interruption of internal origin to the distribution system (DECi) and Interruption Frequency of Interruption per Consumer Unit due to interruption of internal origin to the distribution system (FECi) have been improving since 2014, due both to investments in works carried out throughout the distribution system and to the increase in maintenance and preventive inspections, aiming at improving performance and expansion. [GRI EU28, EU29](#)

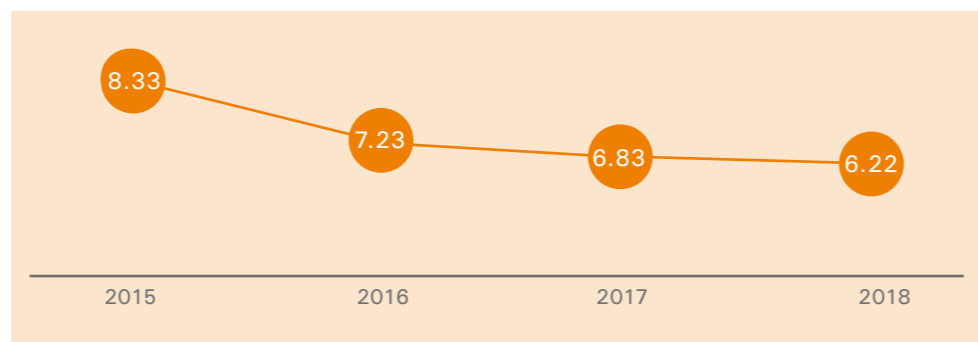
9.3. QUALITY OF SUPPLY AND ENERGY LOSSES

The results of the indicators Equivalent Duration of Interruption per Consumer Unit due to interruption of internal origin to the distribution system (DECi) and Equivalent Frequency of Interruption per Consumer Unit due to interruption of internal origin to the distribution system (FECi) have been improving since 2014, due to both to investments in works carried out throughout the distribution system, as well as to the increase in maintenance and preventive inspections, aiming at improving performance and expansion. [GRI EU28, EU29](#)

Evolution of DECi (DECi measured in hours and hundredth hours)



Evolution of FECi (interruptions)



Note: The figures presented for 2018 refer to DECi and FECi, which differs from previous versions of the Sustainability Report, which disseminated the DEC and FEC. [GRI 102-48](#)

Energy losses are inherent in the nature of the process of transformation, transmission and distribution of electric energy. In 2018, global distribution losses - technical, non-technical and basic grid - accounted for 9.7% of the energy injected into the distribution system. This percentage rose slightly compared to that observed in 2017, but within the same levels of previous years. Technical losses, on the same basis, registered a small reduction, while non-technical losses, on the other hand, increased by approximately 0.7 pp in 2018. [GRI EU12](#)

Evolution of transmission and distribution losses – GRI EU12

Types of losses		2016	2017	2018
Transmission	Global losses (%)	1.5	1.4	2.47
	Technical losses (%)	1.5	1.4	2.47
Distribution	Global losses (%)	9.6	9.2	9.7
	Technical losses (%)	6.1	6.1	5.9
	Non-technical losses (%)	2.0	1.7	2.4

9.4. ADVANCES IN OPERATIONAL EFFICIENCY

9.4.1. Enlargement of Bateias and Sarandi

COPEL invested R\$27 million in the expansion of two strategic substations for the National Interconnected System (SIN) - the Sarandi Substation and the Bateias Substation, both located in Paraná. The works were completed in July and October of 2018, respectively.

The Sarandi substation, in the northwest of Paraná, which operates at 230 kV, received a new three-phase transformer with a power of 150 Mva. The purpose of the project was also to increase the security and capacity to meet the demand of the region. The substation has a 230/138 kV transformer, which serves the electrical system under normal conditions, however, in the future, under certain conditions, the equipment could become overloaded.

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The new transformer will increase the reliability of power supply, benefiting more than 500,000 people, among residential consumers, commerce and industry, in the region of Maringá and Apucarana.

In Bateias, located in Campo Largo, in the Metropolitan Region of Curitiba, the objective of the investment was to increase the reliability of the electric system, since it is part of the most important branch in the capital and region. A loss of transmission capacity in this installation would result in severe operational restrictions to the system and could, in extreme cases, cause major cuts in the power supply. To prevent this type of situation, Bateias received a new bank of 525 kV bar reactors, with four reactive power equipment of 66.6 MVA reactive and electrical connections.

9.4.2. Investment in microgrid project in Paraná

COPEL developed an innovative initiative in partnership with Itaipu Binacional, involving so-called microgrids, a concept of generation and use of energy considered the future of the electric system. The pilot of the Microgrid COPEL-Itaipu Project was installed in the municipality of São Miguel do Iguazu (PR), based on the generation of energy from biodigesters of swine manure. The system began operating in the second half of 2018.

The concept of microgrid basically consists of an “energy island” in which generation, storage and consumption can function connected or not to the distribution grid. This technology has gained space especially in Europe and the United States to assist in grid operation and act as a fast and efficient backup in cases of contingency, especially in remote regions. This is because the microgrid creates a kind of reliability area in which the set of facilities can be inert to the network and continue to feed a group of customers while the main network is repaired.

In Paraná, the proposal could bring more resilience to the concessionaire’s grid and contribute to the Mais Clic Rural Program (see page 89). In addition, they act as support in cases of contingency. In this project, there is also an environmental gain, since pig manure have productive destination.

Although microgrids are already being deployed in Brazil in structures such as condominiums, the difference in COPEL’s project is that, instead of benefiting only a specific group of consumers, it may extend to neighbors and other users who are not necessarily part of this system.

In this first deployment, the initiative will contemplate the adaptation of a bio digestion plant that generates energy from methane gas from animal waste. It is a micro-generator that acts with shared distributed generation.

The generation, in this first venture, is still low, of 150 KW year - enough to supply up to eight consumers agribusiness. However, there is potential for adaptation of plants with up to 1 MW of energy, capable of serving up to 800 consumers on each island.



COPEL transmission assets



increased demand



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GRI 103-1, 103-2, 103-3, EU7

Approximately 99% of energy consumption in Brazil occurs in regions served by the National Interconnected System (SIN). Thus, in the event of a lack or excess of electricity generation, the effect is felt throughout the country.

The electricity load (consumption plus losses) in the SIN increased by 28.3% between 2008 and 2018, when the average load of 51,900 MW medium (457,5 GWh per year) and 66.6 thousand average MW medium (583.0 GWh per year). Although this increase varied according to the country's economic situation in the last decade, there was an average annual growth of 2.5%, a percentage that should reach 3.6% between 2019 and 2027, according to the forecasts of the 10-Year Expansion Plan Energy (PDE).

The PDE is the responsibility of the Energy Research Company (EPE). The organization, which is linked to the Ministério de Minas e Energia - MME (Ministry of Mines and Energy - MME), carries out studies and projections of the energy matrix, and defines Brazilian energy expansion and integrated resource programming. The EPE works together with the National System Operator (ONS) and follows the guidelines of the National Energy Policy Council (CNPE) and the applicable legislation and regulations.

In order to meet the demand expected by PDE 2027, it will be necessary to implement approximately 61 thousand MW in new centrally-planned projects between 2018 and 2027. Of this total, 22 thousand MW of capacity have

been hired by the Federal Government. There is, therefore, the need to contract another 39 thousand MW of generation for the coming years, which will require investments of around R\$200 billion. For COPEL, this need translates into opportunities for development, feasibility and implementation of new projects.

The identification of these opportunities and the risks related to them is carried out by the Business Development Board through the competitive intelligence matrix, whose analysis are conducted by the Business Strategy Coordination on a continuous basis. The results are used in defining the target portfolio and the business of COPEL. In the case of generation projects, almost all of the expansion is made possible through the auctions carried out by target portfolio and expansion of COPEL's business. In the case of generation projects, almost all of the expansion is made possible through the auctions carried out by MME and the National Electric Energy Agency (Aneel), according to the sources to be contracted, the maximum prices and security conditions in the electricity supply previously defined.

For the distribution, the contracting of electric energy is carried out through auctions promoted by Aneel, by delegation of MME. Accordingly, COPEL Distribuição has no control over the origin and price of the energy. Energy planning is limited to forecasting and managing the volumes that need to be contracted.

In the case of generation projects, almost all of the generation expansion in the SIN is made via the auctions carried out by MME / EPE, which



Copel transmission assets Author: Daniela Catisti



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defines the generation sources that will be contracted in the auctions and the maximum prices and verifies the safety conditions in the electricity supply..

COPEL's energy planning is foreseen in the Strategic Planning 2019-2028, which lists the Company's strategic guidelines for both business and social-environmental.

Risks of non-compliance with energy planning:

- » Loss of concessions
- » Level of expansion insufficient to guarantee the Company's sustainability

- » Failure to meet the quality criteria of the Concession Agreement

Goals related to energy planning:

- » Maintaining the economic-financial balance
- » Develop potential markets based on service innovation and excellence

Impact of changes in energy demand

Short-term variations in electricity demand do not significantly affect new generation projects, as these are made possible through long-term supply contracts. However, these variations may affect COPEL's business in the following areas:

COPEL Generation and Transmission: affect the sale price of non-contracted energy in the long term, the result of the short-term financial settlement (settlement price of the differences - PLD) and the level of contracting of the physical guarantee available for commercialization.

COPEL Distribution: Although the distribution companies do not have their results linked to the commercialization of energy (the value related to the energy charged to consumers is equal to the acquisition value), their results can be impacted if the quantity of energy contracted is higher or lower than the demand for its concession area.

COPEL Trading: affect energy purchase and sale prices and the result of the short-term financial settlement (settlement price of differences - PLD).

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9.5. REDUCTION OF ENERGY SHUTDOWNS

GRI EU7, EU23

COPEL verified in 2018 that the duration and frequency of power outages in Curitiba have fallen by half in the last four years due to expansion works carried out in the electricity system between 2011 and 2017, a period in which the capital of Paraná received R\$ 670 million in expansion of power distribution networks, construction of new substations and transmission lines, and reinforcements to serve the Metropolitan Region. The equivalent interruption frequency per consumer unit dropped 42.26%. The average time that each property in the capital ran out of energy fell 50% in the same period.

Among the main works in Curitiba, we highlight infrastructure expansions in the network up to 34.5 kV, to meet the demand of consumers already connected. COPEL invested R\$ 65 million in order to enable new requests for connection and load increase of urban and rural consumers in the capital.

New substations were installed in the neighborhoods of Novo Mundo, Sítio Cercado, Bairro Alto, Bom Retiro, Hauer, Jardim das Américas and Jardim Botânico, totaling investments of R\$ 134 million. These deployments resulted in the installation of new power distribution and transmission lines, from 69 to 138 kV.

Existing distribution networks have been expanded and strengthened to new requests for urban and rural social programs, such as Luz Para

Todos or Nocturnal Irrigation.

The high voltage grid has also gained reinforcement over the last four years. A total of R\$ 280 million was invested in several expansion or implementation works, with emphasis on the Curitiba Norte (230 kV) substation in Almirante Tamandaré and the transmission line linking it to the Bateias substation; for the Curitiba East substation (525/230 kV), in São José dos Pinhais, with the transmission line connecting it with Curitiba and Fazenda Rio Grande; and to the Santa Quitéria substation (230 kV), in the neighborhood of the same name in the capital.

Another work of relevance is the Uberaba - Curitiba Centro transmission line. The old power grid, whose transmission towers gave rise to the nickname “Avenida das Torres”, will become an underground line of eight km long and will have its capacity of operation increased from 69 kV to 230 kV.

9.6. INVESTMENTS IN MARINGÁ

The electric system of Maringá has gained significant reinforcements in recent years. Investments were made in transmission lines, in the expansion of the distribution networks and in the construction of the Mandacaru substation.

Among the main works to meet the increased demand for energy is the installation of new transformers in the substations. Jardim Alvorada and Horizonte, with investments of R\$ 11 million.



Governador Bento Munhoz Power Plant Author: Guilherme Pupo



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With them, the city's energy transformation capacity went from 291 to 431 MVA, which represents a 50% increase in the energy available to the municipality.

The works also reflected improvements in the quality of energy supply in the region, according to indexes controlled by the National Electric Energy Agency (Aneel). In the last four years, Maringá recorded a decrease of 21% in the frequency and 25% in the duration of the disconnections per consumer unit.

Among the works carried out during 2018 are the expansion of the 34.5 kV distribution line and the increase of ring capacity that interconnects three of the city's four substations through the 138 kV transmission lines.

9.7. INVESTMENTS IN NEW WORKS ON THE TRANSMISSION NETWORK

COPEL received authorization from the National Electric Energy Agency (Aneel) to invest R\$ 107 million in the expansion and reinforcement of the electricity grid in several regions of Paraná. The works are expected to start in 2019 and include the installation of new equipment at the Realeza Sul, São Mateus do Sul, Pato Branco, Ponta Grossa Sul and the Londrina - Ibiporã transmission lines. The projects will have periods of 30 to 36 months for execution.

These investments will expand transmission capacity and make the interconnected system increasingly robust and stable to meet the

demand for energy throughout the State. By 2021, the construction of 600 Km of lines in projects throughout Brazil, completed by COPEL in the Aneel transmission auctions, should be completed by 2021.

9.8. MODERNIZATION OF CONSTRUCTION OF COMPACT SUBSTATION

COPEL began in August to build a modern energy substation in Curitiba. Compacted and sheltered in a three-story building - one of them underground - the Água Verde Substation will operate at 69 kV voltage, directly benefiting 25 thousand homes in the neighborhoods Água Verde, Rebouças, Parolin, Guaíra, Portão and Vila Izabel. Estimated at R\$ 23 million, the work should start operating at the end of the first half of 2019.

The new venture provides more security and stability to the electric system in the central region of the capital, connecting to the Parolin and Santa Quitéria substations, and serving as an alternative for energy supply in case of emergencies or disconnections. By providing more energy, the unit also allows the expansion of cargoes in the region, as in the future connection of new homes and public and commercial enterprises.

The Água Verde Substation is a gas-insulated and gas-insulated type (GIS), which allows it to occupy a smaller area of land, without the typical aerial busses of conventional substations.

The entire facility, including buses, transformers and other equipment, are deployed within a building, making the substation resemble a common commercial building.

9.9. MEDIANEIRA SUBSTATION

With a total investment of R\$ 40 million, the works of the new substation in the municipality of Paraná began in January 2018. The project will occupy a 27 thousand m² at the margin of the highway PR 495, at the exit to Missal, and to reinforce the electrical system of the entire region. Start-up is scheduled for May 2019.

The Medianeira Norte substation will operate at 230 kV, with two transformers, each with 150 MVA of power. Connected to the Cascavel (230 kV), Foz Iguaçu Norte (230 kV) and Cascavel Oeste (525 kV) substations, it will relieve the municipality's transmission system, which currently has a 138 kV substation and has limited capacity to service the increase of energy consumption, especially in the hottest months of the year.



regulatory environment





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GRI 103-1, 103-2, 103-3

It is incumbent upon the National Electric Energy Agency (Aneel) to regulate the policies and guidelines of the Federal Government for the use and exploitation of electric energy services by agents of the sector, by captive and free consumers, by independent producers and by autoproducers. It is also up to the Agency to define standards of quality of service and security compatible with regional needs, focusing on the technical, economic and environmental feasibility of actions, and, through these efforts, promote the effective and efficient use of electric energy and conditions for free competition in that market.

Regulating the sector, therefore, protects the participating agents, whether companies or customers and consumers, by making clear and centralize the rules of its operation. Ignorance of the regulatory environment by the Company and its stakeholders may impact on its competitiveness in relation to other organizations in the market, as well as impair its image and value in case of non-compliance with applicable regulations, regulations and legislation. On the other hand, this environment allows COPEL to identify new business opportunities and determine some of the risks associated with its activities, in order to develop mitigation actions.

The identification of these impacts occurs continuously, through the monitoring of bills of interest or impact for COPEL; of the Company's representation in working groups in the Sectoral Associations; and the coordination of legislative amendment processes established through public hearings and consultations. The publication of acts - laws, decrees, ordinances, regulations, dispatches, among others - is monitored daily, for further dissemination in the Company via a report called "Regulation on the Day". Only in 2018, were issued 31 normative resolutions, 15 decrees and 3 laws related to the electric sector. [GRI 102-15, 102-29](#)

COPEL's regulatory area has a database to register all proposals for regulatory changes, internal consultancies and other pertinent documents, such as letters, infractions, notifications and acts published by the granting authority. In addition, a project is underway for the acquisition of new regulatory management software.

Representation in the associations and the performance of its regulatory area, together with its technical areas, makes COPEL actively participate in the regulation of the sector, according to the interests of its stakeholders and society as a whole (*more information on page 57*).

COPEL has a coordination of regulatory matters, supported by related areas within the wholly owned subsidiaries. The regulatory teams are multidisciplinary, composed of professionals in engineering, economics and administration.

9.10. NEW SECTOR FRAMEWORK

The proposal for regulatory changes prepared by the Ministério de Minas e Energia (Ministry of Mines and Energy) was submitted to the National Congress in 2018 through Law 1917/2015. This proposal was based on Public Consultation No. 33, opened in 2017 with the objective of improving the legal framework of the sector. The improvement in price formation and market functioning, the internalization of environmental externalities associated to emissions, the separation of ballast and energy, the expansion of the free market and changes in the allocation of risk of dispatch decisions in regulated contracting are among the referrals signaled by the Ministry.

The free energy market is the environment in which consumers freely negotiate with energy traders and generators. Currently, to operate in this market, free consumers must submit a contracted demand of more than 3 thousand kW, being allowed to contract energy from any source of generation. With the publication of ordinance no. 514 on December 29, 2018, this limit will be changed to 2.5 thousand kW and to 2 thousand kW, as of July 1, 2019 and January 1, 2020, respectively. The so-called special consumers, those whose contracted demand is equal to or greater than 500 kW and less than 3 thousand kW, which can only contract energy from wind, solar, biomass, small hydroelectric power plants (PCHs) or hydroelectric projects of less than or equal to 50 thousand kW.



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COPEL Comercialization was created to operate in the free energy market, focusing on the retention of COPEL's customers and the expansion of its customer base, in view of the potential growth of this market. Learn more about this subsidiary and its action on page 151.

9.11. PARTICIPATION IN ASSOCIATIONS GRI 102-13

COPEL contributes to the United Nations Development Program (UNDP) through the Brazilian Global Compact Committee (CBPG). This committee represents the Brazil Network of the Global Compact and is composed of companies, United Nations agencies in Brazil, business entities, civil society organizations, educational institutions, among others.

As a member of the CBPG, COPEL is committed to promoting the Global Compact and its principles in Brazil. The Company also contributes financially to the initiative. It also participates in the working groups on ODS, energy & climate, and human rights & labor.

Copel Distribuição
Conselho Paranaense de Cidadania Empresarial (CPCE)
Fórum Paranaense de Mudanças Climáticas Globais
Grupo de Trabalho Inter setorial do Instituto Paranaense de Desenvolvimento Educacional (Fundepar)
Movimento Nacional ODS - Nós Podemos Paraná (MNODS-PR)
Programa Brasileiro GHG <i>Protocol</i>

Copel Geração e Transmissão
Associação Brasileira de Concessionárias de Energia Elétrica (ABCE)
Associação Brasileira das Empresas Geradoras de Energia Elétrica (Abrage)
Associação Brasileira de Manutenção e Gestão de Ativos (Abraman)
Associação Brasileira das Grandes Empresas de Transmissão de Energia Elétrica (Abrate)
Associação dos Produtores Independentes de Energia (Apine)
Câmara de Comercialização de Energia Elétrica (CCEE)
Centrais Elétricas Brasileiras S.A. (Eletrobrás)
Centro de Pesquisas de Energia Elétrica (Cepel)
Comissão de Integração Elétrica Regional (Cier)
Comitê de Benchmarking para Excelência na Gestão (CBEG)
Comitê Brasileiro da CIER (Bracier)
Comitê Brasileiro de Barragens (CBDB)
Comitê Brasileiro de Eletricidade, Eletrônica, Iluminação e Telecomunicações (Cobei)
Comitê da Bacia Hidrográfica do Tibagi – Sistema Estadual de Gerenciamento de Recursos Hídricos
Comitê Nacional Brasileiro de Produção e Transmissão de Energia Elétrica (Cigre)
Conselho Estadual de Recursos Hídricos (CERH/PR)
Conselho Regional de Engenharia, Arquitetura e Agronomia (Crea)
Consórcio Para Proteção Ambiental da Bacia do Rio Tibagi (Copati)
Empresa de Planejamento Energético (EPE)
International Hydropower Association (IHA)
Ministério de Minas e Energia (MME)
Ministério Público do Paraná (MPPR)
Operador Nacional do Sistema Elétrico (ONS)
Sistema de Controle Interno do Poder Executivo Estadual (Siac)
Sistema Meteorológico do Paraná (Simepar)

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Copel Telecomunicações
Associação Brasileira de Prestadoras de Serviço de Telecomunicações Competitivas (Telcomp)
Associação Brasileira de Recursos em Telecomunicações (ABRTELECOM)
Associação NEOTV
Associação de Usuários de Informática e Telecomunicações (Sucesu - PR)
Conselho Regional de Engenharia, Arquitetura, e Agronomia do Estado do Paraná (CREA-PR)
Fórum Sul e Sudeste de Ouvidores das Empresas dos Serviços Públicos de Energia (FOESPE)
Fundação Comitê de Gestão Empresarial (Funcoge)
Núcleo de Informação e Coordenação PONTO BR (NIC)
Secretaria da Ciência, Tecnologia e Ensino Superior (Seti)
<i>Utilities Telecom Council America Latina (UTC AL)</i>

Copel Comercialização
Associação Brasileira de Comercializadores de Energia (Abraceel)
Associação da Indústria de Cogeração de Energia (Cogen)





sustainability





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10. SUSTAINABILITY MANAGEMENT

PRME 1, 2

Throughout its history of more than six decades, COPEL has consolidated itself as a company committed to sustainable development. The Company's practices, actions and commitments reflect its focus on sustainability, in alignment with strategic guidelines, mission, vision and corporate values.

This orientation towards sustainability can be seen by the Company's strategy of diversifying its generating park, prioritizing clean and

renewable sources, in caring for the environment, in supporting the social development of surrounding communities, in corporate responsibility, in the periodic reaffirmation of its commitment to the Global Compact, in supporting the implementation of the Sustainable Development Goals (ODS), among others. In this way, it promotes socioeconomic development and the improvement of the quality of life of the population.

Currently, COPEL is present in ten Brazilian states. It is proud of Paraná people and is also a recognized company in the national and international scenarios.

Due to its responsible and competent performance, guided by the balance of economic, social and environmental aspects, the Company has obtained significant results, generating shared value for its stakeholders and conquering more and more the recognition of society.

COPEL's permanence in the following portfolios stands out as a result of 2018:

- » Business Sustainability Index (ISE), from B3
- » FTSE 4Good Emerging Index¹¹

In its ongoing search for corporate sustainability, COPEL adopts practices that provide benchmarking studies, the measurement and evaluation of its performance, as follows:

- » Ethos Indicators for Sustainable and Responsible Business Models - COPEL uses indicators as a way to manage and measure the level of excellence in relation to corporate social responsibility.
- » Ethos Indicators - Integrity, Prevention and Fight against Corruption - the signatory companies of the Business Pact by Integrity and Against Corruption respond annually to a set of 70 questions concerning commitments made at the time of its accession.

¹¹ Index that measures the performance of companies in the environmental, social and governance domains. Developed by the independent production company of indexes FTSE, it is composed of The Financial Times and the London Stock Exchange.

COPEL remains in the portfolio of the B3's Corporate Sustainability Index

In 2019, for the 13th time, COPEL will continue to be part of the select portfolio of the Corporate Sustainability Index (ISE) of B3 - Brazilian Stock Exchange - which runs from 07/01/2019 to 03/01/2020.

This is a reflection of its constant concern for the development of sustainability, based on economic efficiency, environmental balance, social justice and corporate governance.





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- » **Excellence in Management Model (MEG) of the National Quality Foundation (FNQ)** - reference model in organizational management that aims at the “Best in Management” award of the National Quality Foundation (FNQ). It is composed of 8 fundamentals, among them, Sustainable Development, composed of economic, financial, environmental and social themes. Each year COPEL Distribuição, COPEL Geração e Transmissão, and COPEL Telecomunicações are submitted to the FNQ evaluation to verify the level of management maturity.

For accountability, engagement with stakeholders and performance reporting, COPEL adopts:

- » Global Reporting Initiative (GRI) - since 2005, the Company has prepared sustainability reports based on GRI guidelines to provide transparent information on its management and performance in the most relevant aspects of business sustainability, using consistent and comparable indicators.

- » Integrated Report of the International Integrated Reporting Council (IIRC) - since 2015 COPEL has been adapting its report to the methodology of the Integrated Report.
- » Greenhouse Gas Protocol (GHG Protocol) – Since 2008 COPEL has published the inventory of greenhouse gas emissions following the standards of this global initiative. As of 2012, the inventory is now verified by third party.
- » Carbon Disclosure Project (CDP) – through this platform, since 2010 COPEL has reported on greenhouse gas emissions, management practices and strategies for climate change.

11. VOLUNTARY COMMITMENTS

GRI 102-12, PRME 1, 2, 5, 6

Throughout its history, COPEL has assumed, supported and disseminated voluntary commitments that are recognized worldwide as good practices of corporate sustainability.

Initiative	Date of adoption
Global Compact [GRI 102-43]	2000
Gender and Race Equity Program	2009
<i>Women Empowerment Principles – WEP</i>	2010
Statement: Call to Action for Governments in the Fight against Corruption	2014
Principles for Sustainable Executive Education (PRME)	2014
Term of technical cooperation with the Public Prosecution’s Office of Paraná and several state institutions for the analysis of municipal urban afforestation plans	2014
Agenda 2030 [GRI 102-43]	2015
Business Pact for Integrity and Against Corruption	2015
National Movement ODS We Can [GRI 102-43]	2016
Network of Companies for the Learning and Eradication of Child Labor	2016
Cities Program of the Global Compact [GRI 102-43]	2017
Hub Local 2030	2018

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11.1.1. Achievements in 2018

GRI 413-1

COPEL's installation houses the center of the UN Cities Program for the southern region of Brazil and the first Local Hub 2030 in the world

In October 2017 COPEL was appointed by the International Secretariat of the Cities Program of the UN Global Compact, to host and coordinate the UN Global Compact Cities Program Center for the Southern Region of Brazil, in partnership with the State Council for Economic and Social Development (Cedes) and Autonomous Social Service - Paranacidade, of the Paraná state government.

This program, which is considered the urban arm of the Global Compact, has the mission of promoting and supporting actions and projects so that cities can become more sustainable, inclusive, resilient and innovative through multi-sector partnerships between government, companies, civil society and universities, seeking solutions to the urban challenges.

The advances of this program include the participation of 41 municipalities in Paraná and the participation of the state in the platform City Partnerships Challenge, which will enable municipalities to be trained in the development

of sustainable projects and the financing of these initiatives by partner international funds. This project will last two years.

Due to the historical role of the State of Paraná with the global agendas, especially the Global Compact and the Cities Program, in July 2018, during the High Level Political Forum on Sustainable Development held in New York, Paraná was invited by the UN Deputy Secretary-General, Amina J. Mohammed, to establish an innovative model to accelerate the implementation of Agenda 2030 at the regional and local levels, called Local Hub 2030.

Inaugurated in September 2018, in the space called Chapéu do Pensador, Hub 2030 is part of a network that brings together the UN system, local governments, companies and civil society. Its purpose is to collaboratively develop and implement solutions to advance the Sustainable Development Objectives (ODS), as well as to systematize and report together the transformative actions and projects connected to the objectives of Agenda 2030.

The initiative expands the activities of the regional center of the Cities Program of the Global Compact, now installed in space integrated to the Hub.

Copel receives award for its volunteer program

Copel received the Viva Voluntário Award 2018, in the Public Sector category, with the Project with Social Institutions, through the Permanent Public Call. The award is a recognition of the federal government to the actions of entities and citizens in favor of volunteering throughout Brazil. The award-winning project is part of the actions carried out by the EletriCidadania program and demonstrates the effectiveness of COPEL's work for sustainability.



Image Bank

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COPEL and the Sustainable Development Objectives (ODS)


Reinforcing the commitment to the Sustainable Development Objectives (ODS), COPEL presents its actions related to the relevant ODS, resulting from the materiality process executed in 2018. Impact and opportunity analysis were carried out for the sectors in which COPEL has business, and the mapping of the challenges to be faced by Brazilian society. The relevant ODSs are:

Objective 7 - Accessible and Clean Energy	
	Ensure reliable, sustainable, modern and affordable access to energy for all.
	Actions:
	- Generation of energy by renewable sources
	- Eficiência Energética Program
	- Luz Fraterna Program
	- Morar Bem Paraná Program
	- Paraná Cidadão Program
	- Social Energy Tariff
	- Mais que Energia Program
	- <i>Smart Grid Project</i>
- Telemetering	
- Mais Clic Rural Program	
- Integrated Development and Citizenship Actions Program	
- Life Cycle Analysis	

Objective 8 - Decent Work and Economic Growth	
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	
Actions:	
- Ethical Guidance Board	
- Moral Harassment Report Analysis Commission	
- Diversity Program	

Objective 8 - Decent Work and Economic Growth	
- Eco-efficiency Program	
- Night Irrigation Program	
- Corporate Waste Management Program	
- Life Cycle Analysis	

Objective 9 - Industry, Innovation and Infrastructure	
	Build resilient infrastructures, promote inclusive and sustainable industrialization and foster innovation
	Actions:
	- Paraná Digital Program
	- Paraná Conectado Program
	- State Broadband Plan – PEBL
- Smart Grid Project	
- Telemetering	

Objective 13 - Action Against Global Climate Change	
Take urgent action to combat climate change and its impacts	
Actions:	
- Internal Socio-environmental Commissions – Cisas	
- Corporate Climate Change Management Program	
- <i>Participation in the Brazilian GHG Protocol</i>	
- Eco-efficiency program	
- EducaODS Program	
- <i>Smart Grid Project</i>	
- Telemetering	
- Life Cycle Analysis	
- Carbon Zero Project	


To learn more about COPEL's actions regarding the Global Compact Principles and other ODS, please see the Appendix - Incorporation of the Global Compact Principles and ODS, on page 220.



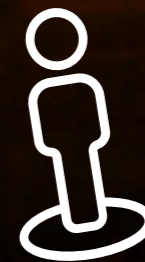
performance of capital





 COPEL

human capital



12. HUMAN CAPITAL

12.1. MANAGEMENT OF HUMAN CAPITAL

GRI 103-1, 103-2, 103-3, PRME 1, 2

The main risks associated with poor human capital management are the loss of fundamental knowledge about the Company, acquired over the course of the professional career, low productivity and misalignment with the culture of the organization.

COPEL's human capital management is based on the Personnel Management Policy, the last revision of which occurred in March 2016. According to the principles defined in this document, employees are COPEL's most valuable resources, since their qualification, dedication and commitment are fundamental to the Company's success. The knowledge and continuous development of employees are the pillars of excellence at COPEL. Ethics, transparency, trust, mutual respect and integrity are the basis of professional relationships.

.....

The importance of human capital for the Company is evidenced by COPEL's presence for the second consecutive year in the ranking of the 150 Best Companies to Work for Guia Você S/A

In addition to this policy, there are also the Occupational Safety and Health Policy (page 78), the Code of Conduct (page 37) and the COPEL Manual, which guide the performance of employees in their work routines. In addition, COPEL acts in accordance with the fundamental conventions of the International Labor Organization (OIT) and the International Declaration of Human Rights, and with the current legislation.

OPEL's strategic objectives are to provide a healthy work environment, which enhances the valorization and well-being of employees, as well

as promoting a culture of people management based on meritocracy and inclusion.

The importance of human capital for the Company is evidenced by COPEL's presence for the second consecutive year in the ranking of the 150 Best Companies to Work for Guia Você S/A.



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12.2. HUMAN CAPITAL PROFILE

At December 31, 2018, COPEL had 7,611 employees, of whom 1,687 were women and 5,924 were men. This total is 8% lower than in 2017, mainly due to the adhesion of 563 employees to the Volunteer Dismissal Program. In all, 670 employees left the Company in 2018. There were 37 hirings by public tender. The turnover rate was 4.3.

There are no seasonal factors that generate significant variations in COPEL's employees. One hundred percent of employees are covered by collective bargaining agreements.

GRI 102-41

COPEL does not make the unified management of outsourced employees, since each subsidiary has its own control. As of December 31, 2018, 6,722 outsourced and 195 apprentices worked for COPEL.

Table of COPEL employees by gender GRI 102-8, 405-1					
	2017		2018		Range 2017x2018
	No.	%	No.	%	
Men	6,400	78%	5,924	78%	-7%
Women	1,845	22%	1,687	22%	-9%
Total GRI 102-7	8,245		7,611		-8%

Note: All COPEL employees have a permanent contract.

Employees by period of work and gender 102-8						
	2017			2018		
	Men	Women	Total	Men	Women	Total
Full time	6,376	1,827	8,203	5,906	1,671	7,577
Half time	24	18	42	18	16	34
Total	6,400	1,845	8,245	5,924	1,687	7,611

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Employees by region GRI 102-8	
Region	Total
South	7,525
Southeast	22
Midwest	54
Northeast	10
Total	7,611

Employees by gender and type of employment GRI 405-1						
Gender	Employees	%	Managers	%	Total	% in relation to total
Male	5,527	72.62	397	5.22	5,924	77.83
Female	1,587	20.85	100	1.31	1,687	22.17
Total	7,114	93,47	497	6,53	7,611	100,00

Percentage of employees by age group GRI 405-1			
	2016	2017	2018
Under 30 years	10.05%	8.07%	6.27%
Between 30 and 50 years	67.78%	68.07%	70.77%
Over 50 years	22.15%	23.87%	22.97%

Employees by race and type of employment GRI 405-1						
Race	Employees	%	Managers	%	Total	Total % in relation to total employees
White	5,862	92.96	444	7.04	6,306	82.85
Yellow	250	93.98	16	6.02	266	3.49
Indigenous	8	100.00	0	0.00	8	0.11
Black	235	96.71	8	3.29	243	3.19
Brown	729	96.17	29	3.83	758	9.96
Uninformed	30	100.00	0	0.00	30	0.39
Total	7,114	93,47	497	6,53	7,611	100.00



Curitiba - Smart Copel, Autor: Guilherme Pupo

New hires, hiring rate, dismissals and turnover GRI 401-1				
	Admissions / Reinstatements	Contracting rate	Dismissals	Rate of turnover
Under 30 years	12	32.43	18	0.18
Between 30 and 50 years	15	40.54	92	0.65
Over 50 years	10	27.03	560	3.46
Total	37	100.00	670	4.29
Gender				
Men	33	89.19	508	3.28
Women	4	10.81	162	1.01
Total	37	100.00	670	4.29
Geographic				
South Region	27	72.97	667	4.21
Southeast Region	6	16.22	0	0.04
Midwest Region	4	10.81	1	0.03
Northeast Region	0	0.00	2	0.01
Total	37	100,00	670	4,29

12.3. DIVERSITY

GRI 103-1, 103-2, 103-3, PRME 1, 2, 3, 6

12.3.1. Diversity and Diversity Standing Committee GRI 413-1

COPEL’s Diversity Program aims to promote diversity in the Company, in order to foster the search for equal rights, opportunities and recognition for all, with attention to vulnerable and discriminated groups. The Program is directly linked to the Standing Committee on Diversity, that determines which actions are priorities and how they will be implemented. It also seeks to provide and support internal actions aligned with public policies and movements geared towards diversity.

COPEL has had the Permanent Diversity Committee since 2015, with the participation of different areas of the Company, whose objective is to plan, execute and monitor actions focused on its six pillars: gender, race, accessibility, sexual orientation, age and religion. Annually, resources from COPEL (Holding) and subsidiaries are used to carry out the initiatives

and actions proposed by the Diversity Committee, which are revised every new period.

Throughout its existence, the Diversity Committee has contributed to the promotion of human rights, especially seeking to generate more egalitarian working relations. Diversity, therefore, represents an opportunity for COPEL to consolidate universal values in its practices.



“Diversity represents, for COPEL, an opportunity to consolidate in its practices the values of a universal.”

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Stimulating and managing diversity leads to greater productivity and employee engagement, better social, economic and financial performance, and helps to positively influence stakeholders to adopt best practices related to the subject. In addition, they minimize risks, such as non-compliance with Law No. 8,213/1991 (Quota Law); the absence of plurality of ideas; and low creative potential of the staff.

As access to employment opportunities at COPEL is done through a public tender, there is no distinction in the selection processes, and the risk of discrimination at this stage is avoided. Therefore, the focus of the Program and the Diversity Committee is in the Company's other processes. [GRI 102-15, 102-29](#)

The commitments entered into by COPEL with respect to the topic are:

- » Global Compact - UN
- » Inclusion of Persons with Disabilities MP / PR
- » Pro-Equity Gender and Race Program - Federal Government
- » Principles of Women's Empowerment (WEPs) - UN
- » ODS – Nós Podemos Paraná - ODS Brazil
- » Pact for Social Inclusion of Black Men and Black Women in the World of Work - MPT / PR

Among the initiatives focused on diversity at COPEL over the years, the following stand out:

12.3.2. Recognition of the Social Name

Since May 2016, COPEL has maintained the necessary administrative procedures to regulate the use of the company name by the Company's employees, in accordance with NAC 040130 and current legislation. This is a way of respecting the dignity of the human person and the equal conditions of access and permanence of these employees in any space. Currently, three employees use the social name.

12.3.3. People with Disabilities (PCDs)

As a publicly-owned, mixed-economy company, subject to public tenders for the admission of new employees, the Company is limited in relation to compliance with Law No. 8,213/1991 (Law of Quotas). In order to comply with legal obligations, COPEL establishes in its public tender announcements the distribution of differentiated percentages for the entry of persons with disabilities into occupations that guarantee accessibility and safety of new employees. COPEL must own 5% of its personnel in quotas for PCDs and rehabilitated by the INSS. In 2018 the Company reached 45% of the compulsory quota for persons with disabilities.

12.3.4. Religion

The Standing Committee on the Promotion of Diversity chose religion as a relevant topic, to be approached with constancy in the Company, because in a corporate environment composed of

different groups of society there is religious diversity. COPEL annually hosts lectures and forums on the subject.

12.3.5. Notable Women

In March 2018, the International Women's Day was celebrated, an online community, on the Copel intranet called Notable Women, which aims to honor professional women who have made - or still do - the difference to growth and the success of COPEL.

At the occasion, there was an event with the participation of several employees. The community will be constantly updated and expanded.

In the case of 2018, the main results obtained were the qualification of the management and employees of the Company, respectively in the matters "Diversity" and "Knowing the Person with Disabilities". There were also several events, such as prevention and orientation for cases of violence against women, focusing on domestic violence; training courses in the use of smartphones for seniors, lectures, among others. [GRI 102-21](#)

Another breastfeeding support room was inaugurated in Copel's facilities, in addition to the other six existing ones, one of the reasons why in 2018 the Company received a tribute from the Ministry of Health for its actions to encourage breastfeeding.

In a more detailed way, in the year mentioned, COPEL's Permanent Diversity Committee achieved the following results:

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- Leadership Development Program: 210 managers, approximately 40% of the managerial staff, completed the Diversity Discipline of this training program.

» Gender Pillar
- Holding of the event “Notable Women of COPEL”;

- Research on the perception and occurrence of sexual harassment at COPEL;

- Prevention and orientation event for cases of violence against women, focusing on domestic violence (November 25 - International Day for the Elimination of Violence against Women);

- Inauguration of another breastfeeding support room, now in Ponta Grossa, totaling seven rooms in the Company;

» Race Pillar
- Preparation of an Opinion with Guidelines for the Improvement of the Ethnic and Racial Quota System for COPEL’s upcoming Public Procurement Notices.

» 50 + Pillar
- Eight training courses on the use of smartphones for the elderly (200 trained people).

» Religion Pillar
- Conducted five lectures on “Religion, Relevance and Diversity: in search of meaning”, with the participation of 1,313 employees, of which 157 were face-to-face and 1,156 via the web.

» LGBT+ Pillar
- Participation of representatives of the Diversity Committee in events that discuss LGBT + topics.

» Accessibility Pillar
- Adequacy of COPEL’s facilities to make them accessible to people with disabilities in compliance with NBR9050 - Accessibility, including buildings, furniture, spaces and urban equipment. The adequacy process is continuous, happening according to the annual planning and specific demands.

- Training of 30% of the workforce through the EAD course “Knowing the Person with Disabilities”.

Annually, COPEL’s management performance in this area is assessed during the selection process for the Corporate Sustainability Index portfolio and in the execution of the Gender and Race Pro- equity Program.

The Company has been recognized for actions deriving from this work, receiving honors and awards, but there is still a way forward for a more prosperous and fairer future for all parties.

For 2019, the Committee set the following goals:

» Conduct research on tolerance to diversity, in partnership with higher education institutions, with the objective of gathering information to support more specific actions in the Company

» Completion of the EAD “Knowing the Person with Disabilities” by 100% of COPEL’s employees until December 2019

» Attendance to NBR9050 in 100% of COPEL’s facilities until December 2019

» Structuring of actions to prevent and refer cases of sexual harassment

» Structuring of the actions foreseen in the Pact for Inclusion of Blacks Men and Black Women in the World of Work

» 10% increase in the number of employees aged over 50 in the Corporate Program

» Offering the “LGBT + Diversifying Your World View: Concepts and Stories” awareness course to 100% of the staff

There are, among the actions performed and the proposed goals, voluntary and other mandatory actions, such as those directed by the Statute of the Person with Disabilities, provided for in National Law 13,146, of July 6, 2015.



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13. REMUNERATION AND BENEFITS

COPEL's careers and their respective remunerations are set out in the Structure of Careers and Remuneration document, based on market practices for position, function and level of training and qualification. The benefits and short-term variable compensation are established in the Collective Labor Agreement, which is annually carried out between the trade unions and COPEL. [GRI 103-2](#)

The Human Resources area is responsible for managing this process, which aims to:

- » identify positions and functions necessary for the development of the Company's activities;
- » define training required to perform the activities of each position and function;
- » establish levels of maturity and complexity of positions and functions to meet the demand of jobs;
- » establish rules of functional movement (vertical) and salary (horizontal) of employees;;
- » evidence of opportunities for growth and development in careers.

The ratio between the total annual compensation of the highest paid individual of the Company and the total annual average compensation of all employees is 7.06 (the total annual average compensation of all employees was calculated by the sum of the salaries of all employees, divided by the total number of employees, except for the highest paid ones). The variation between the lowest wage and the minimum wage¹² is 1.92 for men and women¹³. The percentage increase in compensation received in 2018, compared to the previous year, was 9.27% for the highest paid employee and 4.50% for other employees, considering salary, additional for length of service, agreement collective, additional due to the functions performed and integration of legal aid. [GRI 102-38, 102-39, 405-2](#)

Proportion of total annual remuneration GRI 102-38

Total annual remuneration of the highest paid person	458,777.85	7.06%
Total annual average remuneration of all employees	64,973.34	

Note: The total annual average remuneration of all employees was calculated by the sum of the remuneration of all employees, divided by the total number of employees, except for the highest paid employee.

¹² National minimum wage on 12/31/2018: R \$ 954,00. COPEL does not use a minimum wage as the basis for the definition of its wages.

¹³ The calculation of the proportion of remuneration is based on the salaries of full-time employees.

Proportion between the basic salary and the remuneration of men and women GRI 405-2						
Functional Category ¹	Base salary by gender (R\$) ²		Proportion between the basic salary of men and women	Average remuneration by gender (R\$)		Proportion of the remuneration of men and women
	Men	Women		Men	Women	
Middle Level Professional	1,834.84	1,834.84	100.00%	3,445.67	2,500.59	0.73
Technical Level Professional	3,332.71	3,365.98	99.01%	5,130.09	5,094.97	0.99
Higher Education Professional	5.214,73	5,112,07	102,01%	5,914,98	5.765,96	0,97

Note:

¹The Operational category was not included because it has only male employees.

²The lowest salaries paid in December 2018 for each career / gender were considered as “base salary”. As “Remuneration”, the average remuneration paid to employees included in the lowest salaries in December of that year was considered, in each career, plus 01/12 of the value of Profit Sharing concerned to 2018.

COPEL’s suppliers sign a Term of Science and Commitment, which seeks to ensure minimum standards of remuneration for the outsourced workforce and observe the working day, in accordance with labor legislation.

The benefits package offered by COPEL goes beyond what is envisaged by current legislation, and is compatible with that of companies that are references in people management, as evidenced by COPEL’s presence in the “150 Best Companies to Work For” ranking. The benefits are granted to all employees, regardless of their work hours. In order to demonstrate the annual amounts received by employees in financial and non-financial benefits, the Company annually publishes the COPEL Benefits Report (BBC). Through this document, the employee has a broad and concrete view of the benefits received, especially the financial ones, such as salary, additional, allowances, profit sharing, social security plan, food aid, daycare assistance, performance premium and health plan, among others . The BBC is available to employees on the SAP Portal. [GRI 401-2](#)

According to the latest BBC, the benefit that encompassed more people and mobilized resources in 2018 was *Vale Refeição/Alimentação* (Food Vouchers), with 100% of the employees assisted and R\$116 million spent.

The benefits policy is one of the Company’s attractions. The benefit package, including those extended to family members, can be found on page 186.

13.1. PARENTAL LICENSE

All COPEL’s own employees are entitled to parental leave. The company adopts the benefit of 6 months for women and 20 days for men. In addition, in the case of women, after the return of the license, the working day is reduced to 6 hours for 60 days, for breastfeeding. In 2018, 268 men and 91 women took advantage of the license, totaling 359 people. The rate of return to work after the leave period is 97.80%, with only 2 female employees not returning to work in 2018. Among men, this rate was 100%. In relation to the stay at the Company after 12

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months of leave, 88 women and 267 men remained, which is equivalent to a retention rate of 97.80% and 99.63%, respectively, in 2018. **GRI 401-3**

13.2. PLANO DE APOSENTADORIA

GRI 404-2

Through the COPEL Foundation, the Company guides its employees on how to make their financial planning for a more relaxed retirement. Viva Tranquilo, a financial and social security education program, seeks to make employees aware of the importance of a supplementary pension plan, which increases their reserve funds through extra intakes and contributions. It also encourages the employee to transfer his pensions from banks and insurance companies to the COPEL Foundation. On the Foundation page, the employees can simulate the value of their future benefit based on their current contribution and the extra contributions.

Viva Tranquilo also assists employees in their transition to retirement, addressing issues such as financial management and the importance of active living. In this sense, COPEL has maintained, since 1979, the Retirement Preparation Program (PPA), which provides guidance to employees who are able to retire. These orientations occur through lectures on social security education, consumer behavior and savings, entrepreneurship, quality of life and health. In 2018 the PPA gathered at the Oscar Niemeyer Museum in Curitiba, 207 employees who left COPEL during the year for an appreciation and thanks event. The Program is being remodeled to 2019.

The theme of retirement is also addressed annually in the lectures promoted by the Internal Commission for the Prevention of Accidents (Cipa).

Volunteer Dismissal Plan (PDI)

Circular 103/2017 established, on December 22, 2017, the criteria for the PDI. From January to December 2018, 563 employees joined the incentive retirement plan, leaving the Company.



Curitiba - Smart COPEL | Author: Guilherme Pupo

14. PERFORMANCE MANAGEMENT

14.1. PROFESSIONAL DEVELOPMENT

GRI 404-2

The professional development of employees is considered a strategic factor for COPEL, as it favors increased productivity and increased competitiveness, and enhances well-being and security for all.

Nossa Energia (Our Energy) is a corporate program that establishes a standardized way to track and evaluate employee performance. It consists of two axes: Organizational Competencies, related to the expected behaviors of each employee, and Results, related to business goals. The program subsidizes decision-making, based on meritocracy, regarding promotions, functional adequacy, participation in conferences, training, graduate programs and foreign language courses, among others.

Initiated in 2013, the initiative has evolved and, each cycle, promotes learning and improvements of the model, gaining greater adherence to the culture and reality of the Company. In 2018, 100% of the employees with more than three months in the Company, who were not in the process of retiring or retired and who worked at least 60 days a year, participated in the process.

Throughout the program, the Calibration Committees were created, aiming to align the understanding of the evaluators with regard to the comprehension of the assessment questions, in order to reduce the subjectivity in the process of analyzing the employees' performance. Calibration takes place in two stages, the first of which is a pre-evaluation, focused on reviewing the program guidelines and guiding managers on the process and the appropriate management posture. The second stage occurs after the performance evaluation through the Nossa Energia Program. The people management area carries out a survey and study of the results of that cycle and proposes management analysis criteria, which are validated by a committee composed of the superintendents and the manager of the Department of People Management. Following this, the selected managers present to the Committee the arguments

and contextualization of the evaluations carried out, which is the basis for the analysis of each case and the committee's deliberation on the development agreements for the manager.

GRI 103-3, 404-3

Employees who participated in performance evaluation by gender and functional category GRI 404-3			
	Evaluated employees	Total of own employees	Percentage
Male	5,842	5,924	78%
Female	1,661	1,687	22%
By Functional Category			
Middle level Professional	4,243	4,311	57%
Technical Level Professional	1,845	1,857	24%
Higher Education Professional	1,349	1,376	18%
Operational	66	67	1%
Total	7,503	7,611	99%

Note: 100% of employees subject to performance evaluation went through the process in 2018. 99% do not consider 108 employees who were exempted from the evaluation for the following reasons: adherence to the Incentivized Resignation Plan (PDI) and condition of employees reintegrated, Specialized Personnel (QEP), retired and licensed.

Relocation Program

The search for new opportunities and challenges is disseminated transparently through the Deployment Program. The opportunities are made available in the Employee Portal and disclosed by e-mail, allowing those interested in changing roles, area or locality to apply for the vacancy. This practice makes it possible the appreciation and enhancement of human capital within the Company, with equal opportunities for employees in the process of moving.



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Talent Bank

Implemented in order to prepare successors for the current leaderships, COPEL Distribuição's Talent Bank allows the identification of employees with the potential to assume a leadership position at a higher level, through criteria such as performance, potential, maturity and time for retirement. To enhance performance and professional maturity, the identified talents participate in specific development actions, such as mentoring and coaching, for example. In 2018, the Talent Bank registered 367 potential leaders able to fill vacancies such as division managers, department managers, or superintendents. In that year, the number of mentors increased from 47 to 52, an increase of approximately 10% over 2017.

Talent Management

At COPEL Geração e Transmissão, the Talent Management program aims to improve the process of people management, to provide recognition, valuation and development of employees. The program maps potential talent to strategic functions (supervision, project coordination, representing COPEL in external events) and implements competency development actions such as: cumbuca method, coordination / participation in work groups, temporary substitution of manager, coaching, participation in courses, trainings or seminars focused on developing technical-functional and / or relational skills.

Currently, the program has 112 participants. 8 employees participated in the cumbuca method, 24 employees participated in coaching sessions, 61 employees participated in training focused on developing technical-functional and / or relational skills and 19 employees temporarily replaced their managers. Other development actions such as mentoring and feedback will be implemented in 2019.

14.2. TRAINING AND QUALIFICATION PROGRAMS

GRI 404-2, EU14, PRME 1, 2, 3

The Corporate Education Policy establishes the guidelines for the promotion of actions ranging from basic training to postgraduate and research courses. These actions are organized in corporate programs, training (basic training for the exercise of the function), mandatory training (courses intended for specific activities), training for professional improvement, events (seminars, lectures, workshops, congresses, etc.) and research and development projects. Information on the COPEL Corporate Education Policy is available on the sustainability page at the Company's website.

The training related to the Integrity Program, sustainability, leadership and preparation for the future, among others, is under the responsibility of UniCOPEL Corporate University.

COPEL also promotes courses with internal and external instructors on topics related to quality management, processes and projects, and on tools to support this management. The Company also runs a foreign language training program for employees who use another language in their work activities, in which 78 people attended courses in German, Spanish and English in 2018. It also invests in lato and stricto sensu postgraduate courses for professionals who need to deepen their knowledge in their area of activity, benefiting eight employees in 2018.

The Transforming Leadership program, implemented in 2016, was continued in 2018 with the objective of forming leaders prepared for the responsible management of business and people, with attention to the well-being and development of the teams. The new managers, who had not yet participated in any activity in 2017, participated in face-to-face activities, in line with the new culture that has been built at COPEL. Also, distance courses were carried out for the entire management body, on topics relevant to the Company, such as diversity, sustainability, innovation and emotional management. In addition, a meeting was held among all the leaders, in which the directors discussed with the management team strategic themes for business success.

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Also in 2018, COPEL began planning a management succession program with the participation of representatives from all business areas, coordinated by the Corporate University. The program project was presented to the Business Management Board at the end of 2018 and will be implemented throughout 2019.

Since 2016, COPEL has signed, through a public call notice, partnerships with educational institutions that are interested in granting benefits to its employees, some of which extend to dependents. The partnerships include basic, higher and vocational education, and qualification and professional development courses. Until December 2018, COPEL had 59 institutions, of which 35 were universities, 16 language schools, 5 elementary and high schools, and 3 free courses.

In 2018 UniCOPEL made available to the employees the course “preparation of instructors” in the distance mode, in order to qualify technical professionals to act in the classroom.

15. INVESTMENTS IN HUMAN CAPITAL

In 2018, R\$ 8.3 million was invested in training and development of people. In all, 3,020 training events were held, with 27,050 participations, totaling 333,500 hours of training, an average of 43.81 hours per employee.

Average hours of training by gender GRI 404-1			
	Total of employees	Hours of training	Average hours of training
Men	5,924	274,100.35	44.67
Women	1,687	59,354.26	29.50
Total	7,611	333,454.61	43.81

Average hours of training per functional category GRI 404-1			
	Total employees	Hours of training	Average hours of training
Medium Level Professional	4,311	129,971.40	30,15
Technical Level Professional	1,857	111,921.72	60,27
Higher Education Professional	1,376	85,629.07	62,23
Operational	67	4,150.59	61,95
Total	7,611	331,672.78	43,58

Note: the total number of hours of training is less than that shown in the table “Average hours of training per gender” because it does not take into account the hours of training of the Board of Directors, the Counselors and Trainees.



Paranaguá, Rodrigo Felix



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16. HEALTH AND SAFETY AT WORK

GRI 103-1, 103-2, 103-3, 403-1, EU16

Occupational health and safety are considered fundamental themes for the sustainability of the Company, so much that they are part of its strategic reference. COPEL values and respects the human being in its entirety and puts life always in first place, Health and safety directly impact on the welfare and employee satisfaction, as well as on their productivity and readiness. On the other hand, accidents, when they occur, entail costs for the Company.

Each COPEL subsidiary has a specific area responsible for occupational health and safety management. It is carried out through the anticipation, recognition, evaluation and monitoring of risks in establishments. At COPEL (Holding), there is a coordinator responsible for integration of these areas and creation of corporate policies, norms and procedures. The area of occupational medicine is centralized in this coordination and serves the whole Company, promoting health actions integrated to work safety. These teams are composed of technicians and safety engineers, doctors, and occupational nurses and nursing assistants. In addition to these professionals, the entire managerial framework, as well as contract managers, inspectors, supervisors, Internal Accident Prevention Commissions (CIPAS) and Fire Brigades also play an important role in safety management. 100% of COPEL's employees are represented by the CIPA.

The main guidelines for action come from the [Occupational Safety and Health Policy](#), which must be followed by the entire Company and its subsidiaries. The document indicates that everyone is responsible for safety, health and well-being and that all accidents can be avoided, it also states that nothing justifies breaking the safety rules and it is everyone's commitment to eliminate risk situations. Safety, according to policy, should be part of every moment, both inside and outside work. Health and Safety are made with knowledge, commitment and attitudes integrated.

This document was drafted by the health and safety areas of work in conjunction with other COPEL areas and approved by the Executive Board. Its guidelines are in compliance with international standards such as the International Electrotechnical Commission (IEC), National Fire Protection

Association (NFPA) and International Labor Organization (ILO). This and other policies related to occupational health and safety are updated whenever necessary, with a maximum term of three years.

The strategic objectives of this management are to promote a healthy work environment, in which workers collaborate with a process of continuous improvement of the protection and promotion of the safety, health and well-being of all; comply with legal requirements and disseminate a culture of prevention; work safety; and promote a culture of safety, health and quality of life.

Outsourced Employees

The outsourced professionals of any and all service contract must follow, in addition to the policy guidelines, the Manual of Occupational Health and Safety, Contractually, outsourced companies must apply the guidelines set forth in the Guide to Safety and Health at Work Guidelines for contracted companies (available online) and demonstrate satisfactory performance in relation to the health and safety management of its employees.

This guide establishes guidelines for the implementation of control measures and preventive safety systems in the processes and for the environmental conditions of work of service providers, in accordance with the provisions of current legislation and internal standards related to occupational safety and health.

COPEL also undertakes commitments related to the subject, such as the requirements for obtaining OHSAS 18001 (Occupational Health and Safety Management Systems). In 2018 the Governador José Richa (Salto Caxias) and Governador Ney Aminthas Barros Braga (Segredo) Hydroelectric Power Plants won the certification.

Annually, the Company promotes campaigns that address issues related to the main health and safety risks to which it is subject, including awareness activities, education and orientation of employees and service providers for the prevention of occupational accidents and diseases.



Cascavel, Author: Carlos Borba

Specific programs and actions are also conducted, such as Occupational Health and Safety Management (GSST); Preserving Life (PPV) and Behavioral Verification (VCO), which are focused on the field inspection of employees and service providers hired by the Company; and sector security meetings, in which employees discuss periodically matters related to safety and accident prevention. Through the Hunt for Risk initiative, any employee can register a risk or near accident to be analyzed by Cipa, with the support of the health and safety area.



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Workers receiving training in health and safety at work GRI EU18			
	Copel (Holding)	Copel DIS	Copel GeT
Total contracted and subcontracted workers who underwent health and safety training	384	4,409	1,691
Construction activities	0	1,350	895
Operating Activities	0	399	796
Maintenance activities	384	2,660	0
Total employees hired and subcontracted per company	384	5,820	1,691
Percentage of hired and subcontracted employees who have undergone health training and security	100,00%	75,76%	100,00%

Annually, each subsidiary defines its goals and objectives, which are broken down into corporate goals. They are voluntary, but in some cases, classic indicators are used, which have reference standards. There are Targets for Frequency Rate (TF), Rate of Severity (TG), Safety Commitment Attendance Index (IACS), inspections, valid Occupational Health Certificate (ASO), and absenteeism rate. The objectives are to reduce accidents and absenteeism.

The annual targets are defined during the strategic planning that takes place between the months of October and November of the previous year. There are also monthly targets of indicators, whose consolidation contributes to the annual result. Performance is analyzed and consolidated monthly. The evaluation is made both internally and by third party. Also a benchmarking is done with other companies, through the Coge Foundation and participation in awards of the electric sector, COPEL's health and safety at work rates are within the industry average.

Preparation for e-Social

In 2018, information was prepared for the implementation of occupational health and safety events in the Digital Bookkeeping System for Tax, Social Security and Labor Obligations (eSocial), established by Decree No. 8,373, dated December 11, 2014, the system by which companies will inform the Government, electronically and unified, of the data related to workers, such as bonds, social security contributions, payroll, work accident communications, prior notice, tax deeds and information on the FGTS.

The events related to Health and Safety of Work should be sent to eSocial from July / 2019, The sending is mandatory and non-compliance will be subject to a fine. The work safety areas of the wholly owned subsidiaries, together with the area of COPEL (Holding), are involved so that all information is made available in a correct and timely manner.

16.1.1. Health and safety at work

Training and qualification

GRI EU16

Employees are offered programs such as Training of Field Inspectors and Preliminary Risk Analysis - APR in Focus, which aim at an active prevention, to identify and block the agents of work-related illnesses and accidents.

Health promotion

COPEL DIS has an occupational health service and offers its employees, through the COPEL Foundation, an agreement to conduct diagnostic tests for diseases that may affect their capacity and productivity at work.

Health and safety committees

GRI 403-1

In addition to the Cipas, COPEL maintains employees' commitment to health and safety through monthly meetings, by department and locality, known as Safety Sectors.

In these meetings, employees present issues related to preventive and corrective actions identified in daily activities, in addition to other points of improvement for well-being and satisfaction. The Setorial representative takes these matters to Cipa's appreciation, which returns with the solutions to be adopted. Weekly also takes place the meeting of Control

Risk, when people gather in their areas briefly to exchange information and reminisce attitudes that prioritize security on a day-to-day basis.

These various actions add up monthly points and the departments with the highest score in the quarter are awarded in the Safety Trophy.

Training and integration for outsourced

GRI EU16

Employees of contractors participate in minimum compulsory training for the execution of fieldwork with electricity, called Integration in Health and Work Safety. These professionals also attend the lecture on Risk Analysis for the activity in question.

It is possible to perform field activities only the outsourced employees who have participated in the training. The mandatory minimum control for works with electricity is carried out with own application, which contains information about the employees of the contractors and the contracts

Participation in the Rodeo of the Electricians

COPEL encourages the participation of its electricians in the Rodeio dos Eletricistas, a technical competition held first internally, with electricians from all regions of Paraná, and later at the national level, in dispute with teams of electricians from different electric power concessionaires from the country.



Author: Erika Yuriko Nishimura



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The Rodeo is a playful way of valuing electricians, encouraging integration, improving care with work safety and sharing experiences and knowledge. COPEL DIS was the champion of the national rodeo in the 2010 and 2014 editions. In 2018, with the first place in grid activities.

Preserving Life Program (PPV)

Initiative to supervise, in the field, the technical and safety procedures during the execution of the activities, in accordance with the Occupational Health and Safety Management (GSST) standards. A work or area safety technician performs the monitoring of the teams and issue report with score of the found failures.

Due to the high turnover of contracted employees and the characteristics of the contracts, there is no specific way to determine the percentage of trained contractors, however, the Company adopts as a rule the implementation of security integration training for all its contractors.

Healthy Pregnancy

COPEL believes that strengthening the family bond is fundamental for the balance of the individual, especially in the first months of the children's lives. For this reason, extended the legal rights of COPEL with the extension of maternity leave in 60 days and the implementation, on return of leave, of a reduced working day from 8 hours a day to 6 hours a day for a further 60 days, as an incentive to breastfeeding.

Still as a stimulus, COPEL installed in its main polos a Breastfeeding Support Room, an exclusive and comfortable space where mothers can collect and store the milk properly. Users receive a kit with instructions on storage, glass bottles and a thermal bag for the correct transportation of the containers.

Reduction of working hours

Beginning in 2018, the COPEL now have a new benefit: the possibility of reducing the working day from eight to six hours for those who prefer to invest in more free time or personal projects.

Although the reduced working hours will decrease by 25% of the salary, the opponents will not have reduced the participation in the profits, the benefits of food aid, the snack ticket and the 13th of the food aid.

Encouraging physical activity

For COPEL, sports practice is important not only for individual well-being but also as an element that can promote healthy relationships and greater integration among employees and, consequently, improvement of the organizational climate, it also promotes health benefits and the improvement of the quality of life.

The Company has held the COPEL Internal Games (JICs) since 1974, with more than 20 sports, individual and collective. The disputes

occur among the employees of the different regions of Paraná, distributed according to their stocking area, to facilitate the participation of the number of athletes, the games are carried out in two phases, each stage having an average of 400 participants. The programming of the JICs also includes the Cultural Moment, in which are played the modalities of ballroom dancing, free dance and music interpretation.

The programming of the JICs also includes the Cultural Moment, in which dance, free dance and music interpretation modalities are played.

The Corrida and Rustic Walk in Atuba - Curitiba neighborhood where one of the poles of the company is located - is another traditional sporting event of the Company, which annually brings together approximately 450 participating athletes each December. In addition, Copel supports the participation of its employees in external events, such as street races and the Games of SESI.

COPEL also provides two electric bicycles for its employees to try out this new modal to return home through the Power Bike Application. The Company also encourages the use of alternative means of transportation on Bike to Work Day and on World Carless Day.



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APR Easy - Application for preliminary risk analysis

Since 2017 COPEL has been using the APR Easy application, which enables the registration of preliminary risk analyzes in mobile computing devices (tablets).

The preliminary risk analysis (APR) is mandatory prior to the execution of any activity that interferes with the electrical system and aims to make professionals plan their activities from a safety point of view, prioritizing risks and taking the necessary measures to avoid them.

In addition to the digital registration of the APRs, the application allows the traceability, georeferencing and its linkage with other COPEL systems, which has contributed to the reduction of the emission of documents in printed paper, which require physical archiving.

Chemical Dependency Program

With a focus on preventive and therapeutic aspects of health, COPEL implements the Chemical Dependency Program, with which it promotes actions to improve the conditions of health, well-being and productivity

of the employee, contributing to the quality of life, reduction of risks of work accidents, absenteeism, medical expenses, disciplinary measures, low performance, among others. The initiative is led by a group of work composed of professionals in the areas of occupational health and social work and includes the internment of the employee, sessions of therapy and psychiatric consultations, besides the monitoring by the social service.

COPEL fully funded the first employee's hospitalization, including medication prescribed for treatment, over a period of 90 days, plus 48 sessions of psychotherapy with psychologists and / or specialized psychiatrists for the employee and 24 sessions for the family. The whole process is guided by internal regulations (NAC 040120 and IAP 040120-1).

For more information on the health and safety practices of COPEL Geração e Transmissão and COPEL Distribuição, access the Social-Environmental and Financial Responsibility Reports of these subsidiaries.

[COPEL Distribuição Social-Environmental and Economic-Financial Responsibility Report](#)

[COPEL Generation and Transmission Social-Environmental and Economic-Financial Responsibility Report](#)

16.2. PERFORMANCE IN HEALTH AND SAFETY AT WORK **GRI 403-2**

Indicators of health and safety at work - own employees															
	Frequency rate (injuries)			Occupational disease rate			Absenteeism rate			Number of fatalities (deaths)			Number of days lost		
	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018	2016	2017	2018
HOL	0.00	0.00	0.00	0.00	0.00	0.00	1.48	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00
GeT	3.26	1.90	2.29	0.00	0.00	0.00	21.00	1.46	1.87	0.00	0.00	0.00	21.00	46.00	30.54
DIS	7.48	6.69	7.26	0.86	0.51	0.76	2.80	2.83	3.35	0.00	0.00	0.00	2,155	1,190	2,263
CTE	0.88	0.86	2.02	0.00	0.00	0.00	1.18	1.14	2.84	0.00	0.00	0.00	0.00	0.00	0.00

Health and safety at work indicators - outsourced employees				
	Copel (Holding)	Copel GeT	Copel DIS	Copel CTE
Rate of injury	2.60	4.14	10.22	7.57
Number of deaths	0	1	1	0



Author: Daniela Catisti



intellectual capital



17. INTELLECTUAL CAPITAL

17.1. RESEARCH, DEVELOPMENT AND INNOVATION

GRI 103-1, 103-2, 103-3, EU8, PRME 4

Innovation is seen as a competitive differential between companies and it is through it that new opportunities are discovered or exploited. Its practice is necessary for a company not to be marginalized. For this reason, research and development (P&D) are a fundamental part of COPEL's activities, included in its Business Plan, Strategic Planning and management practices as a way of seeking innovation.

For the electricity sector, P&D investment is also a regulatory requirement, established by Federal Law 9,991/2,000 and supervised by the National Electric Energy Agency (Aneel) for the improvement of generation, transmission and distribution services. It is mandatory that the electric power companies devote part of their net operating revenues (ROL) to this activity. The separation of this amount must be made monthly, to compose the balance to be invested.

Aneel's initiative is called the Research and Technological Development Program of the Electric Energy Sector (ProP&D). Through this program, the agency provides a manual to guide P&D activity by companies:

- » FA - Alternative sources of electricity generation

- » GT - Thermoelectric Generation
- » GB - Management of basins and reservoirs
- » MA - Environment
- » SE - Security
- » EE - Energy efficiency
- » PL - Planning of electric power systems
- » OP - Operation of electric power systems
- » SC - Supervision, control and protection of electrical energy systems
- » QC - Quality and reliability of electric power services
- » MF - Measurement, billing and commercial loss control
- » OU - Other

The projects developed by COPEL are in line with the ProP&D guidelines, but are always linked to the Company's interests, based on demands arising from daily problems, the need for new technologies or the construction of low-cost generation projects, among others. From the point of view of COPEL, P&D investments are not only a legal requirement, but opportunities. With the natural evolution of this practice, projects have achieved results that can be effectively used or marketed (see pp. 89-91).

Each project has its own schedule, but the deadlines for completion are regulations by Aneel. The commitments already made must be fulfilled by January 2021. With the completion of the projects, a reconciliation of all the entries made and accounted for will be done, basis for a third-party accounting audit. Information related to this verification, added to the technical information, is sent to Aneel, which evaluates and recognizes the investments made as P&D projects. If a project is not recognized, the value invested must return to the initial balance.

The teams responsible for research and development management at COPEL are the Innovation Coordination and the P&D areas of COPEL Distribuição and COPEL Geração e Transmissão, each with its own manager and six, nine and seven employees, respectively. Management is done via the SAP system, Initial Project Proposal (PIP) and Project Formulary (FPD). The subsidiaries' P&D areas support the management of the initiatives, including initial hirings, management of monthly payments and monthly verification of financial statements.

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To accompany the development of P&D programs, the Innovation Coordination created the Innovation Portal, which gathers all the information about the budget execution of the projects under development. In addition to allowing follow-up, the Portal serves as a support tool for project managers, which, on the basis of available information, may define measures for the adequacy of investments.

All the premises, characteristics and responsibilities of the management of the P&D projects are established in a specific corporate policy, outlined by the Innovation Coordination and in the process of approval. This policy follows the guidelines of the best practices of the sector.

The P&D indicator accompanied by the COPEL Innovation Coordination is the number of patents deposited. 23 applications have already been filed with the Instituto Nacional de Propriedade Industrial – INPI (National Institute of Industrial Property - INPI). COPEL also has two international patent applications in the United States and Europe, via the Convention of the Union of Paris (CUP), the number of patents deposited in the INPI increased significantly, jumping from one in 2016 and 2017 to five in 2018.

COPEL Geração e Transmissão applied R\$22.9 million to execute 28 P&D projects in 2018, of which seven are strategic, with themes established by Aneel through Call for Strategic Projects. In another ten projects, COPEL GeT participated in cooperation with

other companies in the electricity sector. The subsidiary also invested R\$414.4 thousand in the management of its P&D projects, totaling R\$23.3 million destined to the activity in 2018.

For the next three years, COPEL GeT projects an investment of R\$115 million in new P&D projects applied to its generation, maintenance and resource management processes. Projects must be executed in at least ten university poles, eight institutes of research and nine national technology companies. These projects will be approved by an evaluation of the company's P&D Committee and / or public call managed by Aneel. Participating institutions will have up to five years to execute, as defined in the Research Program Procedures and Technological Development of the Electric Energy Sector (PROP&D).

.....
"COPEL's goal is to invest R\$52 million over the next three years in innovative projects to generate renewable energy and replace equipment to make more efficient the use of electricity."



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17.2. INVESTMENTS IN P&D GRI EU8

Resources applied in research and technological and scientific development								
By research topics (Research and Development Manual - Aneel)	COPEL DIS				COPEL GeT			
	2017		2018		2017		2018	
	VALUE (R\$)	(%)	VALUE(R\$)	(%)	VALUE(R\$)	(%)	VALUE (R\$)	(%)
Power Storage	348,722.36	2%	6,544,890.40	21%	-	-	-	-
Energy Efficiency	-	-	-	-	532,572.24	3%	377,760.88	2%
Renewable or alternative source	742,668.58	4%	8,060,862.30	26%	2,545,504.14	14%	5,872,962.32	25%
Environment	1,095,404.17	6%	661,324.72	2%	1,997,399.46	11%	2,410,050.99	10%
Quality and Reliability	-	0%	1,541,108.22	5%	53,541.12	0%	2,261,926.72	10%
Planning of electric power systems	767,103.58	4%	136,831.63	0%	1,214,337.24	7%	1,185,022.24	5%
Supervision, control and protection	6,044,266.21	33%	5,678,168.47	18%	2,979,309.77	16%	2,076,662.96	9%
Measurement	829,008.68	4%	1,516,63.46	5%	0.00	0%	0,00	0%
Transmission of data via electric network	-	-	-	-	-	-	-	-
Management of basins and reservoirs					1,346,063.64	7%	1,639,611.21	7%
Safety	4,581,564.51	25%	3,093,918.17	10%	2,207,447.55	12%	1,662,524.99	7%
Operation of electric power systems	2,181,413.74	12%	1,926,579.23	6%	4,567,137.64	25%	2,898,301,71	12%
Other	1,005,429.47	5%	1,530,574.23	5%	454,227.12	2%	2,483,179.61	11%
PD & I Management	852,640.50	5%	191,98.87		590,161.20	3%	414,393.44	2%
Total investments in P&D	18,448,221.80	-	30,882,882.70	-	18,487,701.12	-	23,282,397.07	-

Note: the investment data for 2017 did not undergo external verification, only data for 2018.

	2017	2018	%
Total investments in P&D	36,935,922.92	54,165,279.77	46.65%

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COPEL started in March, in Ipiranga, a city at 50 km from Ponta Grossa, the installation of self healing systems (grid reconfiguration systems), automatic voltage regulators and other devices that made the municipality in 2018 the first Brazilian city to have all of its territory covered by smart grids - which includes the installation of smart meters at more than 5,000 points of consumption. Similar to the North American and Japanese systems, the smart grid model implanted in the municipality represents the apex of more than ten years of pilot projects and concept tests that the Company has been applying on a small scale in its concession area.

In 2018 a tender was issued for the contracting of services and devices, for the installation of this format of intelligence grid in São José dos Pinhais, in the Metropolitan Region of Curitiba. With 126 thousand points of consumption, this location will represent another important step towards automation of the electric system of Curitiba and other large cities.

The integration of grids by information and telecommunication systems is the first step in integrating other services in the future, such as distributed microgeneration, energy storage, electric car supply and public services, such as street lighting and intelligent traffic lights, COPEL has R\$70 million invested in research projects.

17.3.2. Smart Grids

Through the Mais Clic Rural Program, COPEL has been modernizing the networks in the field, with a total investment of more than R\$500 million over three years. The initiative incorporates innovations that are the result of more than a decade of operations testing of intelligent networks and includes automation and remote control of the electric network, installation of smart meters and pioneering research and development projects in Brazil.

In addition, COPEL put into operation in June the third compact substation of the program, located in the municipality of Ivaí, a region with a strong

presence of tobacco crops and family agriculture. R\$3 million were invested in the project.

The Ivaí Substation is automated and operates at a voltage of 34.5 kV, with four feeders installed to distribute power to the urban and rural households located in the region. In case of failure in the main source, the set is capable of re-establishing the supply through a circuit alternative power supply, which increases the reliability of the system as a whole. Soon, the unit will be equipped with a bank of voltage regulators, which will provide even greater stability to the supply.

17.3.3. Electro via

In 2018, COPEL inaugurated one of the largest electro vias in the country, with eleven hydroelectric plants that will connect Paraná from east to west, from the Port of Paranaguá to the Iguaçu Falls, and are already operating in Paranaguá, Curitiba, Irati, Foz do Iguaçu, Palmeira, Fernandes Pinheiro, Guarapuava, Cândói, Ibema, Cascavel and Matelândia, Electro via is a stimulus to the chain of production and commercialization of electric vehicles.

The next project planned by the Company is the implantation of an electro via that runs all the Brazilian coast.

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17.3.4. Virtual reality

In March 2018, at its operational center in the Mossunguê neighborhood (Curitiba, PR), COPEL carried out the demonstration of a virtual reality program geared to the work of electricians in risk situations, as a result of a research and development project carried out by COPEL in partnership with Lactec Institutes and the Federal University of Paraná, the program combines virtual reality technology with learning theories and challenge techniques inspired by the world of games.

Dozens of COPEL employees were able to simulate the work done through the energized networks of an energy substation. Scheduled to be completed in 2019, the program will simulate work in critical situations, conditioning the electrician's actions in routine procedures and also provoking their attention to unexpected situations.

17.3.5. Renewable energy in universities

Over the next three years, innovative projects for the generation of renewable energy and replacement of equipment to make more efficient the use of electric energy will be carried out in five universities in Paraná, approved in open public call for Energy Efficiency and Research and Development of COPEL, under Aneel regulation.

For the first time, the call links efficiency projects to research proposals in higher education institutions. The idea is that the

22 projects approved throughout Brazil in this experiment, which is unprecedented, serve to formulate public policies to combat waste of electricity in consumer units of all spheres of public administration.

In Paraná the works will be developed by the Federal Universities of Paraná (UFPR), State University of Londrina (UEL), State University of Maringá (UEM) and Federal Technological University of Paraná, in Curitiba and Pato Branco, totaling an investment of R\$52 million.

The institutions will have one year for the execution, followed by the one-year period for the monitoring of the results. The research and development work will have a term of three years for the execution. .

Among the actions that should generate savings in energy consumption by institutions, the highlight is the replacement of 71 thousand lighting points and the installation of photovoltaic panels that generate electric energy through the incidence of solar rays, adding a capacity to generate order of 2.2 thousand kWp.

There is also a forecast of 40 air conditioners and water distillation units being exchanged at the State University of Londrina, which will also work with research in the area of biogas generation, with a unit that will have 120 kW In addition to resulting in the reduction of light bills of universities, the projects should form new habits of consumption.

17.3.6. Commercial technical arrangement of distributed generation of electric energy from biogas of swine residual biomass

The proposal of this project is to boost the generation of electricity from biogas in Brazil, especially in regions with a high concentration of organic waste produced in a decentralized manner and without adequate treatment. Many small Brazilian municipalities, of rural economy, do not have technical and economic conditions to sustain sanitation and, therefore, have available raw material for the generation of this product.

The project aims at mitigating environmental liabilities, preserving water resources, energetic recovery of swine farming, promoting the environmental and energy sustainability of agribusiness, adding value to rural property and stimulating the creation of a new economy, savings in energy consumption by institutions include the replacement of 71,000 lighting points and the installation of photovoltaic panels that generate electricity by means of the incidence of solar rays, with a generation capacity of the order of 2.2 thousand kWp.

There are also plans to exchange 40 air conditioners and water distillers at the State University of Londrina, which will also work with research in the area of biogas generation, with a unit that will have 120 kW of power.

In addition to resulting in the reduction of light accounts of universities, projects should form new consumption habits.

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Ruptures of earth dams are often caused by regressive tubular erosion, which is a type of internal erosion. The proposed system, composed of an optical fiber distributed inside the mass of earth at different levels, to the point of involving the body of the structure, innovates in the field of instrumentation of dam monitoring, since it allows to measure the water flow in a distributed and non-punctual way, as in conventional methods and instruments.

System allows to identify the position of the anomaly and quantify its magnitude to each meter of the fiber optic cable. Thus, it is possible to carry out a three-dimensional mapping of the interior of the dam in order to detect in advance anomalous regions to the limit conditions foreseen in design, which allows to intervene correctively to contain the advance of the erosive process.



Image Bank



social and relationship capital



18. ENGAGEMENT WITH RELATED PARTIES GRI 102-21, 103-1, 103-2, 103-3

It is important that COPEL constantly communicate its mission and values in order to maintain the commitment of all its stakeholders to these premises. It is also important that the Company always listen to its stakeholders: understand the characteristics of surrounding communities, the yearnings of shareholders, the expectation of employees and the opinion of clients and suppliers, in order to maintain its standard of excellence and meet the expectations of these publics, COPEL is the largest company in Paraná and therefore must adequately fulfill its role in the area of Social Responsibility.

COPEL can positively impact its stakeholders by developing the local economy, improving the quality of life of vulnerable communities, offering opportunities for socio-cultural development and employability. On the other hand, if it does not act within its values and in compliance with the legal provisions and their norms and standards, COPEL may negatively impact them in social, cultural and environmental terms. This also has consequences for the Company, such as the receipt of notices, the Terms of Conduct Adjustment (TAC) and of fines, which can generate loss of revenues. For this reason, COPEL avoids to the maximum cause negative impacts.

The formal document that deals with how COPEL engages with its stakeholders is the Sustainability Policy, which includes the following guidelines:

- » Promote transparent, regular and structured dialogue with stakeholders, considering their demands, priorities and expectations.
- » Acquire sustainable products and services and promote actions that encourage the supply chain to seek sustainability.
- » Respect the principles of free and fair competition. GRI 206-1
- » To value the contributions of the communities in the regions of insertion of COPEL's businesses and to promote local sustainable development with the generation of shared value.
- » Foster actions that encourage the safe, efficient and sustainable use of your products and services.
- » Report periodically or whenever necessary the relevant information, adapting languages and media to the needs of different stakeholders.

The Sustainability Policy was prepared by professionals in the areas of sustainability,

environment, social responsibility, corporate integrity, innovation, financial and management. Professionals from the wholly-owned

subsidiaries were also involved, in a work coordinated by COPEL's sustainability area. Its guidelines are based on the commitments made to sustainable development (see page 61), the principles of Corporate Governance and the values and principles of the COPEL Code of Conduct, the policy is reviewed and updated every two years.

The engagement is achieved through dialogue with each stakeholder, through the Ordinary General Meeting (AGO), the internal and external communication channels and media, the integrated report itself, the website, the Investor Relations area, of the engagement varies according to the specific demands of each public. Responsibility for managing this activity is shared by several areas of the Company, depending on the particularities of the relationship that must be maintained.

18.1. VOLUNTARY COMMITMENTS

PRME 1, 2, 3, 6

COPEL exceeds regulatory requirements related to stakeholder engagement, since it has undertaken a series of external commitments on the subject. In addition, it has signed its own commitments for the benefit of society and the sector.

Each year goals are set for COPEL's actions in these commitments. All targets for 2018 have been met. Within the Cities Program of the UN Global Compact, the objective was to increase the number of municipalities adhering to the Pact and innovative projects aligned with the



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ODS. This number jumped from 15 to 41 in 2018. Community vegetables gardens were set up in the municipalities of Cascavel and Ponta Grossa, which, together with Maringá, benefited more than 660 participants. In 2019, the goal is to expand the program to the municipality of Curitiba.

The Solidarity Selective Collection program, which promotes the allocation of solid administrative waste to associations and cooperatives of recyclable material collectors, has allocated 92 t of waste, financially supporting approximately 420 families, ranging from 69% to 74% in the state of Paraná. In Corporate Volunteering, the number of volunteers has been increased from 338 to 367 and institutions registered in the public call, which selects non-profit social institutions, educational institutions and Non-Governmental Organizations (NGOs) to attend events, fairs and activities. volunteering, went from 43 to 50. The actions of corporate volunteering reached 7,500 people.

GRI 413-1

COPEL Sustainability Award - Susie Pontarolli Trophy GRI 413-1

In 2018, the fourth edition of this award was held, which recognized social institutions and suppliers that presented significant socio-environmental projects related to at least one of the Sustainable Development Objectives. The winners of the Social Institutions category received cash value to be applied to the projects awarded.

18.2. ENGAGEMENT IN INTEGRAL SUBSIDIARIES

GRI 102-21

In 2018 COPEL GeT evaluated the stakeholders defined by the Company, and identified and prioritized the most relevant ones for its business. This process was carried out with the participation of all its staff and validated by senior management. The result will serve the establishment of agreements with the interested parties and for the interaction between them with the strategies and processes of the subsidiary, in a short- and long-term perspective.

GeT stakeholders can contact the subsidiary regularly through the available service channels, but the subsidiary also conducts occasional campaigns for some of them, such as vendor workshops; specific projects for employees; meetings with surrounding communities, ONGs and indigenous communities; meetings with city halls, environmental agencies and real estate agreements; road shows and teleconferences; besides having exclusive departments to attend investors and shareholders.

COPEL Distribuição, in turn, defined and prioritized its stakeholders in 2016. The subsidiary has a series of relationship channels detailed in the Social-Environmental and Economic-Financial Responsibility Report, available on the Company's website.

COPEL Comercialização relates to customers by e-mail and telephone, and through visits. Customers are also invited to lectures and events of COPEL on the free energy market. The participation of the COPEL Comercialização team in fairs and rounds of business is aimed at engaging with potential customers. For this public, folders, e-mail marketing actions, presentations and gifts are also sent out. Clients and potential customers also have the COPEL Energia Mercado Livre application. Suppliers receive technical visits and participate in work meetings.



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COPEL Telecom annually reviews the Survey of Socio-Environmental Aspects and Impacts (LAISA), applying it in its processes. The result subsidizes the prioritization of socio-environmental initiatives linked to the ODS and enables the development of actions related to engagement with its stakeholders. The subsidiary also conducts a series of events:

- » Dialogue Cycle with Stakeholders: in 2018 was carried out with strategic clients. In 2019 will involve other customers and suppliers.
- » Telecom Meeting: aimed at the employees of the subsidiary, is held quarterly or each four months.
- » Lectures: EducaODS and Internet Without Bullying (*learn more on pages 112 and 116*).
- » Techmonth: initiative that opens communication channel with the main actors of the media of information technology, for presentation of solutions and exchange of ideas. Occurs annually.
- » CTE Sustainability Committee: aims to plan the evolution and continuous improvement of COPEL Telecom’s corporate sustainability performance in its social, environmental and economic-financial dimensions. It aims to inform and obtain the involvement of the leaders of the subsidiary and the invited members (leaders of areas of sustainability and governance of COPEL (Holding) - with

the implementation of the Sustainability Plan.

- » Sustainability initiatives: invitation to stakeholder participation, such as business partners, customers and suppliers.

COPEL Telecom goals are to expand the Internet Without Bullying project to more cities where COPEL Fibra is commercialized (82 municipalities of Paraná) and annually conduct the Cycles of Dialogues for each stakeholder prioritized by the company.

All stakeholders may contact COPEL’s subsidiaries through corporate channels or by “Fale Conosco” available on the Company’s website.

19. RELATIONSHIP WITH INTERESTED PARTIES

GRI 102-43

19.1. INTERESTED PARTIES ENGAGED BY COPEL

GRI 102-40

Copel (Holding)

The subsidiaries are committed to COPEL (Holding) to contribute to the Company’s sustainable value maximization. This commitment is executed in a Management Agreement between the parties. The needs and expectations of this interested party are identified in the Strategic Planning, meetings of the Board of Directors (Redir) and meetings of the Administration Council (DAC).

Employees

The Company adopts different communication channels to approach its employees, keep them informed, and identify their needs and expectations. There is the Great Place To Work Survey (GPTW), the Confidential Channels (CADAM, COE, Ombudsman, Reporting Channel), and the Anima Program. The Company makes available to this public professional development and remuneration according to the market, prioritizing transparency and equity in their actions.

Customers

The actions aimed at the clients aim to meet their main expectations: to have energy and internet available with low price, errorless invoice and agile service and quality, in addition to favorable conditions in hiring. Periodically are conducted satisfaction surveys with customers of COPEL Distribuição, COPEL Geração and Transmissão and COPEL Telecomunicações, aiming to improve the provision of service.

Suppliers

The alignment of COPEL’s operations with the needs and expectations of its suppliers is essential for the regularity and quality of the services. Acting in an isonomic manner in the management of contracts, COPEL regularly maintains contact with its suppliers, providing various relationship channels, such as e-mail, telephone and correspondence, as well as

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specific space in the corporate website.

Regulatory bodies

In the energy sector, COPEL has a legal obligation to regulators to develop its actions in accordance with applicable laws, regulations and legislation. In the telecommunications sector, the Company must also carry out its activities in accordance with its regulatory framework. The Company maintains specific meetings with the regulatory agencies, as well as public hearings and consultations, along with trade exchanges, e-mails and inspection and orientation visits.

Communities

Energy, COPEL's main product, means quality of life, health and development for society. In order to identify needs and expectations, COPEL executes the Community Relations Program around its new ventures, maintaining specific communication actions with this public.

Shareholders and Investors

Shareholders and investors are responsible for providing COPEL with part of its financial resources, from which the Company can carry out its activities with excellence and stability.

On the other hand, it must dedicate efforts to generate value and returns for this public. The relationship is especially through the area of Investor Relations.

Government

The Government of Paraná is the majority shareholder of COPEL, a position in which it directly influences the Company's strategy and business. COPEL's relationship with this public is direct, through the participation of government representatives in the Board of Directors and in the Audit Committee Statutory.

Partners

COPEL maintains partnerships with several companies, with the objective of optimizing the results of its business areas. They are the **affiliates and subsidiaries, and the Special Purpose Companies** in which the Company participates. COPEL monitors the development of its activities and performance, and its subsidiaries and controlled, and maintains proximity requiring the adoption of the same management practices in subjects such as health and safety, compliance with labor and environmental laws, compliance with regulatory standards, among others.



Igapó Lake - Londrina

20. CUSTOMERS AND CONSUMERS

20.1. CUSTOMERS PROFILE GRI EU3

Profile of COPEL Distribuição customers (captive consumers)		
	2017	2018
Residential	3,682,009	3,754,598
Industrials	76,328	73,662
Business	389,844	400,719
Rural	354,829	352,074
Others (public power, public lighting, public service, own)	57,483	57,853
Total of customers	4,560,493	4,637,804

Profile of COPEL Comercialização customers		
	2017	2018
Bilateral sales (market-ers)	50	61
Industrials	110	236
Commercial	29	56
Residential and rural	NA	NA
Total of customers	189	353

Note: The criterion used for the definition of COPEL Comercialização customers is the number of CNPJ (General Taxpayer's Registry) not repeated in the year, since many of them have more than one operation and in different periods.

Profile of COPEL Geração e Transmissão Customers		
	2017	2018
Generation Agents	2	2
Transmission Agents	19	24
Distribution Agents	37	44
Traders	15	20
Self-producers	-	-
Free Consumers	34	34
Special Consumers	11	11

20.2. MANAGEMENT OF SATISFACTION

In 2018 COPEL Distribuição was again recognized for its excellence in management. The subsidiary received a prize from the National Quality Foundation (FNQ), of Brazilian Association of Electric Power Distributors (Abradee) and the Regional Energy Integration Commission (CIER). In order to identify opportunities for improvements in the provision of its services, COPEL Distribuição conducts research with residential, industrial, rural and public authorities periodically.

Satisfaction indicators COPEL DIS			
Search category	2016	2017	2018
Residential customer (ISQP) - Abradee	88.8%	90.3%	83.2%
Group B customer (non-residential) - ISQP - Abradee	84.8%	NP1	77.2%
IASC Residential Client - Aneel	73.1%	80.7%	74.1%
Rural client	NR2	NR	NR

Notes:

1. NP: Did not participate
2. NR: Not performed

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COPEL Telecomunicações, on the other hand, annually conducts consumer satisfaction surveys, following the same data collection methodology used by the National Telecommunications Agency (Anatel), which allows the comparison of the results of the Company's quality indicators with the data of other companies of the sector. In 2018, the General Satisfaction Index (ISG) based on the customer experience with the fixed Internet of COPEL Telecom was 8.35. The results of the Multimedia Communication Services (SCM) indicators can be verified in the business model on page 26.

COPEL Geração e Transmissão also conducts annual surveys with its clients through a questionnaire, which indicates their level of satisfaction with the services rendered. Most customers are satisfied or very satisfied, as shown in the following table:

COPEL GeT satisfaction indicators			
Customer / Partner	Unsatisfied and little satisfied	Indifferent	Satisfied and Very Satisfied
Free and bilateral	7%	7%	86%
Transmission services	5%	4%	91%
Distributors and CCEARs (Contract for Commercialization of Electric Energy in the Regulated Environment)	0%	18%	82%
Services to power plants	0%	0%	100%

Note: For this survey, COPEL GeT customer profiles were grouped by service types.

20.3. COMPLAINT MANAGEMENT

20.3.1. Copel Distribuição

Management of complaints – COPEL Distribuição			
	2016	2017	2018
Complaints and claims registered and processed	20,668	24,460	26,405
Registered complaints and claims	20,668	24,460	26,405
Equivalent Frequency of Complaints (FER)	6.77	9.01	7.69
Equivalent Complaint Duration (DER)	116,94	108,59	108,46

COPEL Distribuição Service Channels

1st Level:

- » Virtual Agency
- » COPEL Mobile application
- » Personal assistance
- » Telephonic service
- » 0800 51 00 116



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» e-mails (copel@copel.com, atendimento@copel.com and comercial@copel.com);

» Contact us

» Audible Response Units (URAs).

2nd level:

» Ombudsman

20.3.2. COPEL Telecomunicações

The relationship with the clients is promoted through the relationship channels, which are defined according to the characteristics of each segment, in terms of ease, agility and acceptance.

Segment	Channel
Operators Fixed Switched Telephone Service (STFC), Personal Mobile Service (SMP) and Multimedia Communication Service (SCM)	Website, self-service portal, exclusive e-mail, telephone, Contact Center, account manager and Ombudsman
SCM Providers	Website, self-service portal, exclusive e-mail, telephone, Contact Center, account manager and Ombudsman
Corporate	Website, self-service portal, exclusive e-mail, telephone, Contact Center, account manager and Ombudsman
Copel	Exclusive Email, Phone, Contact Center, Account Manager and Ombudsman
Public sector	Exclusive Email, Phone, Contact Center, Account Manager and Ombudsman

Segment	Channel
PMEs	Website, self-service portal, exclusive e-mail, telephone, Contact Center and Ombudsman
Residential	Website, self-service portal, exclusive e-mail, telephone, Contact Center and Ombudsman
Residential low income	Website, self-service portal, exclusive e-mail, telephone, Contact Center and Ombudsman
Strategic Customers	Website, self-service portal, exclusive e-mail, telephone, Contact Center, account manager and Ombudsman

COPEL Telecomunicações customers have the Ombudsman as one of the service channels. It is the function of this channel to follow suggestions, complaints and denunciations received directly by the Company; by the ombudsman of the regulatory agency, Anatel; and by the platform of the National Consumer Secretariat (Senacon), of the Ministry of Justice; in addition to the demands presented by Procon and the State General Ombudsman. The Ombudsman's goal is to respond to complaints within ten business days. In 2018, 5,205 manifestations were received by the COPEL Telecom Ombudsman and all were resolved. As a result, most of the manifestations that would be sent to external entities, such as PROCON, Senacon or even ANATEL, were resolved by the Company itself.

The reduction in the volume of complaints in 2018 compared to 2017 can be explained as the result of the improvements implemented from the improvement opportunities identified in the processes and the Ombudsman's performance in the effective management of its processes.



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Complaint management – Copel Telecomunicações			
	2016	2017	2018
Complaints and claims registered and processed	4,474	7,461	5,205
Registered complaints and claims	4,434	7,461	5,205
Equivalent Frequency of Complaints (FER)	5.4	5.4	2.7
Equivalent Complaint Duration (DER) (DER)	8.3	3.6	2.0

20.4. USE OF ENERGY

PRME 1, 2, 3, 5

20.4.1. Affordable energy

GRI 203-2, EU23

The energy tariff represents a direct impact on the economy of consumers, regardless of social class. Such understanding leads COPEL to play its social role in partnership with the federal, state and municipal governments. To this end, the Company promotes several programs to make energy accessible to all.

Social Energy Tariff (TSEE)

TSEE offers discounts on electricity consumption, up to a limit of 220 kWh, to families enrolled in the Single Registry of Social Programs of the Federal Government, provided that the other criteria set forth in the Aneel Resolution

No. 414/2010, resulting in savings for the consumer. In 2018, 284 thousand consumer units were regularly served with TSEE, or 7.56% of the total residential households serviced by COPEL Distribuição, the equivalent, in amounts, to R\$ 112.3 million.

Programa Luz Fraterna (Fraternal Light Program)

The Luz Fraterna Program of the Government of the State of Paraná performs the payment of the bills of consumers enrolled in the Social Electricity Tariff, provided that consumption does not exceed 120 kWh. In 2018, 153 thousand families were serviced monthly, totaling R\$41 million allocated by the government of Paraná to the program.

Night Irrigation Rate and Rural Night Rates

These initiatives are the result of a partnership involving COPEL, the State Secretariat of Agriculture and Supply, the Paranaense Institute for Technical Assistance and Rural Extension (Emater) and the State Secretariat for Environment and Water Resources, The Rural Night Tariff aims to encourage the agricultural productivity through a discount of 60% to 70% in the electric energy tariff used for production in the period between 9.30 pm and 6 am. The Night Irrigation Tariff also provides subsidies for the construction or reinforcement of irrigation service networks. Up to December 2018, there were 5.2 thousand consumer units registered for the first tariff and 12.2 thousand for the second one.

+Clic Rural Program

In 2018 COPEL Distribuição invested R\$180 million in new technologies and automation and communication systems, substations and improvement and reinforcement works in the network to improve the electric power supply in the rural area of Paraná. Investments were made through the program + Clic Rural, for the modernization of the grid in the countryside. These measures, aimed at assisting the four sectors most sensitive to the quality of energy supply in the State - pig farmers, smokers, poultry farmers and dairy producers - benefited more than 330 thousand consumer units.

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The +Clic Rural incorporates innovations that are the fruit of more than a decade of tests in the operation of smart grids and includes automation and remote control of the electric grid, the installation of intelligent meters and pioneering research and development projects in Brazil, Ipiranga, in the Center-South of the State, became, in 2018, the first city in the country to be entirely covered by smart meters. São José dos Pinhais will be the second in 2019.

In addition, COPEL put into operation in June the third compact substation of the program, located in the municipality of Ivaí, a region with a strong presence of tobacco crops and family agriculture. R\$3 million were invested in the project.

The Ivaí Substation is automated and operates at a voltage of 34,500 volts, with four feeders installed to distribute power to the urban and rural households installed in the region. In the event of a failure in the main source, the assembly is able to reestablish the supply by a circuit, which increases the reliability of the system as a whole. Soon, the unit will be equipped with a bank of voltage regulators, which will provide even greater stability to the supply.

Since the implementation of the program, COPEL’s rural DEC has achieved a reduction of approximately 25%, which reflects positively in the total DEC, since it enables the optimization of the service teams for the prompt restoration of the company’s electrical system.

20.4.2. Practices to address barriers to access to energy and information

GRI 416-1, EU24

COPEL offers blind consumers the possibility of receiving their energy bills in Braille. The Company’s website is suitable for the visually impaired and hearing impaired.

COPEL participates in the Paraná Cidadão initiative, implemented by the State Government since 2003, with the objective of promoting citizenship and social inclusion of the population through joint efforts that include registration for the social tariff, for water and electricity, among other

services. COPEL provides a free connection to the Internet from its fiber optic grid, provides commercial assistance and promotes the dissemination of information on the safe and efficient use of electric energy.

In 2018 COPEL was present at events of the Paraná Citizen Program in several regions of the State. About 1,500 people were attended at the Company’s stand.

COPEL GeT is preparing technical specifications for the development of campaigns, to ensure the safe and efficient use of electric energy with the indigenous people responsible for the consumer units of the Indigenous Lands Barão de Antonina and Apucarantina (PR), where the subsidiary has facilities and Terms Adjustment of Conduct.



Curitiba, Author: Antonio Costa

20.4.3. Residential Shutdowns

Residential Shutdowns

In 2018 the volume of suspensions of energy supply due to non-payment was lower than that registered in 2017. The update of the service system, which occurred in March 2018, in addition to the migration to the new servers, which occurred in April 2018, caused occasional unavailability in the service system. Thus, in order to avoid causing negative impacts to customers, it was decided to reduce the number of cuts until the systems were fully prepared to serve customers within the regulatory deadlines.

Number of residential shutoff due to non-payment in 2018 GRI EU27		
	2017	2018
Less than 48 hours	495,230	474,216
From 48 hours to 1 week	92,291	90,976
From 1 week to 1 month	109,588	106,977
From 1 month to 1 year	94,452	91,345
More than 1 year	0	0
Power reconnection time after payment		
	2017	2018
Less than 24 hours	314,844	482,239
24 hours to 48 hours	65,301	28,992
From 49 hours to 72 hours	96,304	22,750
From 73 hours to 96 hours	not available	8,551
From 97 hours to a week	not available	12,725
More than one week	188,628	80,039

COPEL develops project to prevent light cutting

A pilot project developed by COPEL in Curitiba in 2018, aims to facilitate the payment of overdue bills and avoid power outages due to delinquency. More than 20 teams of electricians that suspend the supply of energy from consumer units due to pending bills in the city are offering customers payment of debts through card machines, thus avoiding the execution of the cut. The new technology improves the relationship with the customer as it offers a practical solution and avoids inconvenience.

20.4.4. Efficient use of energy

PRME 1, 2, 5

COPEL is committed to stimulating the conscious use of energy and informing its consumers in this regard. Campaigns are carried out annually to promote awareness of the issue in different ways. Public calls are also made for energy efficiency projects, of which industrial consumers, residential consumers (including condominiums), commerce and services, public authorities, rural and public services (including street lighting).

The Company also develops the Energy Efficiency Program (PEE), responsible for promoting efficiency in the final use of electric energy. In 2018, R\$10.1 million were invested in 51 PEE projects, 6 of which were completed during the year and 45 projects 45 remained in execution. Among them, a project was carried out with five public universities, bringing the academic environment closer to the theme and demonstrating to the community the feasibility of implementing the actions of energy efficiency. It is also worth noting the start of the installation of the



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first photovoltaic generator in a residential condominium in COPEL Distribuição, carried out with resources from PEE **GRI EU7**

The main mechanism of the PEE is the COPEL Project in the Community, aimed at low-income consumers, benefiting from the Social Electricity Tariff - TSEE, which is based on lectures on safe and efficient consumption, energy diagnostics and equipment replacement by others of lower consumption.

21. SUPPLIERS

21.1. SUPPLIERS MANAGEMENT

GRI 102-9, 103-1, 103-2, 103-3

The supply chain management is an important pillar of social and environmental responsibility and contributes to corporate sustainability. Through strategies and contractual requirements, COPEL promotes the improvement of the management of its productive chain and the optimization of resources for the benefit of the community, in order to incorporate in the internal and external relations, values that broaden citizenship, dialogue between the parties, ethics and transparency.

In 2018 COPEL had 3,759 registered suppliers, which added up to R\$2.9 billion in amounts paid (estimated values). Currently, the Company does not control the number of second or third level suppliers, that is, they are subcontracted by suppliers direct.

Geographical distribution of Copel suppliers					
	Copel GeT	Copel DIS	Copel CTE	Copel COM	Copel HOL
Northeast	2%	0%	0%	0%	0%
Southeast	33%	7%	25%	57%	22%
South	62%	89%	65%	43%	78%
Midwest	2%	1%	0%	0%	0%

The priority elements of the COPEL supply chain are:

- » Geração e Transmissão: acquisition of security materials and equipment maintenance services.
- » Distribuição: generators / transmitters and traders of energy, suppliers of materials and equipment, and providers of engineering services.
- » Telecomunicações: suppliers for provision of activation and maintenance services, provision of call center services and provision of equipment for data transmission
- » COPEL (Holding): suppliers of services and materials for corporate use, such as fleet leasing, hardware and software, building infrastructure, supply of food, among others
- » Comercialização: energy generators and marketers, suppliers of technological solutions for the free energy market, service providers for the definition of forward market prices, risk and counterparty credit assessment.

Among the risks related to the supply chain are accidents with employees, accidents or damages to the population, and facilities and precarious working conditions. Economically and socially there are risks related to COPEL's economic and financial dependence, legal obligations, fiscal charges, social and labor risks, and to the wages and additional payment. There are also environmental risks, which involve disrespect to environmental legislation, inadequate source of inputs and deficiency in the treatment of waste. COPEL seeks to mitigate these risks by means of rigid contracting rules, reaffirming the commitment to socioeconomic development, believing that the management of its supply chain guided by sustainability adds value to its brand, strengthening it in the market.

These rules are provided for in Federal Law 13,303 / 2016, in the Internal Regulations for Tenders and Contracts and in the Management of Contract, Registration, Supplier Evaluation, Company Code of Conduct, Supplier Manual and Human Rights Booklet, are in line with best practices



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in the market and have the objective of aligning COPEL’s performance with the needs and expectations of suppliers and managing the risks of sectors considered critical to operations.

The Procurement Policy applicable to COPEL (Holding) and its wholly-owned subsidiaries deals with the technical and ethical guidelines for conducting bids within COPEL and is in line with the Sustainability Policy (see pages 93, 107 and 126) in turn, has a guideline that addresses the social character of relations with suppliers: “To value the contributions of communities in the regions of insertion of COPEL’s businesses and to promote local sustainable development with shared value generation”.

The responsibility for the management of suppliers is from procurement and contracting, sustainability, social responsibility and contract management teams. The process is carried out through ERP / SAP systems and the Registry of Employees of Outsourced Companies (CET). At COPEL Geração e Transmissão there are two other applications, developed internally, to follow up purchases and activities to support the management of contracts, as well as a control panel of penalties applied to suppliers.

Although it does not currently evaluate its supplier management, COPEL evaluates some sectors considered critical to its operations, such as outsourcing customer activation and maintenance services and providing call center services in the case of COPEL Telecomunicações; the implementation of a technological solution to manage the commercialization in the free energy market at COPEL Comercialização and the supply of IT equipment at COPEL (Holding).

In this evaluation, COPEL considers the legal, financial, environmental, occupational health and safety aspects, population safety, corporate image, customer and society perception and continuity of processes, its

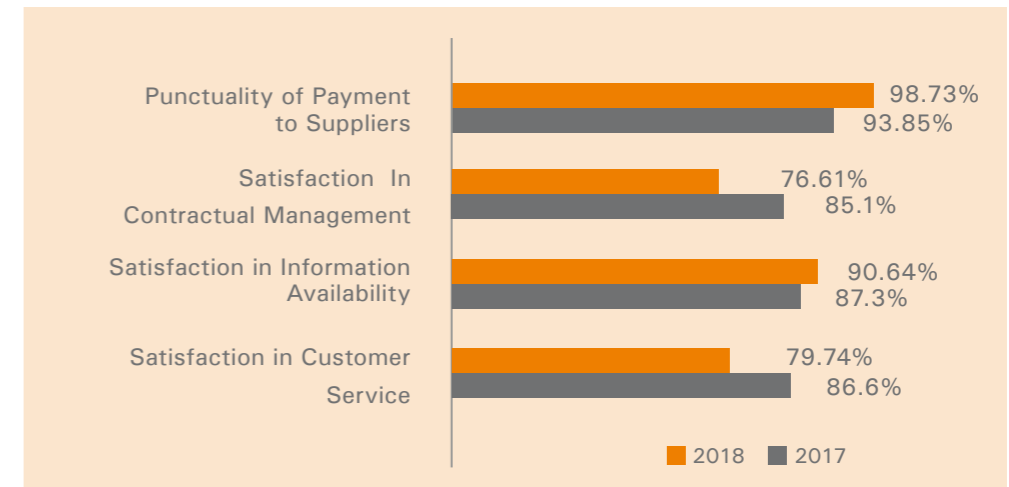
that the requisite hiring area defines the criticality of the object to be hired, which serves to adjust the criteria of judgment related to the economic-financial qualification of the companies. With this measure, it is sought to avoid the shutdown of the provision of services and

the discontinuance in the delivery of materials, preventing possible financial impacts to the Company and risks associated with the safety of employees, communities and the environment.

Suppliers also have the opportunity to evaluate how COPEL relates to them. Through the Supplier Register, it is possible to monitor the following indices annually:

- » satisfaction in contractual management
- » satisfaction in the attention of the financial areas, the supplier registers and the technical, bidding and contractual management areas
- » information availability satisfaction - COPEL’s website, supplier’s manual, Sustainability Policies, etc
- » satisfaction in the timeliness of COPEL’s payments

Results:





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21.2. Qualification, selection and hiring

COPEL expressly requires in the Internal Regulations for Tenders and Contracts, contractual clauses, supplier registration manuals and technical standards and manuals, made available online, that its suppliers comply with current legislation.

If there is a need for assignment of labor, outsourced workers, without exception, undergo an integration process, in which COPEL highlights its contractual demands regarding environmental, social, human and labor rights, accessibility and safety at work. Failure to comply may lead to administrative sanctions, such as fines, contractual termination and impediment, for up to two years, of participating in new bids by the Company. Compliance with contractual clauses is monitored through contract managers and supervisors. **GRI 414-1**

Since 2009 COPEL has maintained a standard clause of social and environmental responsibility in its contracts. Starting in 2016, hiring has been accompanied by a Declaration of Suitability and Social Responsibility. In 2018 a new contract model has been in force, including aspects of human rights, in particular the fulfillment of the 10 Principles of the Global Compact.

Depending on the object to be contracted, specific clauses regarding environmental requirements are inserted in the minutes that accompany the auction notice when it is published.

Incentive to supplier development

COPEL reserves quotas of up to 25% for the acquisition of materials of Micro-enterprises (ME), Small Enterprises (EPP) and Individual Microentrepreneurs (MEIs) in events whose object is the acquisition of assets of a divisible nature, as defined by Law Complementary No. 123/06. This initiative gives MEs, EPPs and MEIs the opportunity to be hired by COPEL.

There are also bids up to R\$80 K, which can be defined as exclusive to MEs, EPPs and MEIs. Another form of incentive for these companies occurs in the processes with broad participation, in which the benefits of the Complementary Law nº 123/06, according to which these companies have the right to offer a proposal of a lower price than bid closing (the best bidder in the bidding process), if they are in the range of 5% (in the trading modality) or 10% (other modalities), based on the value of the best proposal received - situations classified as a false tie between ME, EPP or MEI with the largest billing proponent.

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Wind farms in RN, Author: Adilson Goncalves de Campos Junior

Contracting by exclusive bidding	
Copel Geração e Transmissão	45
Copel Distribuição	126
Copel Telecomunicações	6
Copel (Holding)	8
Total	185
Total hiring at Copel in 2018	3,759
Percentage of exclusive hirings	4.9%

Note: COPEL (Holding) is responsible for hiring COPEL Comercialização.

21.2.1. Subsidiaries' practices

COPEL Telecomunicações values the hiring of local suppliers, especially in relation to services, bidding on lots in the regional offices where it operates, enabling and encouraging the participation of these suppliers. As a result, approximately 69% of the contracts are signed with suppliers from Paraná.

COPEL GeT established in 2017 the auction notice for Public Calls for the selection of projects to increase the productive activities of family agriculture and sustainable management in the municipalities of Cláudia, Colíder, Itaúba and Nova Canaã do Norte, in Mato Grosso. The process is in progress and should be finalized in 2019. In order to assist its suppliers with respect to legal compliance and their own requirements, the subsidiary provides the Guide for Occupational Health and Safety Guidelines for contractors, holds a workshop on the subject and on sustainability and invites companies to participate in their Internal Weeks for Accident Prevention (Sipats). The contracts contain clauses that oblige contractors to hold safety integration meetings and to execute the Civil Construction Waste Management Plan.

For the management of the supply chain, COPEL DIS has designated a permanent working group to define practices in line with market requirements and supplier relationship and development procedures. The subsidiary also executes the Preserving Life Program (PPV), which has as an objective to punctuate safety irregularities regarding procedures and the use of individual and collective protection equipment. The best companies in the supply chain of COPEL DIS are recognized with the Supplier Award, whose main purpose is to promote the optimization of delivery time and generate positive impacts in the use of financial resources.

22. SOCIAL RESPONSIBILITY AND LOCAL COMMUNITIES

22.1. SOCIAL RESPONSABILITY

GRI 103-1, 103-2, 103-3

Focusing its economic activities on social responsibility, in order to achieve the correct socio-environmental performance, COPEL considers in its decisions the expectations of stakeholders and seeks alternatives that promote social well-being, in line with legislation and behavioral norms. These expectations are often evaluated through satisfaction surveys (see page 97) and the manifestations received through dialogue channels and relationship programs (see page 40). COPEL works to deliver quality products and services with competence, good service, sustainable profitability and promotion of local development.

Local development is one of the positive impacts COPEL has on the communities in which it operates. In addition to supplying energy with quality and reliability, it is worth mentioning the generation of revenue for municipalities where enterprises are installed, employability and execution of programs that promote socio-environmental improvements. On the other hand, there are the potential negative impacts, for which COPEL makes every effort to minimize them. [GRI 413-2](#)

COPEL's social responsibility is managed by COPEL (Holding), and wholly-owned subsidiaries have specific areas and promote actions related to their business.

COPEL (Holding) is responsible for proposing, among other functions, policies, standards and guidelines related to social responsibility; represent COPEL and manage the relationship of corporate interest on this topic; define and coordinate programs, projects and initiatives, as well as support research or innovation; and establish and monitor corporate indicators.

This action is based on the guidelines of the Sustainability Policy, which is based on the commitments made with the Global Compact, the principles of corporate governance and the values and guiding principles of the COPEL Code of Conduct (*see these and other commitments entered into by the Company on page 61*). The document provides that COPEL should:

- » promote social responsibility actions guided by the mission, values and voluntary commitments undertaken
- » manage private social investment and fiscal incentives with transparency, aiming to maximize the social return on invested resources
- » encourage employees to engage in voluntary work to improve social reality
- » promote awareness and education actions for the internal public and other stakeholders related to sustainability
- » promoting accessibility in all its forms, ensuring the full rights of people with disabilities

The Company sets goals and objectives for its performance in social responsibility, some of which are mandatory and other volunteers, according to the table below



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Goals	Characteristic	Status (deadline 2019)
Accessibility - 100% service to NBR 9050	Mandatory, Standard: NBR 9050, which establishes criteria and technical parameters to be observed in relation to the design, construction, installation and adaptation of the urban and rural environment, and the conditions of accessibility of buildings	100%
Selective Solidarity Collection - the administrative waste of 74% of the employees had this destination in 2018	Mandatory, State Decree n ° 8426/2017, which establishes the obligation of selective separation of recyclable solid waste generated by the bodies and entities of the Executive Power	78%
Cultivation of Energy - Maintenance of the three vegetable gardens of Maringá (DIS and GeT), of the Cascavel vegetables garden (DIS), of the vegetables garden in Ponta Grossa (GeT), of the new vegetables garden in Curitiba (DIS), and of the new vegetable garden in Curitiba (GET)	Volunteer	The vegetables gardens are maintained.
Volunteering - reaching 3.5% of voluntary employees in relation to the total number of employees	Volunteer	5%

Annually, COPEL's social responsibility is assessed through its performance on the ISE Bovespa questionnaire, the 150 Best Companies to Work for Guide, Você/SA magazine and the Gender and Race Pro-Equity Program.

Museum on energy opens

In November COPEL inaugurated the Espaço Energia COPEL (Energy Space COPEL) in Curitiba, located in the townhouse of Rua Desembargador Motta, 2347, the former museum was revitalized to spread concepts about the efficient use of electricity and sustainable development, enabling a more interactive and and dynamic to visitors. The new facilities value memory, but also direct the look to the future and to the innovative projects of COPEL.

The space has four exhibition rooms, an educational room and an external patio. All rooms were used and even the corridor was re-adapted to shelter the theme of sustainability. The line adopted for the conduction of Space is the energy of the routine of the day to day.



COPEL Energia Space, Author: Valdenir

22.2. LOCAL COMMUNITIES

PRME 1, 2

At each new venture, socioeconomic studies are carried out as part of the licensing process. The periodicity of these studies varies according to the complexity of the enterprise. Its results are based on socio-environmental programs, which aim to mitigate and compensate for possible negative impacts. surrounding communities

In the analysis phase of the business opportunities, the impacts are initially evaluated by the Business Development Directorate, in case COPEL will invest, taking into consideration the environmental licensing studies carried out, a second evaluation phase

begins, which will define the characteristics of the project and allow to measure negative impacts, which will lead to the development of socio-environmental programs related to prevention, mitigation and compensation as well as the implementation of voluntary social initiatives.

In cases where there is a need for population displacement, an assessment is made by means of a Socioeconomic Register, the process of family relocation and social compensation for damages caused due to the installation of ventures, is to enable the affected family to be relocated to a better or similar area and recover the economic condition prior to the impact. In

addition, COPEL indemnifies the population for the expropriated properties.

GRI EU20

In the last three years, two reallocations were made for the implementation of the UHE Colíder and ten for the Transmission Line 500 kV Araraquara - Taubaté, which generated the disbursement of R\$306,790.82 and R\$2,099,860.57, respectively. These movements totaled 11 cases of compensation and 28 people affected. GRI EU22

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COPEL presents alternatives to provide energy to islands

COPEL received in June 2018 fishermen living on the islands of the Paraná coast located in the National Park of Superagui. The meeting was organized to present technological alternatives to bring electricity to localities. In addition to COPEL experts, members also participated in the meeting the Public Ministry of Paraná and the Chico Mendes Institute (ICMBio). As a public service concessionaire, COPEL has the mission to search for technological alternatives to overcome the challenge of natural barriers and to bring electrical energy to the islands that are not served. About 200 families of artisanal fishermen demand electricity in the region that supports, in addition to conventional appliances, freezers, so they can stock fish. Since 2009 COPEL has sought to meet part of the islands with photovoltaic panels, however, the consumption capacity of these equipment, of 45 kWh, does not allow the connection of freezer.

At the meeting, COPEL presented to the fishermen the three alternatives to bring electrical energy to the localities, which will also be presented to the bodies responsible for obtaining the license. One of the options is the installation of photovoltaic panels with up to 80 kWh of consumption capacity (that responds to the equipment demanded), and the option of carrying underground and underwater cables to the sites, COPEL DIS filed a report with these proposals in the process of environmental licensing with IBAMA.

22.2.1. Subsidiaries and communities

GRI 413-2, PRME 1, 2, 3, 6

As COPEL Distribuição's businesses affect places of residence, coexistence and leisure of the population, the community is considered as one of its main stakeholders, because, although the subsidiary provides more and more energy, it is still necessary to act on the potential impacts. Therefore, the company's Sustainability Committee has requested that, from 2018, the social and environmental impacts of the new ventures be evaluated, guiding actions that enhance the positive and mitigate the negative ones.

Currently, the subsidiary works with the surrounding communities through a Community Relations Program for new ventures, the Boa Vizinhança (Good Neighboring) Program (see page 114) and the CISAs. These committees specifically have the following functions:

- » hold lectures and participate in events and fairs in order to raise public awareness about the conscious consumption of natural resources and efficient and safe use of energy
- » guide social entities to participate in the Energy Efficiency Program and in the Permanent Public Call COPEL DRI nº 01/2016
- » support COPEL's participation in events, fairs, commemorations of significant dates, among others, disclosing the Company's

social and environmental actions.

- » represent COPEL, through designation, on boards and committees

Furthermore, for COPEL GeT the community is one of the main stakeholders, since many of its operations require significant social and environmental displacements and interventions. For this reason, the subsidiary seeks to contribute to the development of this public. The project to foster family farming conducted in the UHE Colíder (MT), certified by the Benchmarking Brazil Program, one of the most respected Sustainability Stamps in the country - is an example of the forms of contribution undertaken. The case was ranked 8th among 15 selected, having been awarded due to its adherence to the selection methodology, which is based on the ODS and SDG (Sustainable Development Goals) of the UN Agenda 2030.

The product "Paraná Connected: Internet of 1 megabyte at a low cost (R\$29.90) "was created to serve cities with a low human development index, with a population of up to 10 thousand inhabitants and, although its commercialization was discontinued in 2017, COPEL Telecom maintained its customer base, made up of 3 thousand people, who still enjoy quality internet.

According to the study "Executive Summary - Evaluating the Effect of Telecommunications Investments on GDP ", dated September 1, 2017, of the Institute of Applied Economic

Research (IPEA), 1% of the increase in broadband access entails, on average, a growth of 0.08% in Gross Domestic Product, Maintenance of the customer base of Paraná Conectado, therefore, contributes to the socio-economic development of the cities benefited, also impacting on the UN Sustainable Development Goals, more specifically in ODS -8 - Decent Work and Economic Growth, and ODS 10 - Reduction of Inequalities. The initiative also meets the National Broadband Plan, a government program for broadband internet access.

COPEL Telecom also offers a connection to the participants in the events of the Integrated Actions for Development and Citizenship Project - Paraná Cidadão Program - Paraná Cidadão - Justiça no Bairro (Justice in the Neighborhood), coordinated by the State Secretariat for Justice, Citizenship and Human Rights, by city halls and by partner institutions to enable the provision of free public services to the most needy community. In 2018 COPEL Telecom provided infrastructure to 73 events of this initiative.

22.3. 2018 Initiatives

GRI 203-1, 413-1, PRME 1, 2, 3, 5, 6

22.3.1. Grow Energy Program

Corporate program that enables the implementation of community vegetables gardens under COPEL power lines. Consolidated as an auxiliary strategy to prevent irregular occupations under high voltage power lines, the



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program benefits socially vulnerable families by stimulating food security and income generation, as well as strengthening social responsibility.

Participating in the program are the municipalities of Maringá, Cascavel and Ponta Grossa (PR), benefiting more than 650 people for the actions of the program, COPEL is working to formalize, in 2019, a partnership with the Municipality of Curitiba for the implementation of five more vegetables gardens. In 2018 the program was recognized by the Cities Program of the UN Global Compact in terms of innovation. It was included in the initiative platform as a model to be replicated worldwide (<https://citiesprogramme.org/>).

22.3.2. Eletricidadania (Electriccitizenship) Program

Corporate program through which COPEL encourages its employees to dedicate, voluntarily and spontaneously, up to 4 hours of their monthly work day to carry out social actions. In 2018 the Program was expanded, also allowing the realization of 8 hours every 2 months.

The work fronts are inspired by the Sustainable Development Objectives, covering topics such as human rights, education, inclusion, health, environment, citizenship and sustainability. In 2018, more than 7,500 people benefited from volunteer actions, among people with disabilities, children and youth in situations of social vulnerability, indigenous people, women, cancer patients, the elderly, street people, immigrants, etc.

During the year, 367 volunteers participated, totaling 2,975 volunteer hours. The goal of reaching 4.5% of volunteers in the Company in relation to the number of employees was exceeded, reaching 4.83%. From 2015 to 2018, there was a 93% increase in the number of volunteers.

In 2018 COPEL received the Viva Voluntário Award, in the category “Volunteering in the Public Sector”, of the National Volunteer Program, promoted by the Federal Government. In that same year, the program was extended to the COPEL Foundation, allowing the participation of retired people in voluntary actions.

22.3.3. Education Program for the Sustainable Development Goals - EducaODS

Since 2017 COPEL has maintained the EducaODS Program, which aims to inform and raise awareness among the Company’s internal and external stakeholders about the importance of the Sustainable Development Objectives, contributing to the awareness and change of values and behaviors in relation to the environment and social relations, motivating them to action..

Playful activities using a giant ODS puzzle game and treasure hunt are part of the program’s concept dissemination strategy. The goal is to encourage groups to study ODSs and create goals related to them, with a one-year deadline to reach them.

In 2018, in addition to involving COPEL employees, the game was also applied in schools, ONGs and social institutions, among others. At the invitation of the Ministry of the Environment, COPEL took the game to the educators attending the Fifth National Children and Youth Conference of Environment, in Sumaré, São Paulo.

More than 700 people, among employees, community and outsourced, participated in the dynamics in 2018, resulting in 108 projects in favor of ODS. 38 employees were also trained to act as multipliers of the activity.

Lectures were promoted on ODS, human rights, human rights in companies, climate change and code of conduct, which were attended by 98 employees and 46 outsourcers, not counting the audience of the webcast.

In December 2018, the Monica Group’s gibis (comic books). Discovering the ODS 7 - Clean and Affordable Energy (10 thousand copies) and ODS 11 - Sustainable Cities and Communities (8 thousand copies), a project designed in partnership with SOS Children’s Villages and the Mauricio de Souza Institute, for dissemination to the Company’s internal



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and external public. The comic books are available on COPEL’s website in digital format.

22.3.4. SDG Compass - ODS Guide for Companies

In 2018 COPEL followed the guidelines of the SDG Compass, developed by the Global Reporting Initiative, the UN Global Compact and the World Business Council for Sustainable Development. The guide promotes the understanding of ODS and helps in mapping its impact on the chain of value.

This process contributes to the internalization of ODS in the strategy of generation business, transmission, distribution and telecommunications, whose definition of targets and monitoring indicators should occur in 2019.

In addition, ODSs have been disclosed to all employees on weekly reports, including guidance on how each can contribute.

23. SECURITY OF ENTERPRISES

The population may suffer accidents related to electric power installations. In 2018, the number of cases with death and death registered by COPEL DIS decreased compared to 2017 (see table). COPEL GeT, in turn, has not had a record of such accidents for three years.

Safety indicators GRI EU25			
	2016	2017	2018
Total number of accidents without death with the population	23	26	35
Total number of accidents with death with the population	14	19	14

Safety indicators GRI EU25			
	2016	2017	2018
Lawsuits arising from accidents with the population - General Litigation Basis ¹	15	15	109

Note:

1. The accidents involving the grids, structures and other assets of COPEL Distribuição were considered. Cases were not computed in private networks or after the point of delivery - internal installation, according to Abradee criteria.

23.1. INDIRECT ECONOMIC IMPACTS

GRI 203-2

The COPEL Geração e Transmissão business, by its very nature, allows the population access to one of the main inputs of modern life: electric power. As the subsidiary operates in several states of Brazil, its economic impact is immeasurable, since these occur in different magnitudes, according to the characteristics of the project and its location.

In the deployment and operation phases of the assets, the negative influences of the activities are duly identified and evaluated during the feasibility and environmental impact stages, in order to be controlled, mitigated or compensated in subsequent stages. Positive impacts, in turn, should be strengthened and maximized. From the socioeconomic point of view, between negatives and positives, there are impacts such as the dynamization of local economies during construction; the pressure for public infrastructure and services resulting from the demographic and urban increase; interferences in economic activities related to the use of natural resources or linked to the polygon of affected real estate; changes in employment, income and access to goods and services by local populations; risks of economic retraction and population emptying after completion of works; and increase of the fiscal revenues of the municipalities.



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The economic impacts of COPEL Comercialização are also linked to its business. The subsidiary operates in the free energy market, a contracting environment in which the consumer freely chooses its supplier, which enables significant reductions in its energy bill compared to amounts paid in captive market.

In COPEL DIS, the actions linked to the Good Neighboring Program indirectly generate positive economic impacts, since they provide tools for educational and professional development, and income generation. Initiated in 2017, the program encompasses activities such as basic computer science classes, mathematics, school reinforcement, cultural actions and the creation and maintenance of organic gardens for young people. In addition, other actions within this scope contribute to the development of income supplementation alternatives through handicraft workshops and reuse of materials. Ready-made objects are sold by participants in local commerce.

In 2018, the actions were developed in the cities of Ponta Grossa, Maringá, Londrina, Cascavel and Curitiba. Altogether, seven institutions were attended.

The indirect economic impacts of COPEL Telecomunicações are reported on page 111, and are related to the availability of low-cost internet service.

24. HUMAN RIGHTS

GRI 103-1, 103-2, 103-3

Since its founding six decades ago, COPEL has committed to upholding human rights. The Company acts in line with the Universal Declaration of Human Rights, which is constantly reaffirmed and detailed through UN-coordinated platforms such as the Global Compact, of which COPEL has been a signatory since its creation, the Sustainable Development Objectives and the UN Guiding Principles for Business and Human Rights (POs). According to the POs, the State will protect Human Rights and, respect them, as well as mitigate the negative impacts that they may have caused, in an active and engaged way, in their area of influence.

These commitments govern the Company's policies, rules and strategies and seek to protect the rights of all audiences influenced by its activities.

In this sense, COPEL carries out actions aimed at valuing diversity, inclusion and combating discrimination in relation to gender, sexual orientation, race, beliefs, ethnicity and people with disabilities. Human rights efforts consider COPEL's internal public and value chain. For this reason the Company seeks to combat the sexual exploitation of children and adolescents in the value chain and prioritize efforts in situations of greater vulnerability, such as works and

travel, as well as eliminate all forms of forced or child labor. Internally, COPEL seeks to ensure the freedom of association and the effective recognition of the right to collective bargaining.

COPEL (Holding) determines the general guidelines for managing these issues within subsidiaries.

Human rights issues are inherent in the projects developed by COPEL in all its subsidiaries, being considered since the prospection of new businesses in the feasibility assessments. The concern with the topic extends through the stage of conducting Environmental Impact Studies and / or of the Simplified Environmental Reports. The potential negative impacts mapped through these studies are violations of the rights of traditional peoples and communities, such as indigenous, quilombolas (Afro-Brazilian resident of quilombo) and riverside people; and the rights to housing, essential public services during the construction phase of the enterprises (demographic increase) and accessibility to information on these facilities; and damage to the preserved environment; among others.

GRI 102-15, 102-29

During the process of implementation of the projects, COPEL is concerned with compliance with all applicable legal requirements, as well as compliance with the constraints of each project. This is because non-compliance with human



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rights laws can paralyze the project, damaging the company's image and contributing to the receipt of sanctions.

In relation to the activities performed by the suppliers, COPEL requires certain certificates and compliance with legal obligations, both in the contractor's qualification process and during the execution of the contracts. The Company uses the contractual requirements to mitigate risks and impacts, monthly or immediately, in case of hints and / or imminence of occurrence. Suppliers also receive the Supplier Handbook, revised and expanded in 2018, and the Book of Human Rights at Work, at which time they sign a Term of Science and Commitment. [GRI 102-15, 102-29](#)

In 2018, the clauses of social and environmental responsibility of the contract model adopted by COPEL with suppliers were revised. The new version analyzes the socio-environmental aspects to be observed and includes a specific item on human rights, subject to supervision. With respect to investment contracts, the managers of these documents are responsible for monitoring compliance with the contractual clauses. In case of irregularities, these managers initiate the processes of investigation and punishment of those responsible. No significant investment contracts were signed in 2018.

[GRI 412-3](#)

COPEL has no process to evaluate and monitor human rights related risks in its supply chain, COPEL is structuring official procedures to assess

the richness of occurrences of human rights violations in the supply chain. Human Rights Program, through which COPEL will implement the due diligence process related to this theme in its production chain. Initially, a pilot project was conducted in the contract for the green areas of Faxinal do Céu, focusing on the forty workers linked to it. As a result, a report was sent to the contract manager highlighting positive and critical aspects of human rights in relation to the group, so that relevant mitigation and prevention measures were taken. IN 2019 COPEL should continue to conduct studies such as this one, including the classification of companies according to their risk in terms of human rights violations, making it possible to prioritize audits in this regard. [GRI 408-1, 409-1, 412-1](#)

COPEL's activities related to human rights are disclosed to its stakeholders through publications such as this Integrated Report, the Social-Environmental and Economic-Financial Responsibility Report of the subsidiaries, the Human Rights Workbook and training,

In 2018 COPEL promoted, in partnership with the Federation of Industries of the State of Paraná, the training of "Due Diligence in Human Rights" offered by the Human Rights Working Group of the Global Compact.

It was attended by 15 employees of COPEL (Holding) and the wholly-owned subsidiaries, whose positions are strategic for the consolidation of human rights policies in the Company and

in its production chain. Issues such as internal impacts in the environment and in the chain were addressed; evaluation of these factors; integration and action; monitoring; and communication and reporting. [GRI 412-2, PRME 3](#)

Employees were also able to participate during the year in a series of lectures on human rights promoted by the EducaODS Program, some of which were subsequently made available on the intranet.

Also, in 2018, the video "Human and Labor Rights" was produced, to be used for integration meetings of outsourced employees. This video was published internally and will be on COPEL's website as early as 2019. For this year it is planned to implement a course in the format Distance Learning, on the theme.

A total of 494 hours of training on the subject were held during the year, with the participation of managers, program coordinators, analysts, suppliers and outsourced employees. It is not possible to quantify how many people joined the initiatives since they were subsequently released online. [GRI 412-2, PRME 3](#)

Internet without bullying

COPEL Telecom has a specific human rights initiative, the Internet Without Bullying Project, which seeks to combat bullying on the internet through the sensitization of young people in state public schools. The project was born out of the concern of the subsidiary with the considerable increase of teenage cyberbullying, which occurs in a virtual environment, notably the Internet, COPEL Telecom's main business.

The talks involve parents, students and educators. Lectures are given to students of Elementary School II, along with the provision of booklets and gifts. The lectures raise awareness about the seriousness of cyberbullying and reinforce values such as inclusion, ethics, empathy, equality and respect. At the end of each lecture, students are encouraged to sign a banner committing themselves to the abolition of the practice of bullying. It is oriented the fixation, in the corridors of schools, guidelines for reminiscing on the content of the lectures. Parents are provided with important guidelines for prevention and, if necessary, intervention in an appropriate manner. Educators receive lesson plans with suggestions of activities to continue the theme.

24.1. INDIGENOUS COMMUNITIES

COPEL acts in the indigenous reserves in order to respect the rights of these communities, guaranteed by the Brazilian constitution and, worldwide, present in the UN Declaration on the Rights of Indigenous Peoples.

COPEL also develops projects to guarantee energy supply to indigenous villages. Communities located in environmental conservation units, or in areas where it is not possible to carry the energy distribution

network, receive, for example, photovoltaic panels and training for the efficient use of the resource. In 2018, 847 indigenous consuming units were enrolled in the Social Tariff of Electric Energy (Low Income). In the same year, Copel Generation and Transmission started a pilot project aimed at the Kainkang tribe of the Apucarantina Indigenous Land (Tamarana - PR), which implies the combination of efforts between the company and the public power in the search for universal access to electric energy, by maximizing tariff benefits and by their conscious and safe use.



Image Bank

No cases of violations of indigenous rights were recorded in 2018, however, throughout the year, Copel GeT performed actions to comply with the TACs established in 2002, 2006 and 2009 to mitigate impacts of old installations, specifically the Apucarantina hydroelectric plant in Tamarana and the 230 kV Figueira - Apucarana Transmission Line (now Figueira - Londrina), in São Jerônimo da Serra. The demands of these TACS were established by the government and the justice system of Paraná. **GRI 411-1**

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The following initiatives were promoted:

TAC Apucarantina (2002 – Financial Compensation)

- » follow-up of the process of analysis of the counterparts proposed by COPEL GeT to conclude an Addendum to the TAC

- » monitoring of monthly payments of energy consumption bills from the Apucarantina Indigenous Community

- » promotion to the Reference Center of Social Assistance of Londrina and coordination, at the municipal and state levels, of the CadÚnico to mobilize a cadastral updating unit of the families holding the consumer units of the region

- » promotion to COPEL DIS for the updating of the registration of consumer units, aiming at framing the indigenous families in the social energy programs (Social Tariff and Fraternal Light) and referral for service entrances and extension of the grid for regularization of interconnections

TAC Apucarantina (2006 – Financial Compensation)

- » construction of three portals at the entrances of the Apucarantina Indigenous Land

- » fuel costs for transporting indigenous people on trips to sell handicrafts

- » promotion of traditional celebrations in conjunction with the 2018 Indian Day Party

- » organization of parties for celebrating the Indian Day, Christmas and New Year

- » construction of the Documentation Center for History and Memory of the Kaingang Culture. The architectural project of the center was designed for free by the project office of the State University of Londrina

- » Indian audiovisual production of seven short films

- » creation of Kaingang Radio (internal communication system by loudspeakers installed in the village headquarters)

- » Implementation of the Agricultural Production Program (production of maize and beans intended for subsistence)

- » transportation costing for participants in training courses and for indigenous students

- » costing of stationery materials for ornamental crowns for celebrating All Souls' Day

TAC Barão de Antonina (2006 – Financial Compensation)

- » Deposit of R\$ 50,649.14

TAC Barão de Antonina (2009 – Financial Compensation)

- » authorization by the Commission responsible for the Barão de Antonina Indigenous Community Fund for the use of community resources in the order of R\$58,519.50, in cultural, economic or environmental projects of their interest. Expenses are being managed by the indigenous people themselves.

24.2. TRADE UNION ASSOCIATION

In 2018 no cases were identified where the freedom of collective bargaining may be violated in its operations or among outsourced employees. [GRI 407-1](#)

COPEL actively manages and supervises labor contracts, which have clauses of commitment to compliance with labor legislation and respect for the right to collective bargaining. The Company's Board of Executive Officers follows a schedule of meetings with representatives of the various trade unions to discuss employees claims. Economic and administrative clauses are discussed on which employees vote in the meeting.



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COPEL Reporting Channel is open to complaints of irregularities or damages in this sense. If irregularities are proven, managers are informed so that appropriate measures are taken, including the application of administrative sanctions or even the offer of a complaint to the Public Prosecutor's Office, if the illegal conduct starts from a contracted company.

In contracts for the assignment of labor, the renegotiation is adopted, in which COPEL fully transfers the adjustments in the cost of labor

agreements and collective bargaining agreements so that the supplier does not suffer losses as a result of such negotiations.

In addition, the United Nations Global Compact, of which COPEL is a signatory, has among its principles freedom of association and the right to collective bargaining. This right is also defended in the Company's Code of Conduct.



Botanical Garden of Faxinal do Céu, Author: Daniela Catisti



natural capital



25. CLIMATE CHANGES

GRI 103-1, 103-2, 103-3, 305-5

Climate change has a direct impact on COPEL’s activities and the most significant risks related to them are changes in the operation of assets; loss of revenue due to replacement of equipment and facilities due to climate vulnerability; In order to mitigate these impacts, COPEL has been carrying out business adaptation studies, aiming at maintaining its operations (within the standards established by the regulatory agency) and developing measures to mitigate its impacts emissions.

GRI 102-15, 102-29, 201-2

While climate change may negatively impact business, it also brings some opportunities. With the energy demand from alternative, low-carbon sources, the electricity sector is undergoing disruptive change and it is at this point that they stand out, such as generation of energy from renewable sources, sale of renewable energy in the free market, distributed generation and supply of services such as electric service stations and electricity. [GRI 201-2](#)

Risks and opportunities by subsidiary		
	Risks	Opportunities
Distribution	<ul style="list-style-type: none"> » Physical: increase of temperature and intensity of the winds; » Regulatory: possibility of taxation or compensation of GEE (GHG) emissions. 	<ul style="list-style-type: none"> » Offer of services related to the distribution of electric energy, such as distributed generation and electricity (stations for supplying electric or hybrid vehicles).

Risks and opportunities by subsidiary		
	Risks	Opportunities
Geração e Transmissão	<ul style="list-style-type: none"> » Physical: change in extremes of precipitation and temperature increase; » Regulatory: possibility of taxation by the emitted carbon and posture of the environmental organ in new licenses. 	<ul style="list-style-type: none"> » Greater demand for the supply and sale of renewable energy; » Development of new renewable business.

In the Distribuição, it was identified that the physical risks can result in an increase in the drop in the structures of the high voltage towers and overload in lines and transformers, which may result in the inability to supply energy in its entirety. It is estimated that in each event the expenses are of R\$300,000.00, plus costs per tower replaced. As adaptation measures, it was proposed to carry out research projects and revision of project manuals, since the theme is new in the electric sector and the regulator did not position itself in relation to new projects due to climate change. There is no estimate of the costs required for the implementation of these projects.

Both in the distribution and in the transmission (by similarity) it is understood that the intensification of climatic events will increase the frequency of shutdowns of the installations, as well as the rigor in the recognition by the regulatory body for supervening events due to the climate change (tower drop, time to recovery, etc.).

In the Geração it was identified that the physical risks can impact on the operation and safety of the dams (volume of water stored in the dams), in the conditions of water quality of the reservoirs. In the regulatory scope it was identified that a future taxation can financially impact the business



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with the payment of taxes, realization of compensation of emissions by obligation of environmental agencies. In general, COPEL has been strongly engaged in recent years to identify its risks but there is still no management over related costs.

Stakeholders expect that the risks related to climate change will not greatly impact COPEL’s assets and that the Company will be able to mitigate the supply interruption due to bad weather or reestablish services in the shortest possible time, as well as maintain its predominantly renewable generating base, taking into account the market expectations for the purchase of this type of energy.

As part of climate change management, COPEL periodically monitors its emissions; accompanies government movements on carbon pricing, assesses the climate risks of new investments, and reviews measures to adapt business to the impacts of climate change. **GRI 102-15, 102-29**

In order to really care about this issue, in 2016 the Company instituted the Climate Change Policy, which establishes guidelines for the promotion of actions to reduce greenhouse gas emissions and the execution of plans capable of dealing with the consequences of climate change in its business. This policy was elaborated by the Climate Change Steering Committee, which has representatives from several areas of the company and was approved by the Board of Directors. Its content was guided by the GEE (GHG) Protocol, the principles of the Global Compact, the National Policy on Climate Change, the State Policy on Climate Change and the Sustainable Development Objectives (ODS). In 2018 the document was revised to update concepts and incorporated lessons learned during the course of the Climate Change program.

Although the Company currently operates a predominantly renewable generating plant, it is a low-carbon company and has been investing in projects that contribute to reduce emissions, with a special emphasis on the expansion of the renewable generating plant, installation of electric grids and electrovias, implementation of smart grids, fleet predominantly supplied with ethanol (measure decarbonization of the COPEL fleet) and modernization of the Figueira Thermal Plant, among others.

COPEL bases its performance on reducing emissions to pre-set targets. The deadlines for most of these targets, which were set in 2015, expired in 2018, which is why new commitments have been established for the next four years.



COPEL operates a predominantly renewable generating plant, being a low carbon company.

They are in compliance with the principles of the Global Compact and ODS-13 Action Against Climate Change, Agenda 2030. The goals follow three lines: actions in the value chain, mitigation measures and reduction of direct and indirect emissions and adaptation projects aimed at the reduction of climate vulnerability.

At the internal level, the management efficiency is evaluated by means of monitoring, reporting and external verification of the inventory of Greenhouse Gases - GEE (GHG), evaluated according to the methodology ABNT NBR ISO 14064-3 - Greenhouse Gases Part 3, and the Integrated Report, external indexes are also used, such as the Business Sustainability Index, which has a questionnaire on climate change, and the Carbon Disclosure Program (CDP), which also allows COPEL to compare its performance with the one of other companies of the sector, national or international.

25.1. 2018 NEWS

25.1.1. Study to quantify carbon sequestration

In 2018 a study was begun to quantify carbon sequestration in some of the Company’s green areas, which have previously gone through a recovery initiative through the planting of native species by COPEL GeT and COPEL DIS. The purpose is to establish a methodology for this process that can be applied in other areas and, therefore, to evaluate if there is an advantage for the company in certifying the carbon abducted, the study is expected to be finalized in the first half of 2019.

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25.1.2. COPEL launches solar map to foster photovoltaic generation

In November 2018 the Solar Map was launched, a tool accessible free of charge on the internet, at the address solar.copel.com and which provides information about solar radiation in all regions of Paraná, at any time of the year. These data are important for the generation of energy from the sun.

The Solar Map allows identifying the potential foci of business in photovoltaic generation and assisting the consumer in the definition of preliminary information for the feasibility of installing such a system in its consumer unit. The novelty is the result of nine months of work, investment of R\$550,000 and COPEL's partnership with the Paraná Meteorological System (Simepar), encouraging the generation of clean and renewable energy and reaffirming the company's commitment to sustainability.

25.1.3 Strategic Plan for operation in Distributed Generation

In December 2018 COPEL's Executive Board (REDIR) approved COPEL's Strategic Plan for Distributed Photovoltaic Generation. This plan will enable COPEL to advance in the offer of new services and in the generation of renewable energy.

25.2. MANAGEMENT IN INTEGRAL SUBSIDIARIES

COPEL Telecom received, during the 2018 edition of Futurecom, the main event of the telecommunications and technology industries of the country, the certificate of zero carbon emission, conquered through of a partnership developed with Biofílica, a Brazilian company focused on the management and conservation of forests, by means of the commercialization of environmental services.



Author: Daniela Catisti

The subsidiary was the first to zero carbon emissions at COPEL. 752 tCO₂ were neutralized, related to emissions from the 2017 inventory of telecommunications operations. According to Futurecom, COPEL is the first customer to receive the certificate during the fair.

In 2018, the Sustainability Committee of the CTE approved the continuation of the neutralization of the emissions of scope 1, that allow to acquire carbon credits, until 2022. In addition, Telecom has been promoting campaign of incentive of the use of ethanol in the flex fleet and stimulating its suppliers critical to conduct inventory of emissions.

COPEL Distribuição, for its part, carried out a pilot project to adapt to climate change between 2017 and 2018, which consisted of evaluating the effects of climate change on high voltage distribution lines. The subsidiary has also been conducting projects to take advantage of the effects of climate change on high tension. The subsidiary is also conducting projects to take advantage of opportunities, such as Eletrovia.

In addition, it is investing in a Research and Development Project for energy storage, a vital element to integrate conventional generation, centralized in the large power plants, and in the growing of renewable sources at the end of consumption.

The Climate Change Committee is developing a handbook for vulnerability assessment due to climate change in conjunction with COPEL GeT areas. The document will include guidelines for follow-up of the actions established in the internal standard related to this topic. The Subsidiary executes the Climate Change Program, which counts on the participation of professionals from the environmental, expansion and regulatory planning areas, and has the objective of implementing a climate vulnerability and adaptation assessment project. Additionally, it promotes with its employees an incentive for the use of ethanol in the flex fleet.

Corporately, COPEL achieved its two emissions-related targets: to reduce its fleet emissions by 5% up to 2018, compared to the average recorded between 2011 and 2014, and to reduce energy consumption by 10% compared to 2014.

COPEL receives awards for the disclosure of its GEE inventories

Copel obtained the Selo Clima Paraná Ouro 2018 (2018 Paraná Gold Climate Seal 2018), granted by the State Department of the Environment. The seal is given to companies that prepare inventories of greenhouse gases - GEE (GHG) and adhere to the State Public Register of Emissions.



Curitiba – Smart Copel, Author: Guilherme Pupo

25.3. GEE EMISSIONS GRI 305-1, 305-2, 305-3, 305-4, 305-5, 305-6, 305-7

In 2018 the issues of COPEL (Holding) and its wholly-owned subsidiaries were considered, as shown in the table below:

GEE (t)	Scope 1	Scope 2 ("location approach")	Scope 2 (approach by "purchase choice")	Scope 3
CO ₂	121,752.19	259,946.03	0.00	1,866.47
CH ₄	35.43	0.00	0.00	228.10
N ₂ O	500.94	0.00	0.00	79.86
HFCs	25.12	0.00	0.00	0.00
PFCs	0.00	0.00	0.00	0.00
SF ₆	3,853.20	0.00	0.00	0.00
NF ₃	0.00	0.00	0.00	0.00
TOTAL	126,191.99	259,946.03	0.00	2,174.43
Emission of CO ₂ biogenic (t)	5,091.53	0.00	0.00	103.54

Note: The inventory will be verified by external entity.



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In 2018, stationary combustion accounted for 80% of COPEL’s scope 1 emissions, followed by 9% land use change, 8% mobile combustion and 3% of other sources. Compared to 2017, there was an overall reduction of 41% of the emissions from this scope, which is due to the stoppage of UTE FRA due to the modernization of the plant, campaigns to increase the use of ethanol in the Company and reduction of activities related to land use change.

In Scope 2 there was an 18% reduction in emissions, which is due to the reduction in consumption and energy losses, as well as the reduction of the grid emission factor. Losses correspond to 99% of COPEL’s emissions, which is coherent for the electric sector.

For Scope 3, there was a 68% reduction in emissions compared to the previous year. The following sources were reported: employee displacement, waste disposal, transportation and distribution (upstream) and business travel. Scope 3 is still a challenge for the company, mainly the category goods and services purchased, and capital goods.

In relation to the Company’s relative emissions, emissions of scope 1 were adopted as the criteria for analysis, because they are direct emissions and therefore actions can be taken on them. In relation to the denominators, the most relevant ones were chosen for the Company and for the businesses involved.

After external verification, the inventory will be published in the public records of the GHG Protocol and the Paranaense Forum of Climate Change.

Also, in 2018, COPEL began a process of mapping suppliers potentially emitting greenhouse gases in order to develop them in relation to climate change, that is, to stimulate them to carry out their GEE (GHG) inventories and, later, to seek actions to mitigate their emissions.

The emission intensity indices for COPEL (Holding) and its wholly-owned subsidiaries are:

Company	Denominator	Emissions	Performance
Scope 1 tCO2e	Performance	0,008	redução de 44%
COPEL (Holding)	Revenue (R\$ K)	0,008	44% re-duction
COPEL GeT	Energy generated (GW.h)	5,810	32% reduction
COPEL DIS	Energy available (GW.h)	0.68	57% reduction
COPEL CTE	Customers	0,001	68% reduction

Note: the reduction in emissions is due to the efforts made in this regard, to the stoppage of the UTE FRA and to the increase of both revenue and customers in the CTE.

Atmospheric emissions (in t / year) GRI 305-7			
	2016	2017	2018
NOx (nitrogen ox-ides)	709	2,510	3,219
SOx (sulfur ox-ides)	2,764	15,344	18,108
COV (Volatile Organic Compounds)	0,2	0	0
MP (Particulate Material)	709	277	986

Note: Persistent Organic Pollutants (POPs) and Hazardous Air Pollutants (HAP) have not been released in the past three years.



Image Bank

26. NATURAL RESOURCES MANAGEMENT

GRI 103-1, GRI 103-2, PRME 1, 2, 3

Renewable natural resources are not infinite. This is the case of water, which can be renewed according to the rainfall regime, but which has been affected, among other factors, by human consumption and climate change, among other events. COPEL, which generates much of the energy through its hydroelectric plants. The Company also has thermoelectric plants moved to fossil fuel, finite and non-renewable resources.

This scenario makes natural resource management critical to COPEL's sustainability, which must prepare for scenarios of water scarcity and transition to a low-carbon economy, and can be anticipated by monitoring the availability of natural resources, continuous improvement in the management of these resources and strategic planning.

Natural resources directly influence COPEL's activities and this also impacts nature. These impacts vary according to the resource used and the undertaking in question. Concerned to water, the main natural resource used by COPEL, it is possible to change the hydrological regime of rivers where are installed hydroelectric; to influence the microclimate by the presence of reservoirs and the removal of vegetation, altering the quality of water and aquatic fauna in reservoirs, among others. There are also impacts on biodiversity, such as affectation of ecological dynamics, loss of habitats, population reduction, favoring invasive species.

The environmental studies, carried out according to regulatory requirements, point out the impacts with details and allow the development of actions to mitigate the harmful effects caused by COPEL, generating improvement of biodiversity and preservation, or, also, recovery of endangered areas and species. [GRI 102-15, 102-29](#)

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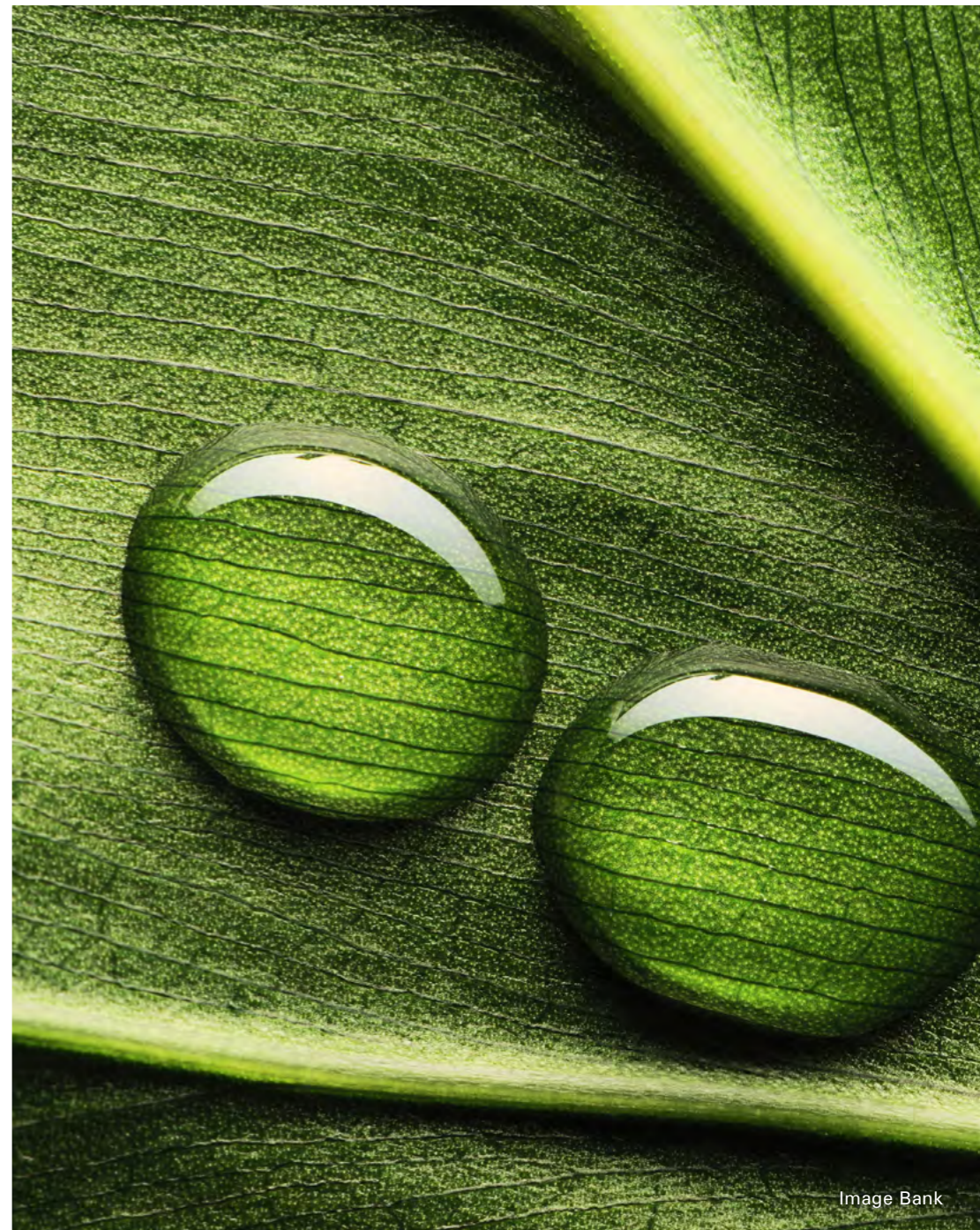
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The stakeholders expect COPEL to act in a responsible manner, doing its utmost to preserve natural resources and seek to identify new business opportunities related to its use. The Sustainability Policy establishes the guidelines for this action and must be followed by COPEL, its subsidiaries and controlled. The Company also follows, as a whole, the regulatory constraints for each type of enterprise and the premises of the Eco-efficiency Program. In accordance with these guidelines and commitments, natural resource management goals are established.

Natural Resource Management Goals		
Goal Type	Goal	Status
Reduction of water consumption in the administrative processes	Reduction of 10% in consumption of water up to December 2019, based on 2014 consumption	2% At the end of 2018, COPEL recorded increase of 2% in water consumption, compared to consumption in 2014, therefore, the target was not reached until now
Reduction of energy consumption in the administrative processes	Reduction of 10% in energy consumption until December of 2019, based on 2014 consumption	15% By the end of 2018 COPEL registered reduction of 15% in energy consumption in relation to 2014 consumption Goal exceeded
Reduced paper usage (digital invoice and duplex printing)	Achieve 50% duplex printing through December 2018	By the end of 2018 Copel reached an average of 41.93% of duplex impressions





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Actions to achieve the water, energy and paper goals are part of the Eco-efficiency Program, which aims to support projects to better use these resources, sensitizing the various areas of the Company and meeting the strategic guideline for achieving excellence in costs, processes and quality. The program also operates in the lines of mobility and fuel, education and communication. In 2018 a device test was carried out to reduce the consumption of water in toilets; management of water, energy and fuel consumption; and educational campaigns. The campaign to encourage the use of ethanol in the fleet of vehicles was maintained and the campaign COPEL without Plastic was created, aiming at reducing the consumption of glasses of this material. In relation to the use of energy, the highlight was the consumption reduction on the microcomputers. Related to mobility, stand out the initiatives “Bike to Work Day” (May 11), “World Without Cars” (week of September 17 to 22) - zero emissions (pedestrians and cyclists) and the I COPEL Interpoles Pedaling.

Waste management is done through the Corporate Waste Management Program, available for consultation on page 134.

COPEL’s assessment of natural resource management is done by third party auditors and performance appraisals in initiatives such as the Corporate Sustainability Index (ISE). These evaluations allow comparison with other companies in the sector and often involve the stakeholders.

26.1. MANAGEMENT OF NATURAL RESOURCES IN INTEGRAL SUBSIDIARIES

GRI 102-15, 102-29

The management of the impacts of the subsidiaries on natural resources is in line with the guidelines of COPEL (Holding). At COPEL Distribuição, the most relevant impacts are indirect, since the manufacturing of several materials for the electric power distribution system is made from finite natural resources. The subsidiary seeks to minimize them by recycling or reusing 99% of the waste generated (see page 134). The direct impacts of COPEL Distribuição are linked to the use of petroleum derived fuels for the operation of the fleet, which is objectively reduce by 2% until 2019, and for backup generators.

COPEL Distribution uses a system that centralizes costs into a single account, providing information on values, dates, volume, type of fuel and stations where purchases were made to control fuel consumption. Through the Eco-efficiency Program, in conjunction with the fleet management areas, the subsidiary carried out a campaign to encourage the use of ethanol instead of gasoline. The actions carried out had a rapid and significant result in increasing ethanol consumption. GRI 302-5

At COPEL Geração e Transmissão, the main impacts are directly related to the extraction of coal to supply the Figueira Thermoelectric Plant and, indirectly, to the use of fossil fuels,

petroleum derivatives, and mineral resources. To identify and reduce impacts, the subsidiary performs the environmental studies, already mentioned on page 125, and actions resulting from these assessments. All company activities related to use of non-renewable resources follow the regulatory requirements of the electricity sector.

For the conservation of water resources used in power generation, COPEL GeT develops activities related to the monitoring of water quality and the monitoring of Permanent Preservation Areas. The subsidiary maintains internal commissions and a centralized group with the objective of discussing the management of its reservoirs. The subsidiary also actively participates in the river basin committees in which its hydroelectric generation projects are inserted.

At COPEL Telecom, the most relevant impacts are also indirect, since several materials for the implementation, operation and maintenance of telecommunications solutions are manufactured from finite natural resources. The company, following the guidelines of the Eco-efficiency Program and the Corporate Management Program Waste, performs a project to recycle waste typical of its operation, such as batteries and optical fibers, and is committed to recycle 100% of this waste.

ISO 14001

Some of COPEL's Geração e Transmissão plants have obtained the ISO 14001 (Environmental Management Systems) certification between 2017 and 2018:

Power Plant	Date of certification
Salto do Vau Hydroelectric Plant	2018
Governador Bento Munhoz da Rocha Netto Hydroelectric Plant	2018
Other plants that hold certification	
Governador José Richa (Salto Caxias) Hydroelectric Plant	2017
Governador Ney Aminthas de Barros Braga (Segredo) Hydroelectric Plant	2017



Governador Ney Braga Power Plant, Author: Carlos Borba

26.2. WATER CONSUMPTION

COPEL's water consumption in 2018 was 115 million cubic meters, 22% lower than in 2017. The withdrawal of water from underground and surface sources used in power generation, transmission and distribution operations is controlled directly by the subsidiaries and the administrative consumption comes from public supply (Sanepar), including water used for cooling in COPEL GeT plants (100 million m³), the total jumps to 215 million m³. [GRI 102-48](#)

The goal of COPEL (Holding) and subsidiaries is to reduce consumption by 14% by 2019. In order to achieve this target, consumption data are analyzed routinely and any abnormalities are ascertained. In the largest buildings occupied by the Company, weekly analysis of the hydrometer in search of possible leaks.



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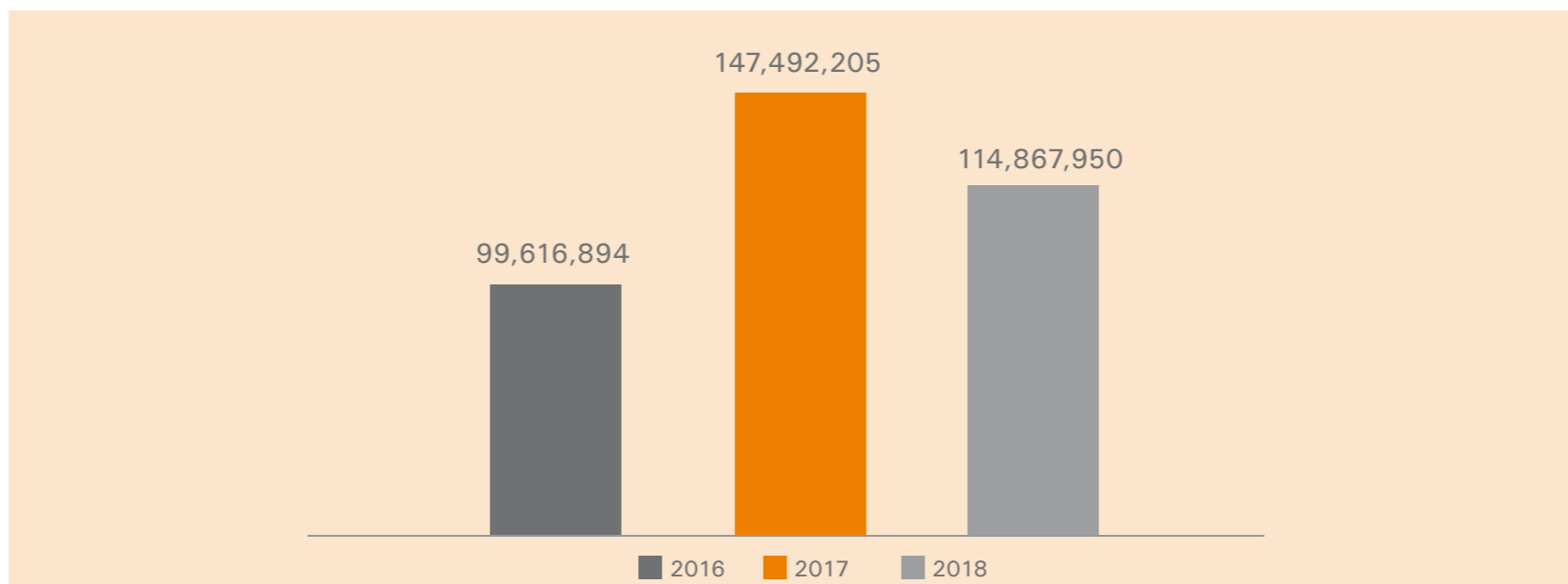
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Water consumption by source (m³) – GRI 303-1					
	Copel GeT	Copel DIS	Copel CTE	Copel Holding	Total Copel
Surface fountain	114,661,682.07		-	-	114,661,682.07
Underground fountains	52,481.00	22,462.00	-	-	74,943.00
Rainwater	87.09	37.27	-	-	124.36
Municipal supplies of water	45,081.00	77,115.00	714.00	8,291.00	131,201.00
Total	114,759,331.16	99,614.27	714.00	8,291.00	114,867,950.43
Water used for power plant cooling	99,819,948.83	-	-	-	-
Total water used by Copel GeT	214,579,279.99			-	
Total water consumed by Copel				214.687.899,26	

Comparison of water consumption in the last three years (m³) **GRI 303-1**



Note: do not consider water used for cooling.



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COPEL also recycles and reuses rainwater collected in four cisterns, two from COPEL GeT in Londrina and two from COPEL DIS in Castro and Jaguaíva. In 2018, 124.36 m³ were recycled and reused. At COPEL GeT, the use is made in watering of plants, cleaning of windows and sidewalks, while in COPEL DIS the water is consumed in toilets. **GRI 303-3**

Volume of water recycled and reused in 2018 (in m ³)	
Copel GeT	87.09
Copel DIS	37.27
Total	124.36

26.2.1. Water discharge

All COPEL's companies, including COPEL (Holding), only make domestic sewage disposal.

26.2.2. Reservoirs and water quality

Due to the construction of hydroelectric power plants, the change in water flow is the main impact of COPEL related to water resources. Therefore, the Company operates in the socio-environmental management of its projects from construction to operation, conducting studies, seeking mitigate the risks, and taking into account the pertinent environmental legislations. It maintains, for this, a monitoring network in hydrographic basins with hydroelectric exploitation in operation.

The network consists of several hydrological stations, in which data are collected on water level of rivers and reservoirs, and rainfall data. These data, after processing in the System of Monitoring of Reservoirs (SMR), help and guide the operation of hydroelectric plants. Check them on [COPEL's website](#).

In addition, COPEL Geração e Transmissão maintains a specific program of periodic environmental inspections in its reservoirs.

Possible environmental interventions in lakes and their surroundings are evaluated, and specific measures are identified to address identified irregularities in construction in the concession area, effluent discharge, slope stability, use and occupation of Permanent Protection Areas. In order to assist in the process of preserving areas of relevant environmental interest, the Company has an agreement with the Environmental Police Battalion of the State of Paraná and actively participates in the River Basin Committees and the National and State Council of Water resources.

In relation to the water quality of the rivers and reservoirs under the influence of their enterprises, COPEL GeT monitors periodically. Currently, the network has forty monitoring points, through which various physical, chemical and biological parameters are analyzed. The results of the analysis are interpreted and presented in annual reports to the Environmental Institute of Paraná (IAP).

26.3. CONSUMPTION OF ELECTRICITY AND FUELS

GRI 302-1

The Ecoefficiency Program consolidates COPEL's energy consumption data, which covers information from COPEL (Holding) and the wholly-owned subsidiaries Geração e Transmissão, Distribuição and Telecomunicações, considering practically all of the Company's facilities in Paraná. COPEL Comercialização's consumption is embedded in the one presented by COPEL (Holding), as this subsidiary occupies the same buildings and also uses only electric power.

COPEL's energy consumption in 2018 was approximately 1.5 million GJ. This total is 36% lower than in 2017.

Regarding electricity, consumption was 102.8 thousand GJ, 14% lower than that of the previous year, COPEL is committed to reduce electricity consumption by 10% up to the end of 2019, based on the consumption of 2014. The goal was split by 2% per year, COPEL (Holding) registered an increase of 8% in consumption from 2017 to 2018 due to the fact that it assumed responsibility for the buildings



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previously occupied by COPEL Renováveis, a subsidiary that was incorporated by COPEL GeT in 2017, and its employees relocated to the buildings occupied by this wholly-owned subsidiary.

COPEL Telecomunicações' electricity consumption also increased (7%) as a result of the Company's significant growth in operations. COPEL DIS and COPEL GeT exceeded the target, reaching a reduction of 18% and 3%, respectively, compared to 2017. [GRI 302-1, 302-4, 305-5](#)

The only subsidiary to control energy consumption outside the organization is COPEL Distribution, which accounted for 10,135.56 GJ in material transportation services in 2018. COPEL (Holding) employees' air travel and of all subsidiaries are calculated only in terms of CO2, and included in the Scope 3 emissions inventory (*other indirect emissions - see page 123*).

[GRI 302-2](#)

The energy intensity, measured for the whole Company by the metric of electric energy consumption divided by the number of own employees, was 13.50 in the year. [GRI 302-3](#)

The Eco-efficiency Program tracks energy consumption data on a monthly basis, investigating significant changes to the areas responsible for the facilities and working to correct them. The program also provides awareness campaigns to employees and supports infrastructure improvements, including the use of equipment more efficient, such as LED lamps.

[GRI 302-4](#)

With regard to fuel consumption, in 2018 the total number of vehicles was reduced and many of our own vehicles were replaced by rental vehicles. Newer and more efficient models, such as flex type vehicles, have been favored. In addition, the subsidiaries have been promoting incentive campaigns for the use of fuels from renewable sources. [GRI 302-4, 302-5, 305-5](#)

Energy intensity within COPEL (GJ consumed / n° of own employees) in 2018 GRI 302-3					
	COPEL GeT	COPEL DIS	COPEL CTE	COPEL (Holding) e Comercialização	Total
Energy (GJ)	25,668.00	73,609.11	2,594.52	886.00	102,757.63
Number of employees	1,660	5,364	478	109	7,611
Intensity	15.46	13.72	5.43	8.13	13.50

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Energy consumption within Copel (in GJ) GRI 102-48, 302-1					
	Copel GeT	Copel DIS	Copel CTE	Copel (Holding)	Total Copel
Consumption of non-renewable sources	-	-	-	-	-
Diesel oil	15,990.27	117,766.61	1,353.63	-	135,110.51
Gasoline	1,875.73	5,315.52	612.38	-	7,803.63
Coal	1,183,661.95	-	-	-	1,183,661.95
GLP	-	-	-	-	0.00
Aviation kerosene	2,730.91	-	-	-	2,730.91
Total	1,204,258.86	123,082.13	1,966.01	-	1,329,307.00
Consumption of renewable sources	-	-	-	-	-
Ethanol	7,922.56	22,647.77	3,942.52	-	34,512.85
Biodiesel	1,471.66	11,750.83	126.53	-	13,349.02
Total	9,394.22	34,398.60	4,069.05	-	47,861.87
Electric power consumption	25,668.00	73,609.11	2,594.52	886.00	102,757.63
Total energy consumption in 2018	1,239,321.08	231,089.84	8,629.58	886.00	1,479,926.50
Sale of electricity	49,402,688.40	-	-	-	49,402,688.40

Note:

1. For the conversion of fuel consumption in l to GJ, the calorific value of each fuel was used. Calorific power (GJ / ton) per fuel: gasoline - 43.54; anhydrous ethanol = 28.26; ethanol = 26.38; diesel oil - 42.29; biodiesel - 37.68; GLP - 46.47.

2017 x 2018 Electric power consumption (in GJ) GRI 102-48, 302-1				
	2016	2017	2018	Range 2017 x 2018
Copel GeT	28,225.44	26,358.48	25,668.00	-3%
Copel DIS	76,176.00	89,685.36	73,609.11	-18%
Copel CTE	2,363.04	2,428.56	2,594.52	7%
Copel (Holding)	671.04	820.08	886.00	8%
Total	107,435.52	119,292.48	102,757.63	-14%

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2017 x 2018 Fuel consumption (in GJ)		
	Total Copel	
Consumption of non-renewable sources	2017	2018
Diesel oil ¹	162,287.43	135,110.51
Gasoline	36,972.11	7,803.63
Coal ²	1,926,305.16	1,183,661.95
Liquefied petroleum gas ³	68,375.533	0.00
Aviation kerosene	2,994.21	2,730.91
Total	2,196,934.44	1,329,307.00
Consumption of renewable sources	2017	2018
Ethanol	12,647.72	34,512.85
Biodiesel	-	13,349.02
Total	12,647.72	47,861.87
	2017	2018
	2.209.582,16	1.377.168,87
Total fuel consumption	2,209,582.16	1,377,168.87

Notes: 1. Sum of diesel used in transportation and emergency generators.
 2. Coal is used for the production of energy in a thermoelectric plant.
 3. Sum of consumption in the company's forklifts and kitchens. Data omitted in 2018, as they are not significant.
 4. Ethanol, gasoline, GLP and aviation kerosene are the fuels used in means of transport belonging to the Company.

26.4. CONSUMPTION OF MATERIALS

GRI 301-1

COPEL used 127.6 thousand tons of materials in its operational activities in 2018, the most used of which are detailed in the table below.

Material	Weight (in kg) - estimated
Concrete post	64,358,688
Mineral coal	51,414,625
Transformer	2,958,939
Aluminum cable	2,444,910
Concrete crosshead	1,452,992
Hardware	1,130,568
Concrete Artifacts	983,009
Porcelain insulator	538,058



Image Bank



26.4.1. Paper consumption

COPEL controls print and copy data through monthly reports prepared by the company that provides the service. These reports include data such as quantity of printing, billing value, services rendered and management information. In 2018 COPEL saved 3,539,381 sheets of paper with the use of the duplex format. This number corresponds to 7,079 reams and would correspond to approximately 472 trees, as described by the International Featured Standards (IFS), in which 1 tree is equal to 7,500 sheets of paper.

The main actions undertaken in 2018 to reduce the consumption of paper and printing are described on pages 83 and 126.

26.5. WASTE MANAGEMENT

GRI 306-2

The Corporate Waste Management Program has as objectives the reduction in generation, the valorization of discarded material and the promotion of reverse logistics. All the processes adopted by the Company are in compliance with the National Solid Waste Policy and all pertinent legislation.

In 2018, 63,284 t were disposed of by COPEL, 12.26% less than in 2017. The largest volume was destined for recycling - 49,906.43 t. The ashes of the Figueira Thermal Power Plant, which represented 98% of these discards, were discarded in landfill, the other discarded wastes were administrative waste and materials contaminated with oil.

COPEL (Holding) and wholly-owned subsidiaries have different disposal targets, but all of them related to recycling. At COPEL GeT, the objective is to give this type of disposal to 60% of the waste generated annually

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(excluding ash). In 2018 this goal was reached. COPEL DIS' goal for the year was to send at least 95% (in mass) of the waste, which was surpassed in the year, since the subsidiary reached a recycling rate of 99.6% (including disposals), COPEL CTE seeks to recycle 100% of the typical waste from the telecommunications operation, such as fiber optic scrap and batteries, which was also won in 2018. COPEL (Holding) aims to allocate to administrative associations generated by 78% of its employees, by the end of 2019. In 2018 this percentage was 74%.

As a good practice, in order to comply with the National Solid Waste Policy, the Company maintains the Collective Solidarity Collection, which consists of the destination of the recyclable administrative waste to associations and cooperatives registered by means of Public Call. The initiative fulfills important social function, as it strengthens the protagonism of associations and cooperatives of collectors. In 2018 the practice benefited 420 families, generating an average monthly income of R\$309 per family.

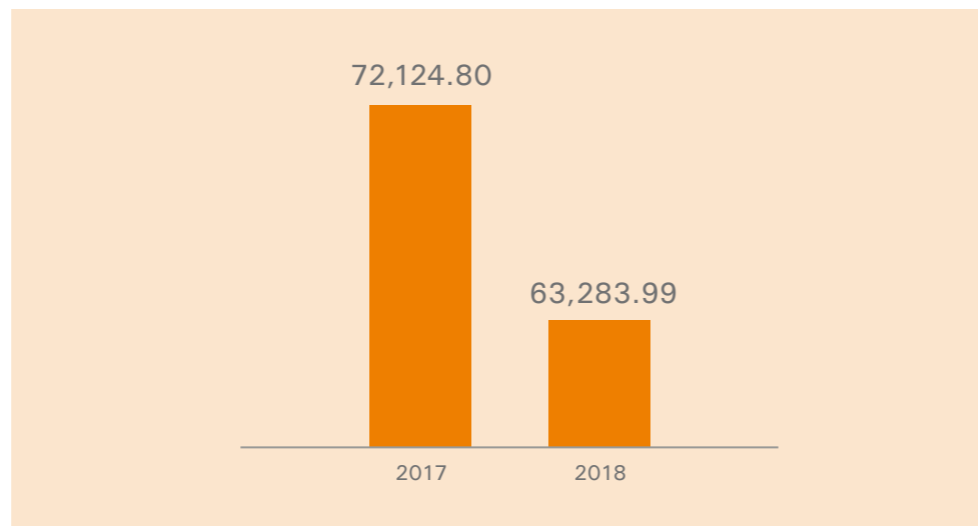
With regard to service providers, these must meet the contractual clause that requires the correct destination of waste classified as leftover works.

Disposal of waste in 2018 (tons) – GRI 306-2				
	2017		2018	
	Hazardous waste	Non-hazardous waste	Hazardous waste	Non-hazardous waste
Recycling	5,490.30	45,877.40	7,577.27	42,329.19
Composting	-	31.10	0.00	29.28
Incineration	0.05		1.08	0.00
Landfill	0.76	20,688.40	63.12	13,249.15
Coprocessing	33.04	3.75	34.90	0
Total	5,524.15	66,600.65	7,676.37	55,607.62



Governador Bento Munhoz Power Plant, Guilherme Pupo

Total waste disposal (in t)



26.6. ECOSYSTEMS

26.6.1. Impacts of ventures and mitigation GRI 102-15, 102-29, 304-2

In accordance with its principles and relevant legislation, COPEL undertakes environmental studies prior to the installation phase of new ventures, seeking to determine and mitigate the impacts caused on the ecosystem.

Generation projects affect the physical, biotic and social environment, which can alter ecological processes, the composition of fauna and flora species, and impact the population's way of life and historical-cultural heritage. COPEL monitors and rescues flora and fauna, and acts in the recovery of Permanent Preservation Areas (PPAs), forest restoration, archaeological monitoring and rescue, among other actions. Many of the initiatives are carried out in the implementation phase of the enterprise, and may have unfolding in the operation phase.

For the distribution and transmission power facilities, the main impacts are concentrated in the implantation phase, when the vegetation is suppressed for system implantation. This process can increase the forest fragmentation of the environments and among other reasons, to the increase of the border effect, to the reduction of fauna habitats and to the increase of hunting in the region. In the distribution lines favoring exotic species, invasive exotic species and other opportunistic species can be favored to be established due to the opening of clearings for the construction of structures and launching of cables.

Another risk to biodiversity (aquatic and terrestrial) is the oil leakage of transformers and other equipment that can contaminate the soil and groundwater if they are not contained. COPEL adopts preventive measures during the operation, thus reducing oil leakage. In 2018 COPEL GeT registered the leakage of 150L of hydraulic oil (implantation of the SBN III Wind Farm) and was remedied with the removal and destination of the contaminated soil, without any water surface being affected. At COPEL DIS there was the spillage of 38,200 L of mineral oil insulation of electrical equipment that almost all were contained in water-oil separators, and the contaminated soil was already removed and destined properly. GRI 306-3

When choosing the land for the implementation of energy substations, COPEL Distribuição conducts a preliminary environmental analysis, thus verifying possible socio-environmental restrictions.

In order to define the tracing of transmission lines, a multidisciplinary analysis is carried out, seeking the lowest possible impact on the natural environment, considering the economic and social issues of the chosen route. In some cases, however, it is not feasible to divert the path of forest fragments and, for this reason, the projects have sought to minimize plant suppression, sometimes restricting itself to the opening for the launching of cables, which in some cases is done with drones, avoiding the shallow cutting of native species. Projects also foresee, whenever possible, raised structures, preserving the vegetation.



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COPEL has environmental programs such as Monitoring and Control of Vegetation Suppression, Reforestation, Monitoring and Control of Erosive Processes and Removal and Rescue of Fauna, whenever applicable to the projects. In addition, in the medium voltage distribution lines, the use of compact grids reduces the need to prune trees.

In 2018 the following environmental reports for licensing were prepared by COPEL and by the following parties:

Report	Quantity
Simplified Environmental Report (RAS)	12 Substations and 6 High Distribution Lines Voltage (LDAT)
Environmental Programs Detail Report (RDPAs)	3 substations and 6 LDATs
Previous Environmental Analysis	12 voltage substations 34.5 kV and 138 kV

In none of these studies were identified highly relevant impacts on biodiversity.

COPEL Geração e Transmissão, in turn, prepared forest inventories for six projects and concluded the elaboration of the Basic Environmental Project for a Transmission Line. The subsidiary also developed all the environmental subprograms provided for in the Environmental Management Program for hydroelectric projects in operation, such as monitoring of water quality, monitoring of ichthyofauna, environmental inspection of reservoirs, monitoring of Permanent Preservation Areas, among others.

COPEL Telecomunicações concentrates its operations in Paraná and shares the infrastructure of COPEL's transmission and distribution subsidiaries, and therefore has the same impacts as these structures are subject to.

Among the impacts to the fauna, the collision or electrocution of birds is a direct impact of the projects of energy distribution. The main species affected are those of gregarious habits, such as water birds of medium to large size, whereas death by electrocution is more common. This impact can be verified in the LDAT 138 kV Marechal Cândido Rondon - Santa Helena, which is 65 km long, but whose greatest collision potential occurs in specific environments, such as rivers and wetlands (approximately 2.5 km), according to the Simplified Environmental Report. However, the problem can be minimized by means of line signaling in places with the greatest possibility of accidents,

The Avifauna and Chiropter fauna Monitoring Program of LDAT 138 kV Marechal Cândido Rondon - Santa Helena consists of a series of steps to evaluate the impact of lines in the community of birds and bats. For birdlife, the program includes a description of the bird community and the ecosystems through which the LDAT transposes, as well as the evaluation of the need for installation of flags, the selection of priority areas and the subsequent monitoring of the behavior of the birds in relation to the signaling. For chiropter fauna, the program includes the monitoring of the abundance of bats in field campaigns before and after the implementation of LDAT.

In 2018, the first stage of the Bird Monitoring Program was carried out. Diagnosis was made of locations with the greatest potential for accidents, which will be monitored in a second phase of the study, performed the first two steps of chiropter fauna monitoring.

Also, in relation to fauna, the "Technical Instruction of the Environment 10-21: Management of Africanized bees, wasps and native social bees" was published internally, in January 2018, which characterizes the three groups, addressing legal aspects and specific measures. The instruction was constructed from the need to define procedure and guide actions in situations of encounter with these insects. To effective the technical industry was conducted the Bees Management course, with the participation of 20 employees.



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26.6.2. COPEL Distribuição Case

COPEL Distribuição was published in 2018 by the Center for Sustainability Studies (GVces) of the Business Administration School of Fundação Getúlio Vargas (FGV EAESP), in order to compare impacts and externalities between the use of integrated vegetation management in electrical systems and the use of mowing.

In order to maintain the safety and quality of the energy supply, the concessionaires periodically carry out the maintenance of the bands of passage of lines and distribution grids of energy in the rural areas by means of manual or mechanized spraying, which generally results in the complete removal of the vegetation, The electric sector has been studying how to replace this practice by Integrated Management of Vegetation (MIV), a set of conduits aimed at establishing, in the long term, a community of plants whose growth characteristics do not interfere in the operational performance of the electrical installations or that demand the minimum of interventions, besides providing protection for the soil and shelter and feeding for the fauna, among other benefits.

The practice has proven to be more advantageous than traditional scouring, in addition to presenting a more favorable emissions MIV, the more lenient and spaced interventions allow greater soil conservation, both in physicochemical properties

and in its organic carbon stock. It has not been possible to estimate, so far, the erosion rate valuation due to data restriction, however, this index confirms the benefits of IVM compared to mowing. Management also provides herbaceous-shrub cover, which provides soil protection against erosion.

MIV can also contribute to wildlife habitat, forest fire prevention and the provision of medicinal and non-timber products. Thus, it can be confirmed that integrated vegetation management maintains, in part, the environmental benefits that the native vegetation provides, unlike the mowing, which practically cancels them.

Although the results of the IVM are favorable, due to the restrictions found for full assessment due to the unavailability of data, this topic was included within a proposed research and development project on integrated vegetation management, which is being elaborated.

The IVM is also underway in the high voltage distribution lines project that passes through the Saint-Hilaire / Lange National Park (LDAT 138 Kv Fiscal Post - Matinhos, Guaratuba - Matinhos and Fiscal Post - Guaratuba), on the coast of Paraná. After implementation, analysis and approval of this project, the measure may be replicated to other conservation units.

26.6.3. Protected Areas GRI 304-1

COPEL Distribuição and COPEL Geração e Transmissão have 82,146 km of high voltage distribution lines (69 and 138 kV) that pass through Integral Protection conservation units in the state of Paraná. These facilities, as well as their size and value for the biodiversity of the area in which they are found, are detailed in the appendices of page 229.

COPEL concludes the withdrawal of the transmission towers of the Guartelá Park

COPEL concluded in April the withdrawal of the metal towers from the transmission line that cut the Guartelá State Park and the Itaytyba Private Natural Heritage Reserve in the central region of Paraná. The disassembly and removal of the 17 towers present in the units was carried out manually, due to the difficult access to the structures.



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With the reconstruction of the Figueira - Ponta Grossa Norte line in 2017, the route was changed, in response to a request from the Environmental Institute of Paraná (IAP).

In addition to contributing to the beauty of one of the largest canyons in the world, line displacement helps protect conservation units by avoiding the environmental impact of maintenance and repair of structures. These areas make up one of the last well-preserved remnants of fields with native vegetation in the central portion of the State of Paraná. They also house a rich flora, with species rarely seen or threatened with extinction, such as imbuia (*Ocotea porosa*), ipê-roxo (*Handroanthus impetiginosus*), pinheiro-do-Paraná (*Araucaria angustifolia*), peroba (*Aspidosperma polyneuron*) and pau-marfim (*Balfourodendron riedelianum*), there are still endangered specimens of Brazilian fauna, such as the maned wolf and the brown jaguar.

In the original layout, the old line was also close to archaeological sites of rock art, which are important references of Paraná Archaeological Heritage. COPEL financed studies in several of these sites, due to the work to remove the transmission line, and stone and ceramic artifacts were found. Seven new sites of rock art were also discovered and documented, characterized by artistic paintings on rock walls.

In addition, COPEL promoted an Integrated Heritage Education Program, including a survey of intangible culture in the municipalities covered by the project and activities with students, staff, guides and tourism drivers who work in Guartelá State Park and surrounding areas also participated in training courses promoted by the Company.

All material collected and documented in the research was sent to the Laboratory of Archeology, Ethnology and Ethno-history of the State University of Maringá.

26.6.4. Forestry Compensation

Since 2012 COPEL Geração e Transmissão and the Environmental Institute of Paraná (IAP) have been working on the production of native forest seedlings for the restoration of Permanent Preservation Areas, Legal Forest Reserves and Forest Restoration Areas of the State of Paraná. COPEL assigns jobs to outsourced workers to devote themselves exclusively to the production of seedlings.

Another relevant partnership of COPEL Geração e Transmissão is with the Environmental Police Battalion (BPAMB), which guarantees agility and effectiveness in the protection actions of the permanent preservation areas around its reservoirs, acting preventively in the protection of water bodies, fauna and flora.

Still in the scope of forest compensation, COPEL GeT makes the recovery of previously degraded areas in compensation for the plant suppression necessary to implement some of its projects. As a rule, recovery projects are presented to the responsible environmental agency and, after approval, the planting of native species is carried out in areas that were previously occupied mainly by pastures, which are accompanied by maintenance and periodic surveys until they reach the stage of development in which interventions are no longer necessary.

The subsidiary is also responsible for protecting several areas that have high biodiversity value through constant monitoring. The areas recovered and protected by COPEL GeT are presented below.



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Sustainable use units		
Name	Place	Size
APA Estadual de Guaratuba	Among the municipalities of São José dos Pinhais and Tijucas do Sul (Paraná)	3,513.34 hectares
	Between the municipalities of São José dos Pinhais and Guaratuba	8,798.70 hectares
	Among the municipalities of Guaratuba, Morretes and São José dos Pinhais	812.14 hectares
APA Estadual da Escarpa Devoniana	Between the municipalities of Ponta Grossa and Carambeí	88.72 hectares
	In the municipality of Castro	40.10 hectares
Integral protection units		
Parque Estadual Pico do Marumbi	In the municipality of Morretes	225.98 hectares
Parque Estadual do Pico do Paraná	In the municipality of Antonina	865.18 hectares
Estação Ecológica Tia Chica	Between the municipalities of Cândói and Reserva do Iguaçu	423.12 hectares
Estação Ecológica Rio dos Touros	In the municipality of Pinhão	1,231.06 hectares
Parque Estadual Rio Guarani	In the municipality of Três Barras	2.235 hectares

COPEL Distribuição carried out compensatory actions for forest replanting, due to the suppression of vegetation in distribution lines and substations, donating seedlings to individuals and prefectures for planting in urban and rural areas, totaling 385 native forest seedlings for 5 municipalities and 350 seedlings of urban afforestation, for 3 municipalities.

26.6.5. Urban Forests Program

Since 2007 COPEL has supported municipalities that show interest in the planning of afforestation of public roads, contributing to the environmental improvement of cities and the reduction of interruptions in energy supply caused by the incompatibility of trees with electric systems. The seedlings are produced in the orchards of the Company.

At present, these seedlings are supplied through a donation term with charges. In 2018, 6,536 of them were delivered to 22 municipalities. The seedlings produced are also used to meet environmental licensing conditions.

In 2018 an agreement was signed with the Municipality of Maringá for urban afforestation. The partnership aims to share information to create an integrated database of georeferenced data, providing better planning and execution of tree planting, pruning and removal activities in public areas.

Regarding the management of pruning, a project of georeferencing of vegetation is underway in COPEL, whereby 738,935 thousand trees have already been counted under the energy grids in 74% of the municipalities of the State.



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COPEL is a member of the Inter-Institutional Work Committee for the evaluation of Municipal Urban Arborization Plans, coordinated by the Public Prosecutor’s Office of the State of Paraná (MP-PR) with the participation of several State institutions, through COPEL DIS, as a product of this Committee, published in 2018 the 2nd edition of the Manual for the elaboration of the Municipal Plan of Urban Arborization, revised and extended.

26.6.6. Endangered species

COPEL GeT performs different actions in relation to endangered species present in areas of influence of its ventures, according to the group to which these species belong. In the case of aquatic fauna, it maintains the continuous monitoring of the fish fauna (ichthyofauna) present in its reservoirs. This action allows to verify possible changes in the fish community throughout the operation of its hydroelectric power plants, including registration and monitoring of threatened, exotic and invasive species. In hydroelectric plants in the phase of installation, it seeks to identify the changes that occur in the ichthyofauna as a consequence of damming and altering the characteristics of the water body. Monitoring allows COPEL GeT to keep environmental agencies and society informed of long-term changes in fish populations.

For the registration of endangered species of fauna, data on fauna monitoring and rescue programs (including the ichthyofauna program)

of the different ventures, based on two sources: Official National List of Endangered Species of the Ministry of the Environment (MMA) and the Brazilian Institute for the Environment and Water Resources (IBAMA), considering the Red List of IUCN (International Union for Conservation of Nature). In this analysis, the data of endangered species at the state level were not used.

Throughout its monitoring activities, COPEL GeT registered the presence of only one species of fish in some degree of threat in the river basins where it maintains plants, as a measure of compensation for possible impacts on the ichthyofauna in Paraná, where COPEL has the most of its hydroelectric plants, the Company maintains an Experimental Station for Ichthyology Studies since 1996, whose production of fingerlings follows the conservation model and is destined for the reservoirs inserted in the Iguaçu River. The monitoring of ichthyofauna of UHE Colíder Hydroelectric Power Plant, power plant installed in the Teles Pires River basin, in Mato Grosso, has so far registered only one endangered species at a national level.

Regarding terrestrial fauna, when implementing projects, the subsidiary executes surveying and monitoring programs. It also undertakes specific rescue and relocation initiatives during works with a potential impact on terrestrial fauna, in the accomplishment of activities such as suppression of vegetation and filling of reservoirs. COPEL GeT is a pioneer in the rescue and relocation of native bees in

the State of Paraná, having started this type of activity in the installation of UHE Mauá, in the Tibagi River..

In the research and management of wild animals contracted by COPEL GeT, there were 92 species of terrestrial fauna considered under some degree of threat, considering the IUCN Red List and the Red Book of Brazilian Fauna Endangered. The validation of the data was made based on the most recent documents, checks for monitoring and rescue of fauna, in ventures in Paraná, São Paulo, Santa Catarina, Mato Grosso and Rio Grande do Norte.

As for the flora, similarly to the terrestrial fauna, programs of surveying, monitoring and rescue (germplasm) in areas affected by the projects during the installation phase are carried out by means of hiring of specialized teams. COPEL GeT also carries out actions of re-composition and maintenance of Permanent Protection Areas (APP) of its reservoirs, with native species to each region.

In order to register endangered flora species, data from the monitoring, rescue and forest restoration programs of the different enterprises were crossed based on two sources: the Official National List of Flora Species Threatened by Extinction of the Ministry of the Environment (MMA) and of the Brazilian Institute of Environment and Water Resources (IBAMA) and the IUCN Red List of Threatened Species (International Union for Conservation of Nature), there have been 62 species of flora to some degree threatened with extinction.

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Since several species, both fauna and flora, appear in the two lists used as reference in many different categories, the sum of those presented in each category is higher than the real number.

In the case of COPEL Distribuição, in the elaboration of the Simplified Environmental Report (RAS) and the Forest Inventory (IF), the species of potential occurrence in the areas of influence and those indicated for suppression are classified according to the state of conservation. A summary of the records of endangered species, according to group, list and degree of threat, composes the following table.

Level of extinction GRI 304-4	COPEL GeT	COPEL DIS
Critically endangered	12	1
Threat of extinction	36	6
Vulnerable	43	5
Almost threatened	58	10
Little worrisome	0	0
Total	149	22



Ilha do mel (Mel Island), Author: Bruno Rochembackh



infrastructure capital



27. Generation Assets

GRI EU1, EU2

COPEL operates 35 own power plants and participates in 10 other plants, including 22 hydroelectric plants, 22 wind farms and 2 thermoelectric plants, with a total installed capacity of 5,828.00 MW and a physical guarantee of 2,715.7 medium MW. In 2018, net energy production was 19,362.4 GWh.

In compliance with the regulatory requirement, COPEL was the first electricity concessionaire in the country to adopt the centralized management of generation and transmission assets, an important step in the expansion of its business, which also meant the separation of the shared asset operation. Transmission and Distribution Operation Center (COGT) is installed in Curitiba for the remote operation of the generating park and the plants for which the Company provides operating and maintenance services, as well as transmission assets. Oversees COPEL's assets in partnership, both inside and outside the State.

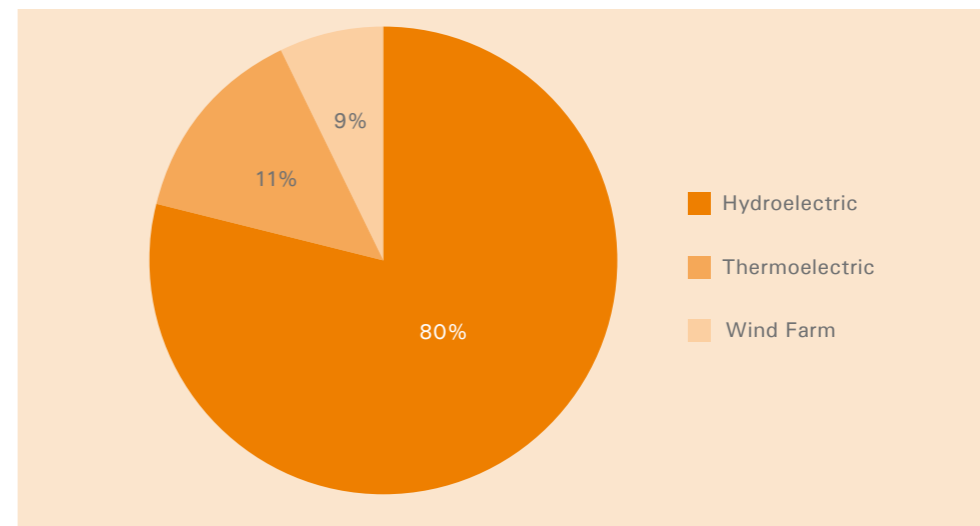
The availability and reliability of the power supply is ensured by Operation and Maintenance (O&M) processes that follow a management model based on reliability techniques with which, through the analysis of cause and effect, it is possible to define the optimal fault management to avoid or restrict the consequences of functional failures and their relationships (health, environment, safety and costs).

Know COPEL's generating park

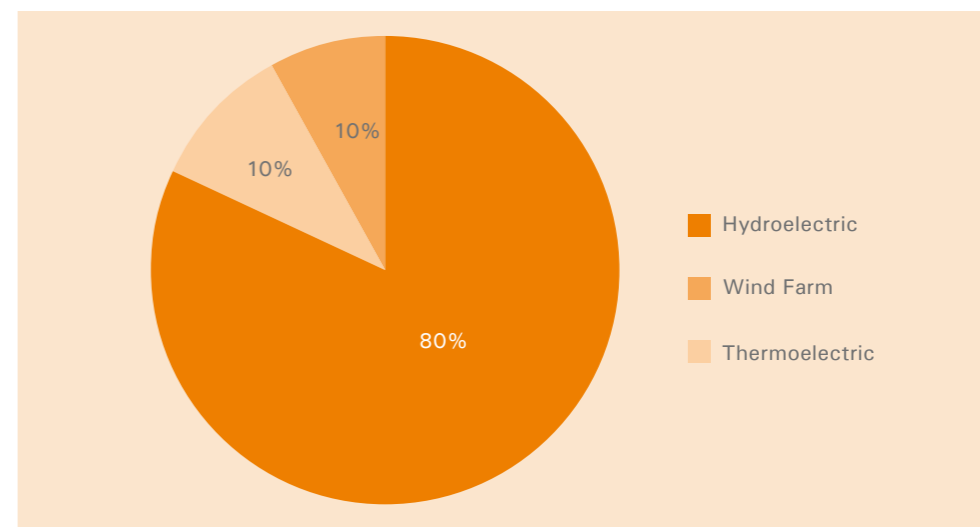
Capacity installed GRI EU1

	2017(MW)	2018(MW)
Hydroelectric Power Plants	4,722.80	4,934.40
Thermoelectric Power Plants	310.50	407.30
Wind Power	280.10	486.30
total	5,313.40	5,828.00

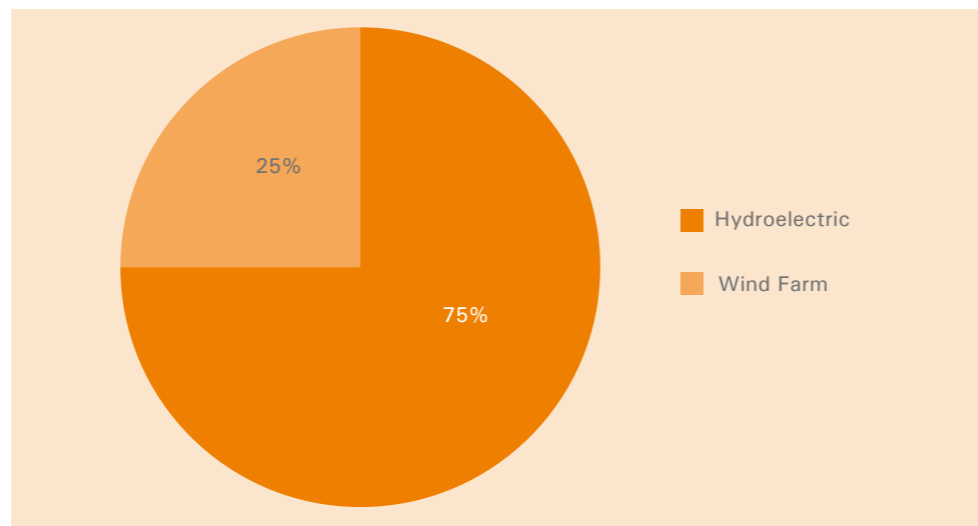
Generator park - physical guarantee by source in 2018



Generation Park project for 2019 - physical guarantee by source



Capacity under construction, by source GRI EU10



Net Power Generation

Generation Source	GWh
Hydraulics	18,009.20
Wind	1,312.03
Thermal	41.17
Total	19.362,4

27.1. POWER PLANTS AVAILABILITY

The average availability indicator of the power plants is monitored for generation activities to measure the number of hours of interruption. In 2018, this indicator showed the following results:

Average availability range GRI EU30			
	2016	2017	2018
Total planned outage hours	21,916	28,426	34,703

Average availability factor GRI EU30			
	2016	2017	2018
Total hours of forced outage (unplanned)	18,672	11,290	9,635
Own hydroelectric plants	0.92	0.96	0.95
Hydropower plants with COPEL shareholding	0.96	0.94	0.97
Thermoelectric plants	0.70	0.81	0.92
COPEL's thermoelectric plant with shareholding	0.89	0.98	0.99

27.2. HIGHLIGHTS OF GENERATION PROJECTS

27.2.1. COPEL wins bid to build power plant in Southwest

COPEL was the winner of the energy auction promoted by Aneel in August for the construction of a new small hydroelectric plant (PCH) in the Southwest of the State, with more than 1,000 projects registered. The Company plans to start construction of the Bela Vista PCH, whose construction must absorb investments of around R\$200 million.

With an installed capacity of 29 MW, the new plant will generate enough energy to supply the equivalent of the average consumption of 80 thousand residences in Paraná. The venture already has a concession granted and will be installed in Chopim River, between the municipalities of São João and Verê, with connection for the flow of energy through the substation of Dois Vizinhos.

27.2.2. Other generation projects

GRI EU10

In 2018 started in operation 130.2 MW of the Cutia complex in Rio Grande do Norte, which will total 312.9 MW. Total installed wind power is 486.3 MW.

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In the same year, construction of the 29 MW Bela Vista SHP was started, negotiated at the 28th New Energy Auction, promoted by Aneel. This plant is scheduled to start operating in 2024.

In 2019, the Colíder (300 MW) and Baixo Iguaçu (105 MW) hydroelectric power plants are expected to start operations, and the Cutia wind farm (312.9 megawatts - in December 31, 2018, 130.2 MW were already in operation).



Jayme Canet Junior Power Plant, Author: Daniela Catisti

28. TRANSMISSION AND DISTRIBUTION ASSETS

28.1. EXTENSION OF GRI EU4 TRANSMISSION LINES GRI EU4

The active participation in transmission auctions allows COPEL to be among the four largest transmission companies in the country. In September 2018, the Company purchased a circuit of 525 thousand volts between Londrina and Ivaiporã at an Eletrobras auction. The generation of immediate EBITDA of the business is competitive advantage for the Company, once the circuit is in operation and without indebtedness, entering into the assets with immediate cash generation. Later on, in October and December, COPEL received authorization from Aneel to invest R\$107 million in the expansion and reinforcement of the electric grid in several regions of Paraná.

COPEL's power transmission network currently consists of 2,521.2 km of lines and 35 substations, totaling 13 thousand MW of transforming power. Over the next three years, the company will erect more than 600 kilometers of lines in projects throughout the country.

The Company has specialized teams in electrical and electronic maintenance in equipment and protection devices, automation and control of substations, and electromechanical of transmission lines from voltage 69 to 525 kV, in addition to factory inspection and commissioning of new transmission facilities.

Through 2018, 469 kilometers of new lines were in operation. COPEL is also building three projects, which will add 1,408 kilometers of extension and 4,500 MVA of transformation capacity to the set of own lines and transmission substations and in partnership.

28.2. 28.2. HIGHLIGHTS OF TRANSMISSION PROJECTS

28.2.1. COPEL's largest line starts operating in São Paulo

In July 2018, the Araraquara II - Taubaté transmission line, a project that received R\$ 531 million in investments, including line construction and substation expansion works, started operations in São Paulo.

Operating in extra-high voltage of 500 kV, the line allows the full flow to the Southeastern region of the energy generated at the Santo Antônio and Jirau plants, which together add up to 6,868 MW of installed capacity and make up the Madeira River Complex located in Rondônia. The new venture significantly improves the reliability of the National Interconnected System (SIN) and, for COPEL, means approximately R\$30 million more in the annual revenue of Transmissão.

The new line has approximately 350 km of extension in simple circuit – COPEL most extensive in operation - and crosses 28 municipalities in the interior of São Paulo. It will be maintained a 60-meter-wide easement belt

- 30 meters for each side of the transmission line axis, and, already indemnified, landowners along the strip may planting soybeans, corn, wheat and other crops that are not high or subject to burning, as well as vegetable gardens and pastures, without affecting the conditions of safety and operation of the network.

The definition of the route took into account aerial and satellite photos, and sought to pass through areas of agriculture, fields, reforestation or small vegetation, avoiding the places of greater urban densification. Natural gaps were taken in conjunction with the use of free-standing and towers (native forests, valley bottoms and other points of greater sensitivity) and avoid vegetation removal. Environmental care has also yielded pioneering projects, such as the protection of the species of callithrix aurita - awarded case in the last National Seminar on the Production and Transmission of Electric Power (SNPTEE).

28.2.2. New high voltage line is completed between São Paulo and Minas Gerais

COPEL Geração e Transmissão has a 49% stake in Cantareira Transmissora de Energia, a concessionaire that built the Estreito - Fernão Dias LT, which still had Celeo's partnership in this project, with 51%.

The transmission line, which received R\$820 million in investments, links the Estreito substation in Ibiraci (MG) and Fernão Dias substation in Atibaia (SP), operates with 500

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thousand volts and is 342 km long. It started operation one month prior to the deadline established in the concession contract - March 5, 2018 -, contributing to the flow of energy produced at the Belo Monte Hydroelectric Power Plant in the State of Pará, to the Southeast region, thus favoring energy integration and better utilization of rainfall regimes throughout the country.

Although the region presents an unfavorable topography for projects of this nature, since it is located in the Serra da Mantiqueira (Mantiqueira Mountain), and there are roads, railroads and gas pipelines along the way, totaling 59 crossings, 745 towers and cables were installed in double circuit. The work of liberating the easement range was also challenging - along the entire extension of the enterprise, which crosses 29 municipalities, it was necessary to negotiate with 794 owners, in a region of overvalued lands. The Total Annual Revenue Allowed (RAP) project is estimated at R\$97 million.

28.2.3. Line to flow energy from Baixo Iguaçu is completed

Construction of the new transmission line connecting the Realeza Sul and Baixo Iguaçu substations in Southwestern Paraná, with 38 km of extension, the new venture helps to flow energy produced by the Baixo Iguaçu Hydroelectric Power Plant, which started generating power in 2018.

The line passes through the municipalities of Capanema and Realeza and operates in high voltage, 230,000 volts, which will relieve overloads in emergency situations in the circuits that serve the regions of Cascavel and Realeza.

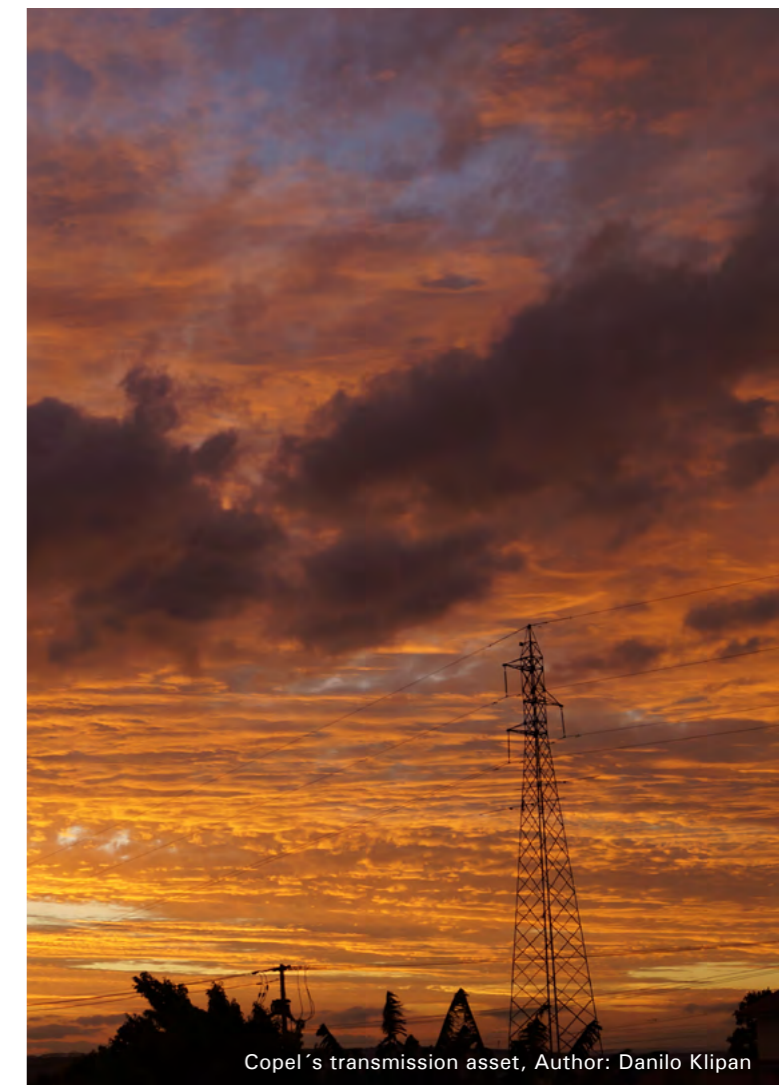
In addition to investments in this project, another R\$40 million is being invested in the construction of the new Medianeira substation, which should be ready by March 2019.

28.3. EXTENSION OF DISTRIBUTION LINES

COPEL Distribuição is responsible for the distribution of energy in Paraná to approximately 4.5 million customers in 394 municipalities, of which 392 are fully serviced. The subsidiary manages 190,000 km of distribution grids and has 2, 8 million poles and 361 substations, with installed capacity of 10,5 thousand MVA.

In 2018, new substations and high voltage lines were connected to reinforce the electrical distribution system, improving quality and increasing the availability of energy to consumers. In all, these developments added approximately 58 MVA to the distribution and 142.56 km of new distribution lines.

Distribution also has service stations in all municipalities in the concession area and provides various service channels, such as smartphone and tablet applications, virtual agency, e-mail, chat and call center (0800 51 00 116).



Copel's transmission asset, Author: Danilo Klipan



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Distribution lines GRI EU4			
Voltage level	2016	2017	2018
13.8 kV	104,556.0	105,510.6	106,172.4
34.5 kV	84,071.3	84,639.2	85,185.2
69.0 kV	695.4	866.4	751.2
138.0 kV	5,970.3	5,935.0	6,264.8
Total length (in kilometers)	195,458.5	196,951.2	198,373.6
Number of substations	364	369	369

Smart COPEL - New Integrated Center for Operations and Consumer Services

In October, COPEL Distribuição launched a new integrated center of operations and consumer services in the Novo Mundo neighborhood in Curitiba. With almost 3 thousand square meters, the unit centralizes the entire operation of the company, which was previously done in five regions of the State. Space uses the most advanced technology to meet the future of the electrical system, such as smart grids and storage and distributed generation systems.

Also, in place is a model agency for face-to-face customer service, with automated systems, sorting for simple or complex services, wireless internet access and waiting environment.

The center will house 115 employees working in the processes of System Operation, Field Team Management and Measurement Operation.



Curitiba - Smart COPEL, Author: Guilherme Pupo

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28.4. MARKET WIRE (TUSD)

In 2018 the wire market, which takes into account all consumers who accessed the distributor grid, grew 1.7%, with strong influence of the industrial class. The branches that contributed the most to this result were food, pulp & paper and wood, which together accounted for more than 50% of industrial consumption and registered an average variation of 4.8%.

The wire market reached, in 2017 and 2018, the consumption levels of the pre-crisis period. The residential and commercial classes continued to show a positive evolution, although they have not yet recovered the levels of 2014.

Power wire market								
	Number of consumers / contracts				Distributed energy (GWh)			
	2016	2017	2018	% 17/18	2016	2017	2018	% 17/18
Captive market	4,478,767	4,560,493	4,637,804	1.7	22,328	19,743	19,594	(0.8)
Concessionaires and permissions	4	3	3	-	614	521	279	(46.4)
Free consumers ¹	620	991	1,121	13.1	5,273	8,873	9,568	7.8
Wire Dealers	2	3	4	33.3	52	78	511	555.1
Wire market	4,479,393	4,561,490	4,638,932	1.7	28,267	29,215	29,952	2.5

1. Total free consumers served by COPEL Geração e Transmissão and by other suppliers within the COPEL Distribuição concession area.

28.5. CAPTIVE MARKET

The number of captive consumers invoiced by COPEL Distribuição was 1.7% higher than in December 2017, totaling 4.6 million consumers - see more details on page 97, item 20.1. In 2018 there were added to the system 77.3 thousand captive consumers.

Energy Sold (GWh)				
	2016	2017	2018	% 17/18
Residencial	6,932	7,126	7,238	1.6
Industrial	5,753	3,254	2,935	(9.8)
Commercial	5,059	4,651	4,653	-
Rural	2,179	2,257	2,288	1.4
Others	2,405	2,455	2,480	1
Total	22,328	19,743	19,594	(0.8)

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Image Bank

29. MARKETING IN THE FREE ENERGY MARKET

COPEL Comercialização aims to commercialize energy in the free market, seeking retention of customers in the COPEL group's portfolio, as well as commercializing energy for customers in other states. It also acts in the rendering of services related to this market, such as customer representation (CCEE), consultancy for migration, management in the free market of energy, modeling for generators, demand management, among other products that allow customers to operate safely in this market.

Copel Comercialização is a company approved by CCEE to act as a retailer, a mode in which a single agent represents a group of consumers without the need for them to become agents of this body.

The target market of the company is the commercialization of energy with free consumers, especially the special consumers. This strategy is linked to the tendencies of market liberalization, characterized by the detachment between the captive market tariffs and the prices practiced in the free market, which makes the price competitive.

Commercialization closed 2018 with 740 average MW of power sold in 14 states. The subsidiary's strategy is to become one of the largest marketers of the Electric Power Free Market until 2025.

30. TELECOMMUNICATIONS

GRI 203-1, 203-2

COPEL Telecomunicações provides telecommunication and communications services in general, in the Multimedia Communication Service (SCM) modality, elaborating studies and projects focused on meeting the needs of the Company and the market in general. The operation of these services is for an indefinite period, without exclusivity, at the national level.

In 2018, the subsidiary surpassed 182.5 thousand customers, and made the largest investment in its history, in the order of R\$309.4 million. In addition to the quality of services and product, the marketing strategy adopted by the company - with a focus on innovation and connection with its audiences - has also been recognized, so much that it won the Globo Network's Professionals of the Year Award, the highest award in the national advertising market.

More and more connected, Paraná people are following the trend of the telecommunications sector in Brazil, which grew by 7.9% in 2018. Driven by regional providers such as COPEL Telecom, the expansion of broadband places telecommunications services as the only one with above-average growth among the essential services. According to Anatel, in the state of Paraná, only, the number of new contracts of subscribers of broadband services grew 9.7% compared to 2017.

The search for efficient services and state-of-the-art solutions has included COPEL Telecom in a differentiated level within the sector, with a 35.48% growth in relation to the number of subscribers, with the demand on the rise and a context of improvement in the processes and efficiency of the teams, we were able to reduce costs without losing revenue.

COPEL Telecom serves all 399 municipalities of Paraná and 2 municipalities of Santa Catarina, with high-performance grid and Internet services for companies, operators and government. The subsidiary serves 84 municipalities, 82 in Paraná and 2 in Santa Catarina, with residential fiber



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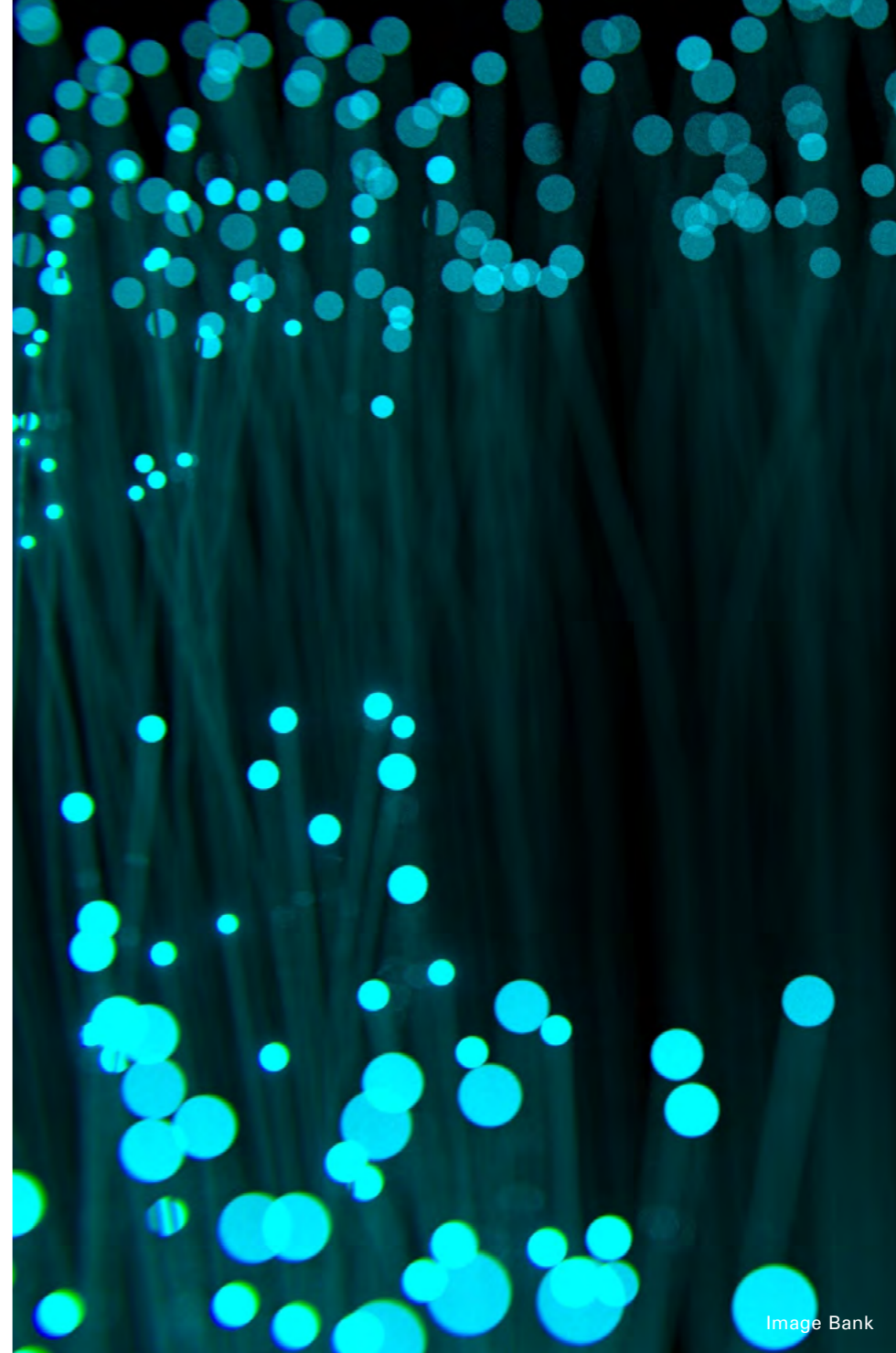
optic broadband internet. The state is the first and unique of the country to become 100% digital, with a grid that, in 2018, totaled more than 34.2 thousand km of optical cables, almost the distance of an orbit around the Earth.

The state is the first and only country to become 100% digital, with a network that in 2018 totaled more than 34.2 thousand km of optical cables, almost the distance of an orbit around the Earth.

COPEL Telecom's Internet is installed entirely in optical fiber, in fiber-to-the-home (FTTH) or fiber-to-the-office (FTTO) system, that is, where the fiber cable goes home or the consumer's office without any other type of intermediary material. This system is what ensures the high performance of the subsidiary's connection.

31. PARTICIPATIONS

COPEL has a corporate interest and association with companies, consortia and other institutions that operate in several sectors, in addition to the energy area, as presented in Notes 1.1 and 2 of the Financial Statements.





financial capital



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32. ECONOMIC AND FINANCIAL PERFORMANCE

GRI 103-1, 103-2, 103-3

Economic and financial performance is one of the main dimensions in generating value for the Company. It provides financial returns to shareholders and generates positive effects for employees, government and regulatory bodies. Influence COPEL’s operational and investment capacity, as well as execution of strategic guidelines, including business expansion in a sustainable and cost-effective way, achieving excellence in costs, process definition and quality assurance, and the allocation of resources for research, development and innovation. strategic guidelines related to human capital and the valorization of the workforce, as it allows the provision of training and continuous training, development and retention of talent and knowledge in the Company, and the promotion of actions to improve work safety and quality of life, As COPEL is a mixed-capital company controlled by the Paraná government, its operations and its economic and financial performance have a significant impact on the state’s commercial and industrial growth.

COPEL systematically monitors the value of its shares, the market reports with the researches’ recommendations and the risk ratings related to the fund-raising process. It also monitors the perception of the capital market over COPEL, its performance and strategies and, subsequently, subsidizes Management with the information, opinions and expectations raised, comparing them with those of other companies in the sector, mainly regarding the generation of value for shareholders. investor relations and promoted public events and meetings.

The Company announces its results quarterly. As a listed publicly traded company, COPEL is obliged by the current regulations to practice open, clear and accessible communication for internal and external audiences, especially with regard to matters of interest to the capital market. This communication is based on the principles of transparency, information symmetry and fairness of treatment, in compliance with Brazilian and US law, as well as the specific regulations of the Brazilian Securities and Exchange Commission (CVM) and the Securities and Exchange Commission (SEC). In this sense, the Company seeks to disclose both

the positive and negative aspects, favorable or unfavorable, in due time, making public any information that may affect the prices of the Company’s securities and / or influence the decision of the investors, the relevant public information and makes them available on the [Investor Relations](#) website.





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COPEL should, by commitment, present adequate economic and financial performance and within the expectations of its stakeholders, as published in its 20F Report, a document to be presented annually by companies listed on US stock exchanges in a pattern imposed by the SEC. The Company contracted loans and financing with clauses that require the maintenance of economic and financial indices within pre-established parameters, with an annual compliance requirement, among other conditions. Noncompliance may entail early maturity of debts and / or fines.

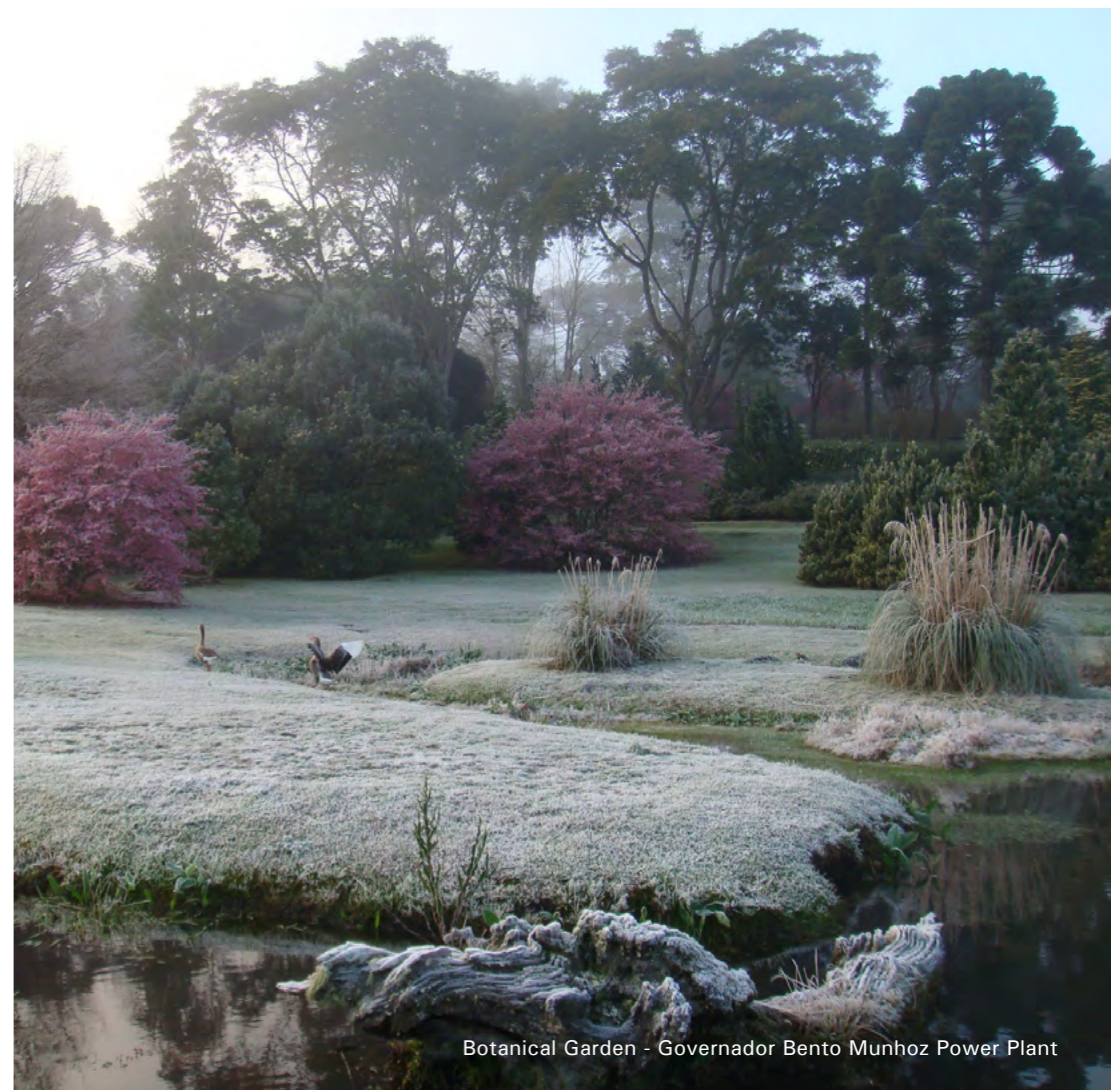
In the case of COPEL DIS Public Electric Power Distribution Concession Agreements, there are also economic and financial efficiency and quality constraints, and the infraction for two consecutive years or at the end of the first five years period entails. From the sixth year of conclusion of the contract, breach of the quality criteria for three consecutive years or efficiency for two consecutive years implies the opening of the process of forfeiture.

Management of economic and financial performance is based on the Management Excellence Model (MEG) of the National Quality Foundation (FNQ). The financial targets are based on the Annual Corporate Budget, prepared by the wholly-owned subsidiaries and COPEL (Holding), and approved by the Board of Directors (DAC). They comprise the Management Agreement entered into by COPEL's companies.

The monitoring of the accomplishment of these goals is done monthly during the Meetings of Critical Analysis or its equivalents. The control is done through the Strategic Management System (SGE), the goals

which are not achieved become the subject of monitoring known as Three Generations (Planned, Executed, Problem Points and Proposition), which results in corrective actions. There are also Strategic Analysis Meetings (SAR) held among the boards to analyze the performance of strategies and business. The Nossa Energia Program, in its results axis, and Profit Sharing and Results complement the system to monitor this performance.

The financial and economic performance report is made monthly to the DAC by the Financial Committee, provided by the Finance and Investor Relations Department. It is the responsibility of the IR area to coordinate communication with the capital market through teleconferences, public meetings, shows and national and international events with associations and stock exchanges. The investor relations website is kept up to date.



Botanical Garden - Governador Bento Munhoz Power Plant

Risks related to economic-financial performance:

- » Credit risk and liquidity
- » Consumer debt
- » Failure to meet the economic-financial efficiency criterion of the Concession Agreement
- » Fall of business profitability
- » Fall of profitability of projects (new business)
- » Economic instability

Strategic objectives:

- » Expand its business in a sustainable and profitable way, and achieve excellence in costs, processes and quality
- » Be excellent in managing OPEX and CAPEX
- » Maximize the return on its portfolio, improving profitability and cash generation
- » Maximize the value of the company in a sustainable way
- » Increase operational efficiency

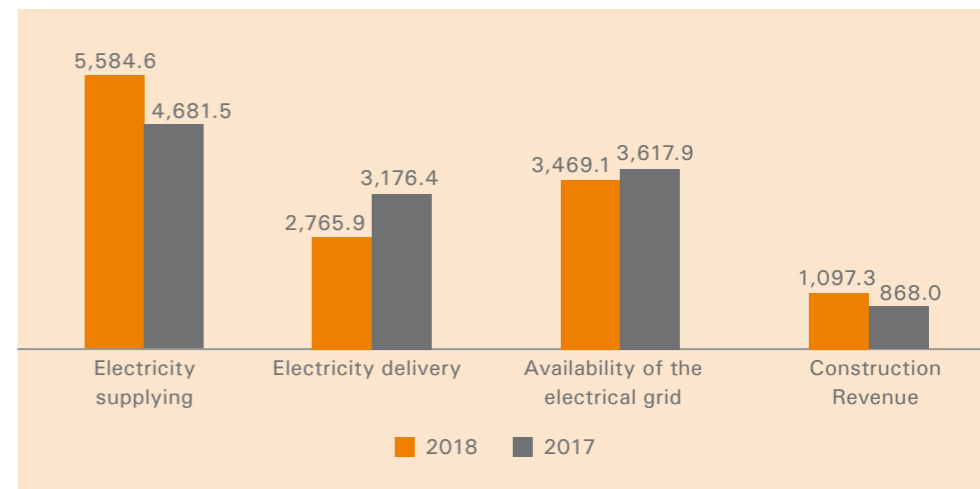
Goal:

- » Higher Return on Shareholders' Equity

32.1. NET OPERATING REVENUE

In 2018 COPEL recorded a Net Operating Revenue of R\$14.93 billion, an increase of R\$910.3 million, representing a 6.5% increase compared to 2017. **GRI 102-7**

The variation presented was due to the following factors:



1) an increase of R\$867.1 million in Electricity Supply Revenue, mainly due to the effects of the 2018 Annual Tariff Adjustment (RTA), which re-adjusted the energy tariff by 15.61% from 24 June 2018 - compared to RTA 2017 of 10.28% from January to June -, and the growth of the merchant's operations in 2018;

2) a reduction of R\$410.5 million in Electricity Supply, mainly due to the decrease in revenues in the Electric Energy Trading Chamber (CCEE), due to the lower settlement price of the average differences in the period, from R\$287.62 per MWh in 2018, compared to R\$318.15 per MWh in 2017, and to the UTE Araucária dispatch in 2017;

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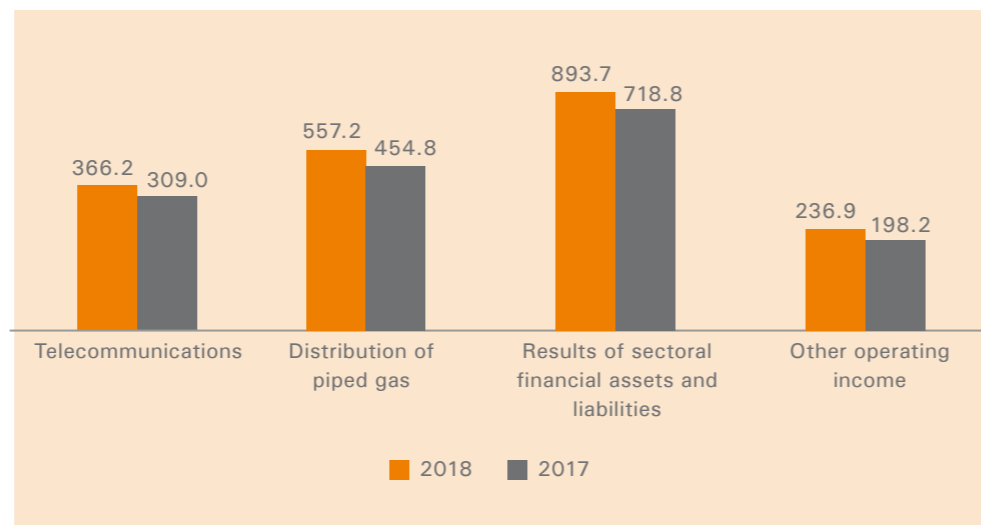
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3) a reduction of R\$148.8 million in Electric Grid Availability Revenue, mainly impacted by the recognition of the adjustment of the definitive report of the Basic Network of the Existing System (RBSE) in 2017, from R\$183.0 million. In addition, in 2018, only the asset update was recognized;

4) an increase of R\$229.3 million in Construction Revenue. The Company records revenues related to the construction or improvement of the infrastructure used to provide distribution, electric power and gas transmission services, which totaled R\$1,097.3 million in 2018 and R\$868.0 million in 2017. These corresponding expenses are recognized in the statement of income for the period as Construction costs, when incurred;



5) an increase of R\$57.2 million in Telecommunications Revenue, mainly due to the increase in the number of customers, especially in the retail market, with the COPEL Fibra product;

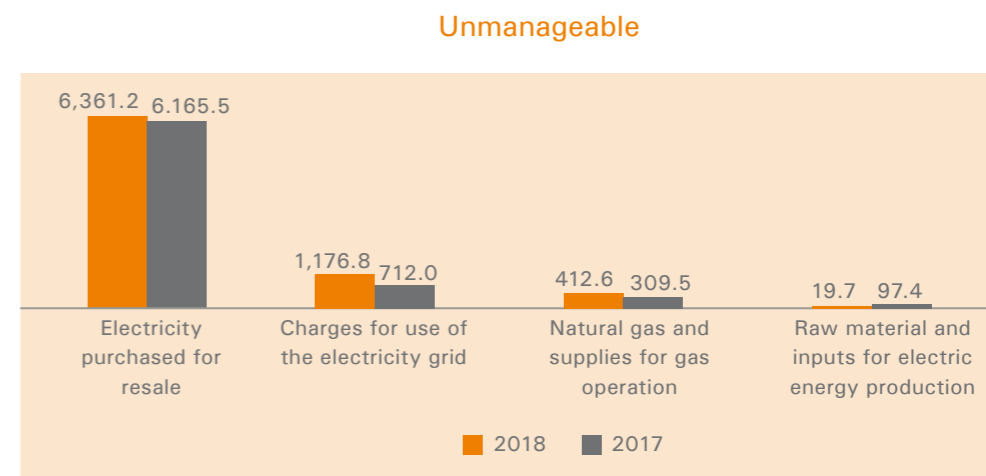
6) an increase of R\$102.4 million in Piped Gas Distribution Revenue, impacted by the 6.0% gas sales growth in volume consumed in relation to the previous year;

7) an increase of R\$174.9 million in the Result of financial assets and liabilities, mainly due to the higher exposure to electricity purchased for resale; and

8) an increase of R\$38.7 million in Other Operating Revenues, reflecting the increase in service income and rental and rents revenue, offset by the lower variation in the fair value of the concession's assets - approximately R\$9,6 million.

32.2. OPERATING COSTS AND EXPENSES

In 2018, COPEL presented the following variation in relation to non-manageable and manageable costs and expenses:



1) an increase of R\$195.7 million in Electricity Purchased for Resale, mainly due to the 29.1% increase in energy purchases related to the merchant;

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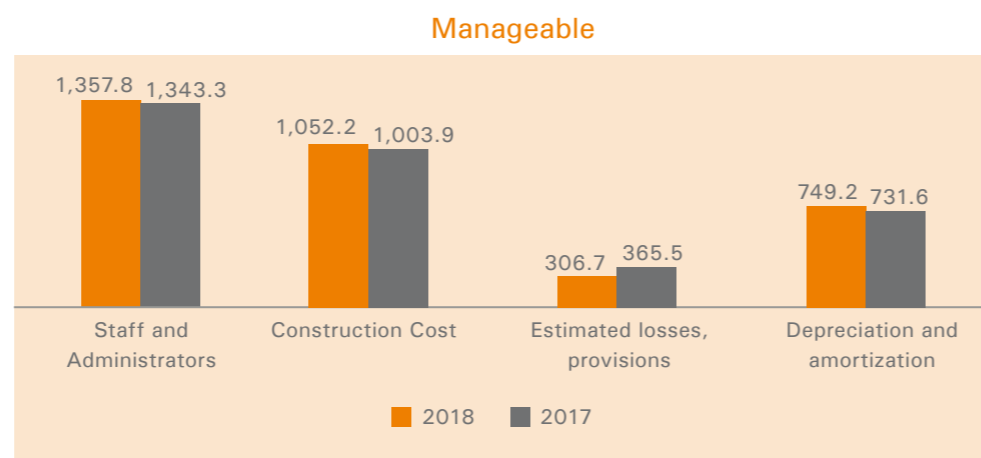
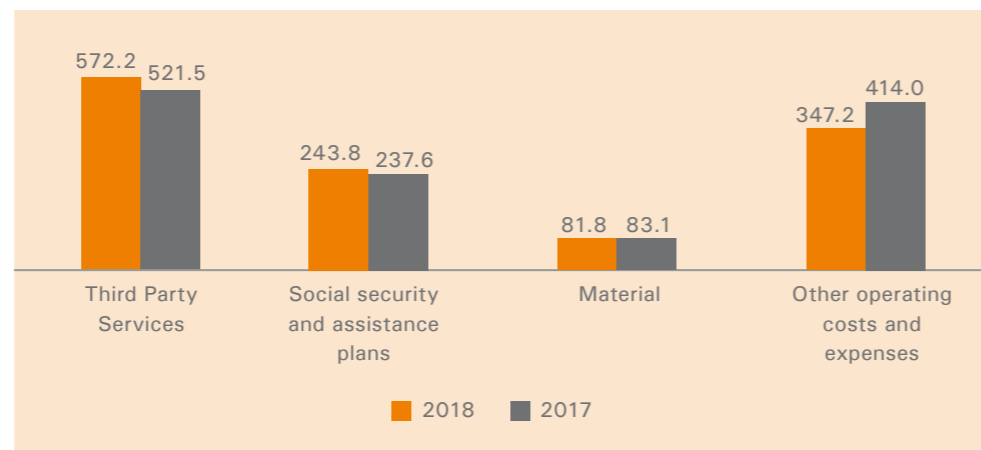
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2) an increase of R\$464.8 million in charges for the use of the electricity grid, mainly due to the tariff increase resulting from the renewals of the transmission concessions of the RBSE assets;

3) an increase of R\$103.1 million in Natural Gas and gas operation inputs due, mainly, to the variation of the US dollar;



4) increase of R\$14.5 million in Personnel and Administrators, reflecting the salary readjustment according to a collective bargaining agreement of 3.97%, in October 2018 (1.63% in 2017), a R\$15.8 million the provision for indemnification for voluntary redundancies and retirements, and the higher value of Profit Sharing (PLR), offset by the reduction in the number of employees and by the reduction of costs;

5) increase in the Construction Cost, from R\$1,003.9 million in 2017 to R\$1,052.2 million in 2018, reflecting investments in transmission, distribution and Compagas assets;

6) a decrease of R\$58.8 million in Estimated Losses, Provisions and Reversals, mainly due to the reversal of a provision for litigation related to indemnification of third parties, in the amount of R\$90.2 million;

7) increase of R\$50.7 million in Third Party Services, due to the higher value in electrical system maintenance, communication, processing, data transmission and consulting and auditing; and

8) increase of R\$6.2 million in Social Security and Assistance Plans, due to the readjustment of the monthly care plans.

32.3. EBTIDA

The Company's Ebitda in 2018 was R\$3.1 billion, an increase of R\$270.3 million compared to 2017, which represents a 9.4% increase.

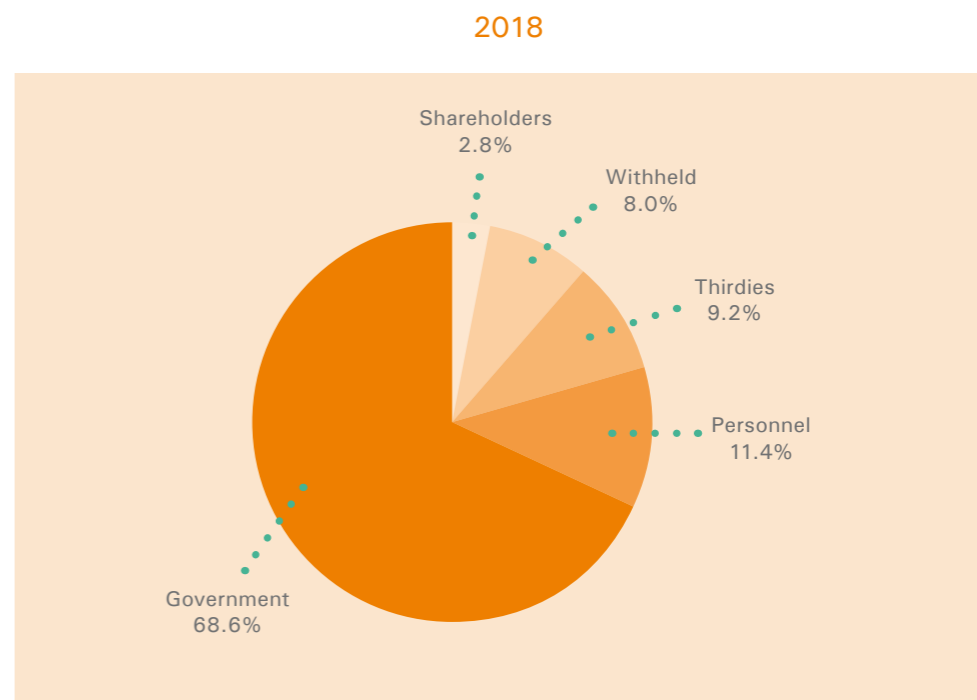
Consolidated (R\$ million)			
	2016	2017	2018
(represented)	2017	2018	580,0
IRPJ e CSLL	589.3	380.0	580.0
Financial expenses (income), net	594.6	748.4	438.1
Ebit	1,988.8	2,141.3	2,394.1
Depreciation and amortization	708.3	731.6	749.2
Ebitda	2,697.1	2,873.0	3,143.3
Net operating revenue - ROL	13,101.8	14,024.6	14,934.8
Ebitda Margin% (Ebitda / ROL)	20,6%	20,5%	21,0%

32.4. 32.4. FINANCIAL RESULT

The financial result increased R\$310.4 million, mainly due to the 16.4% increase in financial income, due to interest and monetary variation on the transfer to the Clearing House Account (CRC) and the recognition of credits and a reduction of 13.5% in financial expenses, as a consequence of the lower amount of monetary, exchange and debt.

32.5. ADDED VALUE GRI 201-1

In 2018, COPEL recorded R\$13.37 billion in Added Value, a total of 13.5% higher than in the previous year. The full statement of the financial statements (pages 10 and 11). The retained economic value, calculated by subtracting the added value from the direct economic value generated (considering the Net Operating Revenue), was approximately R\$1.56 billion.



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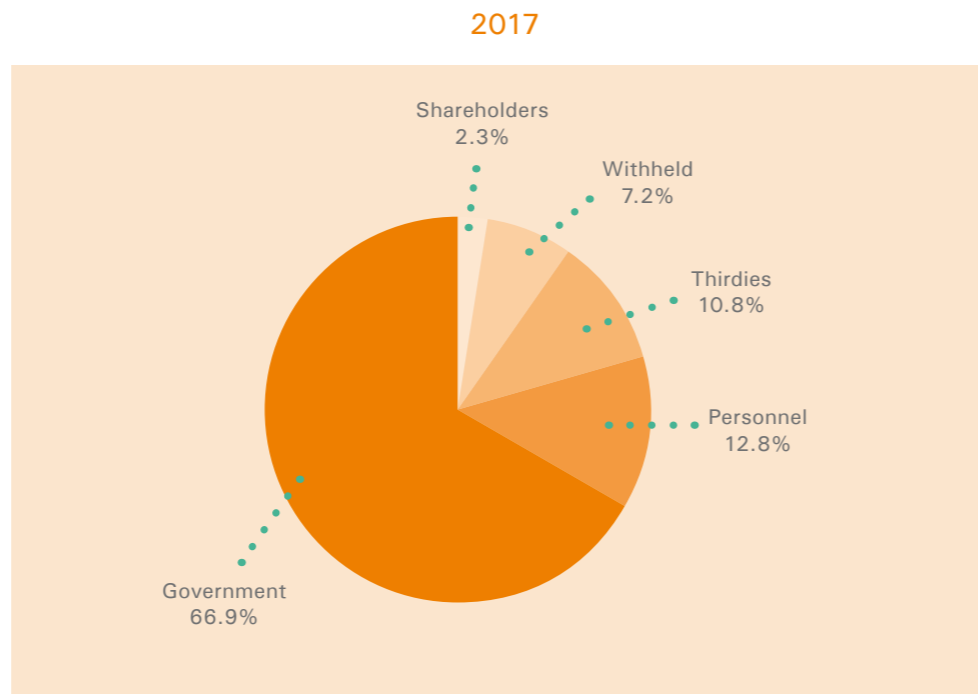
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32.6. INDEBTEDNESS

The Company finances liquidity and capital requirements mainly through resources provided by operations and through external financing, aiming at the expansion and modernization of businesses related to generation, transmission, commercialization and distribution of energy, as well as telecommunications.

It is important to emphasize that the Company seeks to invest in projects, for which it uses lines of financing available in the market and that make sense in COPEL's capital structure regarding financial leverage in relation to the return of projects, the available cash, will be sufficient to meet the investment plan for the year.

Payments in the year totaled R\$3,407.80 million, of which R\$2,617.8 million was principal and R\$790.1 million of charges.

32.7. NET PROFIT

In 2018, the net income attributable to the controlling company's shareholders was R\$1,407 million, 36.1% higher than the previous year, of R\$1,033.6 million.

32.8. CONSUMER DEBT

In December 2018, COPEL Distribuição's consumer defaults were R\$238.7 million, equivalent to 1.44% of its revenues, while in 2017 it reached R\$226.5 million, 1.52% of revenues.

Another indicator of control of the Company is that of the Brazilian Association of Electric Power Distributors (Abradee), whose methodology considers debts past due from 1 to 90 days. Although market expectations confirmed the end of the recession, 2018 was marked by reflecting the crisis, such as unemployment and a low level of production. With this, the default indicators, presented by the corporate default rates and Abradee, obtained different variations, as shown in the chart below:

Indicator	2016	2017	2018	% 17-18
Debt Abradee	2.18%	2.58%	2.69%	4.26%
Debt Company	1.61%	1.52%	1.44%	-5.26%

32.9. INVESTMENTS

COPEL invested R\$2.57 billion in 2018, in accordance with the planning approved by the Company's Board of Directors and communicated to the market in December 2017. Among the works carried out, it is worth highlighting the strengthening of transmission and distribution systems in the state of Paraná, with the construction of 16 new substations.

Six hundred and ninety-six million were allocated to the energy distribution segment, to cope with the expansion and modernization of COPEL's network, as well as the maintenance and improvement of quality

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indicators. In addition to three substations, works were begun in ten other units, one in the capital and in the municipalities of Prudentópolis, Itaperuçu, Paranapoema, Ventania, Francisco Beltrão, Iguaçu, São Miguel do Iguaçu, Marechal Cândido Rondon and Joaquim Távora.

In the scope of generation and transmission, R\$729.3 million of the investment plan were allocated to completion of works in progress - in the case of the revitalization of the Figueira Plant and the construction of the Baixo Iguaçu Plant and of the Medianeira Norte, Curitiba Centro and Andirá Leste substations - in addition to the start of the Baixo Iguaçu- Realeza Sul transmission line project, whose total investment is estimated at 2.3 billion.

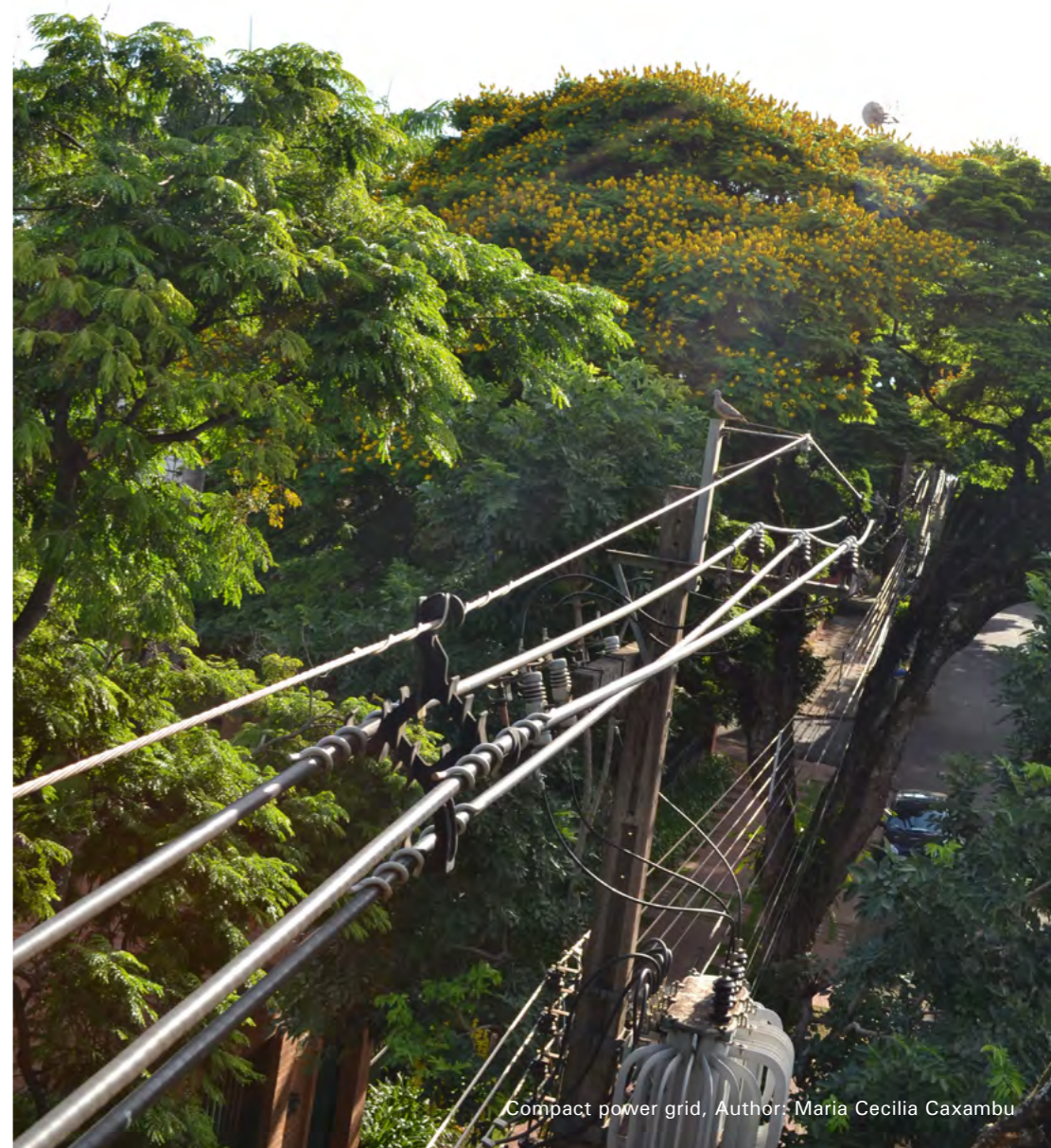
Finally, the telecommunications segment received R\$309.4 million to guarantee the expansion of the customer base, as well as the technological upgrades inherent to the business.

In December 2018, the investment program for 2019 was approved during the 184th ordinary meeting of the Board of Directors and updated at the 186th regular meeting of the same body. The following are the investments made and projected:

	Accomplished		Variation %	Expected
Companies (R \$ million)	2017	2018	2017-2018	2019
Geração e Transmissão ¹	1,071.3	729.3	(31.9)	794.8
Distribuição	630.4	696.0	10.4	835.0
Telecomunicações	241.1	309.4	28.3	290.2
Cutia	566.0	781.3	38.0	59.2
Others ¹	-	53.7	-	14.3
Total	2,508.8	2,569.7	2.4	1,993.5

1. Regarding COPEL's participation in the Enterprise

2. Includes COPEL Renováveis, São Bento Energia, COPEL Brisa Potiguar, SPE Voltália São Miguel do Gostoso, SPE Paraná Gás, SPE Dois Saltos, COPEL Comercialization, COPEL Renováveis and COPEL (Holding).



Compact power grid. Author: Maria Cecilia Caxambu



GRI content index



GRI Content Index

GRI 102-55

COPEL Comercialização data related to employee management and environmental management are controlled by COPEL (Holding), since this subsidiary is located in the same physical space and performs only administrative and managerial activities.

<i>GRI Standards</i>	Disclosure	Answers / Complementation / Comments	Report page	Omission	External verification
GRI 101: 2016 FOUNDATION					
GRI 102: DISCLOSURES 2016 GENERAL					
ORGANIZATIONAL PRO-FILE					
	GRI 102-1	Name of organization		Cover	x
	GRI 102-2	Activities, brands, products and services		2, 21, 23	x
	GRI 102-3	Organization headquarters location	Rua Coronel Dulcídio, 800, Bairro Batel, Curitiba (PR)	21	x
	GRI 102-4	Organization headquarters location		21	x
	GRI 102-5	Nature of ownership and legal form of organization		21	

For the Materiality Disclosures Service, GRI Services has reviewed whether the GRI Content Index is presented clearly and whether the references for Disclosures 102-40 to 102-49 are in line with the appropriate sections in the report body.





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ETHICS AND INTEGRITY	Disclosure	Answers / Complementation / Comments	Report page	Omission	External verification
GRI 102: DISCLOSURES 2016 GENERAL					
ORGANIZATIONAL PROFILE					
	GRI 102-6	Markets served		21, 22	x
	GRI 102-7	Organization size		2, 21, 67, 156	x
	GRI 102-8	Information about employees		2, 67, 68	x
	GRI 102-9	Supply chain	In 2018 COPEL Holding contracted 260 suppliers. COPEL Holding did not control the total number of suppliers in its supply chain, and there is currently no action planned to begin with R\$47.769 thousand. COPEL Comercialização contracted 64 suppliers in 2018 and allocated R\$3,399 thousand to its supply chain. For information on COPEL DIS and COPEL GeT, consult the sustainability reports of these wholly-owned subsidiaries.	103	x
	GRI 102-10	Main changes regarding	On August 30, 2018, COPEL GeT entered into an Ex-change of Shares with Eletrosul in the joint ventures with the West Coast Energy Transmission Company S/A (51% COPEL GeT and 49% Eletrosul), Marumbi enterprises, and Eletrosul now holds a 100% interest in Transmissora Sul Brasileira. On August 31, COPEL GeT, through the Consórcio Bela Vista Geração, participated in the A-6 auction and sold 14.7 MW of the Bela Vista SHP, at a price of R\$195.70 / MWh. After this operation, the subsidiary now holds a 99.9% interest in the capital of PCH Bela Vista.		x



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GRI 102: DISCLOSURES 2016 GENERAL					
ORGANIZATIONAL PROFILE					
	GRI 102-11	Precautionary Principle			x
	GRI 102-12	External Initiatives			x
	GRI 102-13	Affiliations to associations			x
STRATEGY					
	GRI 102-14	Message from the CEO			x
	GRI 102-15	Description of key impacts, risks and opportunities		42, 56, 70, 114, 115, 120, 121, 125, 127, 136	x
ETHICS AND INTEGRITY					
	GRI 102-16	Values, principles, standards and norms of conduct		27, 37	x
	GRI 102-17	Ethical Counseling Mechanisms and Concerns		40	x



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GRI 102: DISCLOSURES 2016 GENERAL					
GOVERNANCE					
	GRI 102-18	Governance Structure	In April and May of 2018, following instructions from the Majority Shareholder, there was a change in the Executive Board of COPEL (Holding), replacing the Chief Executive Officer, the Corporate Management Officer, the Legal and Institutional Relations Officer, the Business Development Officer, and the Director of Governance, Risk and Compliance. The composition of these bodies can be checked on the link	31	x
	GRI 102-19	Delegation of authority	The competence to deliberate on economic, environmental and social matters is defined in COPEL's Bylaws and detailed in the Internal Regulations of the Board of Directors. The competencies of the subordinate areas of each executive board are established in Organization Norms - NCO, and NCO approval levels - Level of Competence		x



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GRI 102: DISCLOSURES 2016 GENERAL					
GOVERNANCE					
	GRI 102-20	<p>Executive level responsibility for economic, environmental and social issues</p>	<p>There are two directories in the Holding with executive functions related to economic, social and environmental issues. It is incumbent upon the Chief Financial and Investor Relations Director to coordinate matters relating to management and economic, financial, tax, accounting, budgetary, cost, property and investment insurance and investments in the financial market of the Company and its wholly-owned subsidiaries; define the economic-financial guidelines for the acquisition and participation of the Company and its wholly-owned subsidiaries in businesses of its interest; and coordinate activities of economic and financial control of the companies in which the Company and its wholly-owned subsidiaries hold, directly or indirectly.</p> <p>The Legal and Institutional Relations Director is responsible for defining and coordinating the social and environmental corporate social responsibility programs of the Company and its wholly-owned subsidiaries.</p> <p>Both boards report directly to the Board of Directors, which is COPEL's highest corporate governance body.</p>		x
	GRI 102-21	<p>Stakeholder consultation on economic, environmental and Social questions</p>	7, 70, 93, 94		x



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GRI 102: DISCLOSURES 2016 GENERAL						
GOVERNANCE						
	GRI 102-22	Composition of the highest governance body and its committees	For more information on the functions of each body and its members, and on competencies related to environmental, social and economic issues, see the Bylaws and Internal Regulations on the link . Composition by gender, independence and stakeholder participation: Board of Directors: 9 members, 3 women and 5 men (1 position is vacant), 30% of independent members, 6 members representing majority shareholders (Government and BNDESPAR), 2 minority shareholders and 1 of employees. General Assembly: members representing the majority and minority shareholders. Fiscal Council: 1 woman and 4 male directors; and 5 alternate directors, 3 representatives of the controlling shareholder and 2 of the minority shareholders. Audit Committee: 2 women and 3 men, with independent majority, according to Art, 48 § 2 of COPEL's Bylaws, 5 members representing majority shareholders, Nominating and Evaluation Committee: 5 members, of which 3 are representatives of the controlling shareholder and 2 of the minority shareholders.	31, 34		x
	GRI 102-23	President of the highest organ of governance	Pursuant to article 19 of the Bylaws, paragraph 2, the Chairman of the Board of Directors does not also have COPEL's executive position.	34		x



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GRI Standards	Disclosure	Answers / Complementation / Comments	Report page	Omission	External verification
GRI 102: DISCLOSURES 2016 GENERAL					
GOVERNANCE					
	GRI 102-24	Appointment and selection for the highest governance body			
		<p>COPEL's Nomination Policy (NPC 0315) has as one of its principles the promotion of diversity, as established in Item 3,2,8: "Diversity, recognize the importance of the diversity of training, qualifications and experiences, including in relation to gender, religion, age and race. "The theme is also present in the administrative standard for the appointment of members of statutory bodies (NAC 030311), item 4,2,2:" In the overall composition of the Council</p> <p>the diversity and complementarity of professional experiences among those indicated, as well as the percentage of established in their respective by-laws and current legislation, "</p> <p>The independence of the CAD members follows the criteria set forth in Laws 6,404 / 1976 and 13,303 / 2016, the normative deliberations of the State Companies Control Council (CCEE), the Bylaws, the Indication Policy and NAC 030311, as a capital company also considers rule 10A-3 of the Securities Exchange Act and the Sarbanes-Oxley Act.</p> <p>As COPEL's majority shareholder, the Paraná Government is involved in the process of nominating and selecting the members of the CAD.</p>	35		x
	GRI 102-25	Interest conflicts			
			33		x



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GRI Standards	Disclosure	Answers / Complementation / Comments	Report page	Omission	External verification
GRI 102: DISCLOSURES 2016 GENERAL					
GOVERNANCE					
GRI 102-26	Role of the highest governance body in defining purpose, values and strategy	The attributions of the Board of Directors in the development, approval and updating of the purpose, mission statement, vision and values, and definition of strategies, policies and goals related to economic, environmental and social themes of the organization are provided for in the Bylaws of COPEL, Art. 30 "Attributions".			x
GRI 102-27	Knowledge and development of the highest governance body	COPEL periodically promotes training for the members of the Corporate Board of Directors and of the subsidiaries. In 2018, these trainings addressed social issues related to compliance, management, exercise of the function, human rights, among others.	36		x
GRI 102-28	Evaluation of the performance of the highest governance body		35		x
GRI 102-29	Identification and management of economic, environmental and social impacts		42, 56, 70, 114, 115, 120, 121, 125, 127, 136		x
GRI 102-30	Role of the highest governance body in defining purpose, values and strategy	Among the attributions of COPEL Board of Directors is to analyze and approve the Company's strategic planning, which includes the analysis of scenarios and risks. The CAD also approves the policies, and their respective alterations, aimed at risk management. It is also the responsibility of the entity, to implement and supervise the risk management and internal control systems established for the prevention and mitigation of the main risks to which the Company is exposed, including risks related to the integrity of the accounting and financial information and those related to the occurrence of corruption and fraud, the CAD annually reviews compliance with the goals and results in the execution of the business plan and the long-term strategy, and shall publish its conclusions and inform them to the Legislative Assembly and the State Court of Auditors, except for the information of a strategic nature whose disclosure may be evidently detrimental to the Company's interest. These and other responsibilities are detailed in article 30 of the Bylaws.	42		x



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GRI 102: DISCLOSURES 2016 GENERAL					
GOVERNANCE					
	GRI 102-31	Assessment of economic, environmental and social matters			x
	GRI 102-32	Role of the highest governance body in the drafting sustainability reports			x



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GRI 102: DISCLOSURES 2016 GENERAL					
GOVERNANCE					
	GRI 102-33	Communication of critical concerns			x
		<p>Among its duties, the Statutory Audit Committee has to propose to the Board of Directors of COPEL (Holding) the promotion of actions aimed at:</p> <ul style="list-style-type: none"> - internal disclosure of procedures for receiving and processing information on relevant errors or frauds relating to accounting, auditing and internal controls, as well as noncompliance with legal and regulatory provisions and internal rules, providing for specific procedures for the protection of the informant, such as anonymity and the confidentiality of information; - annually monitor the quality and integrity of internal control mechanisms, financial statements and disseminated information and measurements; - evaluating and monitoring, quarterly or on a case-by-case basis, with the administration and Internal Audit, the adequacy of transactions with related parties in accordance with relevant policies; - evaluate and monitor risk exposures annually. <p>The Statutory Audit Committee shall, individually or jointly with the independent auditing firm hired by the Company, formally communicate to the management bodies, within a maximum of three business days of its identification, the existence or evidence of: non-observance of legal and regulatory norms which jeopardize the continuity of the Company's business; frauds of any value perpetrated by the Administration; relevant fraud perpetrated by employees, or third parties; and errors that result in material misstatements in the financial and accounting statements.</p>			



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GRI 102: DISCLOSURES 2016 GENERAL					
GOVERNANCE					
GRI 102-34	Nature and total number of critical concerns	1 Report of possible leakage or misuse of information 1 Report of possible receipt of gifts, treats or courtesies 2 Reports of conduct of manager / director 4 Reports of possible bribery / bribery 5 Reports of possible violation of laws 6 Reports of possible theft, robbery or material misuse 7 Reports of Possible Acts of Bullying 8 Reports of Possible Fraud 17 Reports of possible violations of internal norms, policies and procedures 21 Reports of possible irregularities in contracts / tenders 28 Reports of possible conflicts of interest / favoring Total = 100			x
GRI 102-35	Remuneration policies	The directors and fiscal councilors have their remuneration defined in the General Meeting, following the determinations of the majority shareholder established in Deliberação Normativa CCEE nº 001/2018. The remuneration is composed only by the honorary, with no payments linked to the attainment of any targets, nor variable remuneration or by performance indicators.			x
GRI 102-36	Process for determining the remuneration	For the information required by this indicator, see item 4 of "Fixing the remuneration of Directors and Fiscal Council members" of the minutes of the 63rd Annual General Meeting of June 15, 2018 (http://ri.COPEL.com/ptb/10263/630276,06,2018, pdf) and the Normative Resolution CCEE nº 001/2018 (http://www.fazenda.pr.gov.br/arquivos/File/CCEE/DN0012018.pdf).			x
GRI 102-37	Involvement of stakeholders in compensation processes	Stakeholders are not involved in COPEL's compensation processes.			x



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GRI 102: DISCLOSURES 2016 GENERAL					
GOVERNANCE					
GRI 102-38	Proportion of total annual remuneration		72		x
GRI 102-39	Percent increase of total annual remuneration		72		x
ENGAJAMENTO DE STAKEHOLDERS					
GRI 102-40	List of stakeholder groups engaged by the organization		8, 95		x
GRI 102-41	Collective bargaining agreements		67		x
GRI 102-42	Basis for identification and selection of stakeholders to engage in.	The identification of which stakeholders are to be engaged is based on the level of influence of these audiences on COPEL's activities, business and decisions, as well as on the level of impact of the Company on them.	8		x
GRI 102-43	Approach to stakeholder engagement		8, 40, 61, 95		x
GRI 102-44	Key themes and concerns raised with stakeholders		7		x
PRACTICES OF REPORTING					
GRI 102-45	Entities included in the consolidated financial statements	The list of entities included in COPEL's Consolidated Financial Statements can be found at the link: http://ri.copel.com/ptb/central-de-resultados#2018	6		x
GRI 102-46	Definition of report content and limits for each material topic		7, 9		x



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GRI 102: DISCLOSURES 2016 GENERAL					
PRACTICES OF REPORTING					
GRI 102-47	List of material themes		7, 9, 10, 11		x
GRI 102-48	Reformulations of information	Page 128: in the report for 2017, water used for cooling of plants was not reported. Page 132: in the report for 2017, electricity consumption was reported in MWh, which did not allow to report total energy consumption. These values were recalculated in GJ to allow comparability with those reported for 2018.	48, 128, 132		x
GRI 102-49	Changes in reporting		11		x
GRI 102-50	Period covered by the report	The period covered by this report runs from January 1 to January 2018.	6		x
GRI 102-51	Date of previous report	The latest COPEL report was published on June 29, 2018, referring to the year 2017.			x
GRI 102-52	Reporting cycle	The reporting cycle is annual.	6		x
GRI 102-53	Contact details for the report	relato.integrado@copel.com	6		x
GRI 102-54	Declaration of preparation of the report according to GRI Standards	This report was prepared according to the GRI Standards: Essential option.	6		x



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GRI 102: DISCLOSURES 2016 GENERAL					
PRACTICES OF REPORTING					
	GRI 102-55	<i>GRI Standards Content Summary</i>	163 a 214		x
	GRI 102-56	External verification	6		x
ORGANIZATIONAL PROFILE					
INDICATORS OF THE ELECTRICAL SECTOR	EU3	Number of consumer residential, industrial, institutional and commercial units	97		
	EU4	Length of aerial and underground transmission and distribution lines, broken down by regulatory system	2, 147, 149		
MATERIAL THEMES					
CORPORATE GOVERNANCE					
GRI 103: 2016 MANAGEMENT APPROACH	GRI 103-1	Explanation of material themes and their limits	29, 38		x
	GRI 103-2	Management approach and its components	29, 38		x
	GRI 103-3	Evaluation of the management approach	29, 38, 40		x



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MATERIAL THEMES						
CORPORATE GOVERNANCE						
GRI 205: 2016 ANTI-CORRUPTION	GRI 205-1	Operations subject to risk assessments related to corruption	<p>Main corruption risks identified in 2018: Collusion with Suppliers Diversion of resources through sponsorships Theft, loss or attacks on information Diversion of financial resources Conflict of interest Collusion with clients Bribery and tips Manipulation of proposals and pricing Use of inside information Physical asset theft Diverting resources through promotional expenses for events Receipt of gifts and entertainment above permitted Overbilling schemes Diversion of resources through social programs and political donations Illegal information agency Use of agents for influence peddling Diversion of resources through charitable donations Undue payments for customs clearance and allowances</p>	38		x
	GRI 205-2	Communication and training on anti-corruption policies and procedures		36		x
	GRI 205-3	Confirmed cases of corruption and actions taken		38		x



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MATERIAL THEMES					
CORPORATE GOVERNANCE					
GRI 206: 2016 ANTI-COMPETITIVE BEHAVIOR	GRI 206-1	Lawsuits brought on by unfair competition, trust and monopoly practices	COPEL is not the target of lawsuits for unfair competition, trust and monopoly practices.	93	x
GRI 415: 2016 PUBLIC POLICIES	GRI 415-1	Total amount of financial contributions to political parties	As a joint venture company, COPEL is legally prevented from making this type of contribution, Article 31, item III, of Law 9,096, dated Sep-tember 19, 1995, prohibits parties receiving, directly or indirectly, any form or pretext, monetary contribution or monetary assistance, including through advertising of any kind, coming from public entities and legal entities of any nature, except for the appropriations referred to in article 38 of that Law and those from the Special Fund for Campaign Funding.		
HEALTH AND SAFETY AT WORK					
GRI 103: 2016 MANAGEMENT APPROACH	GRI 103-1	Explanation of material themes and their limits		78 a 80	x
	GRI 103-2	Management approach and its components		78 a 80	x
	GRI 103-3	Evaluation of the management approach		40, 78 a 80	x
GRI 403: OCCUPATIONAL 2016 OCCUPATIONAL HEALTH AND SAFETY	GRI 403-1	Workers represented by formal health and safety committees		78, 81	x

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MATERIAL THEMES					
HEALTH AND SAFETY AT WORK					
GRI 403: 2016 HEALTH AND OCCUPATIONAL SECURITY	GRI 403-2	Types and rates of injuries, occupational diseases, days lost, absenteeism and number of deaths	Types of injuries recorded by COPEL (Holding): Forearm injury caused by falling with level difference; burn in the hand by hot water and foreign body in the outside of the eye. Types of injuries recorded by COPEL Telecomunicações: Foot injury due to object fall and bone fracture due to road accident. The injuries registered by COPEL Geração e Transmissão and COPEL Distribuição are available in the social reports of these Sis. COPEL does not control the health and safety indexes by gender and by region. There is no forecast, as it depends on changes in SAP.	84	x
	GRI 403-3	Employees with high incidence or high risk of diseases related to their occupation	In COPEL, there are no occupations with a high incidence or high risk of specific to the occupation.		x



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HEALTH AND SAFETY AT WORK					
GRI 403: 2016 OCCUPATIONAL HEALTH AND SAFETY	GRI 403-4	Health and safety issues covered by formal agreements with trade unions			x
GRI 406: 2016 CONSUMER HEALTH AND SAFETY	GRI 416-1	Categories of products and services for which health and safety impacts are assessed	101		

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MATERIAL THEMES					
HEALTH AND SAFETY AT WORK					
INDICATORS OF THE ELECTRICAL SECTOR: EMPLOYMENT	EU16	Health and safety of employees, contractors and subcontractors	78, 81		x
	EU18	Percentage of contracted and subcontracted workers who have undergone relevant health and safety training	80		x

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MATERIAL THEMES					
ECONOMIC AND FINANCIAL PERFORMANCE					
GRI 103: ABORDAGEM DE GESTÃO 2016	GRI 103-1	Explanation of material themes and their limits		154 a 156	x
	GRI 103-2	Management approach and its components		154 a 156	x
	GRI 103-3	Evaluation of the management approach		40, 154 a 156	x
GRI 201: DESEMPENHO ECONÔMICO 2016	GRI 201-1	Direct economic value generated and distributed		159	
	GRI 201-2	Financial Implications and Risks Due to Climate Change	Only COPEL DIS controls the financial implications of climate change. COPEL GeT is developing a handbook for vulnerability assessment in the face of climate change with the help of the Climate Change Adaptation Committee.	120	x
	GRI 201-3	Coverage of de-fined benefit of pension plan of de-fined benefit that the organization offers	For each regular contribution made by employees in the pension fund, the sponsor (COPEL) contributes the same amount. In addition, employees can make contributions to further increase future income, however, in these cases, there is no counterpart of the sponsor. The formed reserve is transformed into benefit at the time of retirement, when the employee starts to receive a monthly life value, calculated on the basis in the total accumulated, that is, according to their savings reserve. Normal Contribution: Divided into two bands: the first is limited to 10 Social Security Units (UP) - each in the amount of R\$364.94 - with discounts varying from 2% to 4%. The values of the Real Contribution Salary (SRC) that exceed the first range will have a discount of 12% on the difference.		
	GRI 201-4	Significant financial aid received from the government	In 2018 COPEL received R\$19,426,008.32 in tax incentives. The details of these incentives are given in the Appendix .		x



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RISK MANAGEMENT AND OPERATIONAL EFFICIENCY					
GRI 103: 2016 MANAGEMENT APPROACH	GRI 103-1	Explanation of material themes and their limits	42 e 46 a 47		x
	GRI 103-2	Management approach and its components	42 e 46 a 47		x
	GRI 103-3	Evaluation of the management approach	40, 42 e 46 a 47		x
INDICATORS OF THE ELECTRICAL SECTOR: EFFICIENCY OF SYSTEM	EU11	Average of the generation efficiency of thermal plants by energy sources and by regulatory regime	UEG Araucária (PIE - Independent Energy Producer) is the result of the partnership between Petrobras and COPEL, which holds 20% and 80% of the company respectively, which is the owner of UTE Araucária (combined cycle thermal plant). COPEL GeT is solely responsible for operating and maintaining the unit within the availability values. The net energy efficiency of the plant was 12.5% in 2018. The management of this data is carried out by the owner (UEG Araucária), who did not	A Copel não possui gestão sobre o indicador.	x



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INDICATORS OF THE ELECTRICAL SECTOR: EFFICIENCY OF THE SYSTEM	EU12	Losses in transmission and distribution of energy as percentage of total energy		48	x
INDICATORS OF THE ELECTRICAL SECTOR: ACCESS	EU28	Frequency of interruptions in Energy supply		2, 47, 48	
	EU29	Average duration of interruptions in the energy supply		2, 47, 48	
	EU30	Factor of availability average of the power plant, discriminated by power source and by regulatory system		46, 145	



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MATERIAL THEMES					
MANAGEMENT OF HUMAN CAPITAL					
GRI 103: 2016 MA- NAGEMENT APPROACH	GRI 103-1	Explanation of material themes and their limits	66		x
	GRI 103-2	Management approach and its components	66		x
	GRI 103-3	Evaluation of the management approach	40, 66		x



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MATERIAL THEMES					
MANAGEMENT OF HUMAN CAPITAL					
GRI 202: 2016 MARKET PRESENCE	GRI 202-1	Variation of the lowest wage, broken down by gender, compared to the local minimum wage	The variation between the lowest salary and the minimum wage is 1.92 for men and women, considering the minimum wage at December 31, 2018 (R\$954.00). COPEL does not use a minimum wage as basis for the definition of its wages.		
GRI 401: 2016 EMPLOYMENT	GRI 401-1	New hiring of employees and turnover by age group, gender and region		69	
	GRI 401-2	Benefits granted to employees	Food / Meal Voucher aid Childcare Allowance: for maids or employees keeping custody of children between the ages of 7 and 72 months Extended Motherhood License Paternity License Release for Medical Follow-up of Family Membership in Profits and / or Results - PLR Anticipation of the 13th Salary Education: Training in Foreign Language - BABEL Program Library Vacation Bonus + Vacation Advance Flexibility in Working Hours Assistance to Employee with Disabilities and Dependent Disabled Program of Rehabilitation and Rehabilitation Professional Award for Safety in Traffic Quality of Life: COPEL's Internal Games (JICs), Pre-Retirement Program (PPA)	73	



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MATERIAL THEMES					
MANAGEMENT OF HUMAN CAPITAL					
GRI 401: 2016 EMPLOYMENT	GRI 401-2	Benefits granted to employees	<p>Energy and Health Space, COPEL's Choral and volunteering through the Eletricidadania</p> <p>Complementation Sickness program: COPEL pays the amount corresponding to the difference between the fixed remuneration of the sickness benefit paid by Social Security, complementing the value of their basic remuneration in 100%, from the 30th day</p> <p>Chemistry Dependency Program</p> <p>Vaccination</p> <p>Private Pension Plan</p> <p>Pecúlio (Savings) Plan</p> <p>Other Benefits: life insurance, funeral assistance; Low interest loans; bank posts; bridge days for the establishment of extended holidays; events special tribute to the employees who complete 10, 15, 20, 25, 30, 35 and 40 years of work; and discounts to purchase tickets for cultural events,</p>	73	
	GRI 401-3	Rates of return to work and retention after leave maternity/ paternity		74	
GRI 402: 2016 WORK / MANAGEMENT RELATIONS	GRI 402-1	Minimum notice period for operational changes	COPEL does not have established deadlines for communicating operational changes. This issue is also not foreseen in a collective agreement.		



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MATERIAL THEMES					
MANAGEMENT OF HUMAN CAPITAL					
GRI 404: 2016 TRAINING AND EDUCATION	GRI 404-1	Average number of hours of training, per functional category and gender Competency management programs and continuous learning Percentage of employees receiving performance re-views and career development	77		x
	GRI 404-2	Competency management programs and continuous learning	37, 74, 75, 76		
	GRI 404-3	Percentage of employees receiving performance reviews and career development	75		x
GRI 406: 2016 NON-DISCRIMINATION	GRI 406-1	Total number of cases of discrimination and remedial measures taken			x



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MANAGEMENT OF HUMAN CAPITAL						
INDICATORS OF THE ELECTRICAL SECTOR: EMPLOYMENT	EU14	Availability of skilled labor		76		
SUPPLY CHAIN						
GRI 103: 2016 MANAGEMENT APPROACH	GRI 103-1	Explanation of material themes and their limits		103 e 104		x
	GRI 103-2	Management approach and its components		103 e 104		x
	GRI 103-3	Evaluation of the management approach		40, 103 e 104		x



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MATERIAL THEMES					
SUPPLY CHAIN					
GRI 204: 2016 PRACTICES OF PURCHASES	GRI 204-1	Proportion of expenses with local suppliers in important operating units			
<p>For COPEL (Holding), COPEL DIS and COPEL CTE, local suppliers are located in the State of Paraná, where its main operations are concentrated. The proportion of these companies' expenses with these suppliers is 78%, 63 % and 69%.</p> <p>For COPEL GeT, local suppliers are those that operate in the states in which the company has operations. Therefore, the State of Paraná, where the headquarters are located, and the states of Mato Grosso and São Paulo, where there are subsidiaries, in addition to the State of Rio Grande do Norte, where there are wholly owned subsidiaries. The proportion of expenses with local suppliers in the company is 77%.</p> <p>The contracting practices of suppliers of COPEL (Holding) and its wholly-owned subsidiaries are described on pages 105 to 106.</p>					



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MATERIAL THEMES						
SUPPLY CHAIN						
GRI 308: 2016 ENVIRONMENTAL EVALUATION OF SUPPLIERS	GRI 308-1	Percentage of new suppliers selected based on environmental criteria	Currently, COPEL only selects or evaluates new suppliers based on environmental criteria for specific contractual objects, involving legal requirements in this regard, such as timber acquisition or contracting of plant suppression services, for example. Environmental criteria are therefore not a recurring practice, it is not possible to quantify suppliers contracted in this way in 2018.			x



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SUPPLY CHAIN					
GRI 308: 2016 ENVIRONMENTAL EVALUATION OF SUPPLIERS	GRI 308-2	Negative environmental impacts in the supply chain and measures taken			x
<p>There is no COPEL practice of evaluating suppliers to verify impacts on the environment.</p> <p>However, for the definition of critical suppliers, there are those that present a significant risk to the Company, considering the legal, financial, environmental, occupational health and safety, safety of the population, image of the company, perception of the client. The criteria for assessing the criticality of supply are the factors corresponding to sustainability and comprehensiveness. Each of the dimensions of sustainability (economic, social, environmental, etc.) is assigned a grade that indicates the level of perceived risk, which are assessed as to the possibility of occurrence and the severity of the impact. The scope represents the extension that a certain supply has for the business and if the consequences of its impacts would be broad or restricted.</p> <p>The measure adopted in case of non-compliance with contractual clauses related to the environment is the application of administrative sanctions to the supplier, such as warning, fines and suspension of participation in bids. According to the severity of the occurrence, the supplier may have his contract terminated and have its infraction informed to the competent legal bodies.</p>					



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SUPPLY CHAIN						
GRI 414: 2016 SOCIAL EVALUATION OF SUPPLIERS	GRI 414-1	Providers selected based on social criteria	The evaluation of suppliers based exclusively on social criteria is not adopted by COPEL. These criteria are only object of evaluation for determination of critical suppliers (see indicator 414-1).	105		x
	GRI 414-2	Social negative impacts in the chain of suppliers and measures taken	COPEL does not evaluate its suppliers with relation to social impacts, only evaluation for the definition of Critical suppliers, as mentioned in the indicator 414-1.			x
ENGAGEMENT WITH INTERESTED PARTIES						
GRI 103: 2016 MANAGEMENT APPROACH	GRI 103-1	Explanation of material themes and its limits		93 a 95		x
	GRI 103-2	Approach of management and its components		93 a 95		x
	GRI 103-3	Approach of management and its components		40, 93 a 95		x



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ENGAGEMENT WITH INTERESTED PARTIES					
INDICATORS OF THE ELECTRICAL SECTOR: LOCAL COMMUNITIES	EU19	Participation of stakeholders in decision-making processes			
		<p>For merger / acquisition processes and participation in auctions, there are flowcharts approved in the Board of Executive Officers that contemplate the participation of the necessary stakeholders in each phase of the process, from the identification of the business opportunity, to its implementation. Prior to the implementation of the projects, participation of local communities is guaranteed through public Hearings and informative meetings, and obtaining the consent of the municipalities and intervening bodies. The Company has an active participation in the decision-making processes related to sectoral policies, both regional and national, through participation in representative institutions of the most varied sectors related to the energy issue, such as the Brazilian Association of Independent Producers of Electric Energy, the Brazilian Association of Wind Energy and the Brazilian Association of Electric Power Distributors. It is noticed, therefore, that the planning and development of projects in the Brazilian electricity sector is very complex, with the existence of several institutions and norms that regulate both the processes related to the planning, implementation, commercialization and operation of assets as well as the minimum mechanisms of popular consultation and social participation, which must be followed by entrepreneurs.</p> <p>Description of the roles of key stakeholders in the Company's decision-making processes: COPEL's Business Development Board is responsible for analyzing business opportunities and conducts approval with the Board of Directors and the Board of Directors (CAD), responsible for approving strategic decisions, COPEL (Holding) rules and approves all investment decisions of COPEL. The Government of the State of Paraná controls the common shares and maintains the administrative control of COPEL (Holding). It is involved in all strategic decisions of COPEL and its subsidiaries. The Ministry of Mines and Energy (MME) acts directly and indirectly (through its related companies) in the decision-making process for investments in infrastructure in the energy sector. The bodies linked to the MME act as follows: National Electric Energy Agency (ANEEL): regulates and supervises the services rendered by the generation companies), transmission, distribution and commercialization of electric energy; Energy Research Company (EPE): carries out the planning of the national energy sector; National System Operator (ONS): operates the generation and transmission facilities of the National Interconnected System.</p>			



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ENGAGEMENT WITH INTERESTED PARTIES					
INDICATORS OF THE ELECTRICAL SECTOR: LOCAL COMMUNITIES	EU19	Participation of stakeholders in decision-making processes			
		<p>Organized civil society is represented by governmental and non-governmental bodies for discussions of organized infrastructure projects, representations or trade unions. There is also the Consumer Council representing the various classes of electricity consumers at all levels of planning, COPEL GeT: Energy Planning in Brazil is divided into Operation Planning and Expansion Planning, the first occurs centrally in the National Electric System Operator (ONS) and the second in the Energy Research Company (EPE), both under the regulation of the National Electric Energy Agency (Aneel). For the decision-making process, mathematical models developed in the Center of Research in Electric Energy (Cepel) and made official through regulation.</p> <p>The EPE is responsible for the publication of the “National Energy Plan” and the “Ten-Year Energy Plans”, documents which project and define the projects of generation and transmission of energy of interest of the Brazilian State from projections of growth of the Gross Domestic Product (GDP). Before being approved, the plans pass through Public Hearing, moment in which the documents are made public, for the analysis of the interested parties, aiming at receiving contributions from the most diverse sectors of Brazilian society, for later to be published as sectorial public policy instruments.</p> <p>The same happens with the concession announcements of the services related to the electric sector, which go through a Public Hearing period before they are approved. In this way, the process of planning and concession of the public services of generation and transmission of electric energy is conducted in a participatory form by the Brazilian State.</p>			



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ENGAGEMENT WITH INTERESTED PARTIES					
INDICATORS OF THE ELECTRICAL SECTOR: LOCAL COMMUNITIES	EU19	Participation of stakeholders in decision-making processes	<p>COPEL GeT participates in the process in the operation of the plants with production of inputs and implementation of the energy policies defined by the ONS, always according to the Operation License of the projects issued by the competent environmental agency. In addition to the bodies already mentioned, the Energy Trading Chamber, state environmental agencies and the Ministry of Mines and Energy are involved in this process.</p> <p>COPEL DIS: according to current environmental legislation and environmental licensing bodies criteria, in the preparation of environmental studies consultations are carried out with residents of the area directly affected by the projects. This helps in the analysis of socio-environmental feasibility, the community and made available communication channels (website, e-mail, telephone). These actions aim to take information about the enterprises to the community and gather information to analyze possible impacts of projects and propose mitigating measures. The authorities involved are the environmental agencies responsible for licensing (IAP, Secretariats IBAMA, ICMBio), the intervening agencies (Iphan, Funai, Instituto das Águas, among others), the city halls and the State Public Prosecutor's Office, are eventually questioned by community associations, ONGs and popular groups about the implementation of enterprises. In these cases, COPEL seeks to provide all the necessary clarifications.</p> <p>The subsidiary participates in political decisions through the Brazilian Association of Electric Energy Distributors (Abradee).</p>		
CLIMATE CHANGES					
GRI 103: 2016 MANAGEMENT APPROACH	GRI 103-1	Explanation of material themes and their limits	120 a 123		x
	GRI 103-2	Management approach and its components	120 a 123		x
	GRI 103-3	Evaluation of the management approach	40, 120 a 123		x



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GRI Standards	Disclosure	Answers / Complementation / Comments	Report page	Omission	External verifications	
MATERIAL THEMES						
CLIMATE CHANGES						
GRI 305: 2016 EMIS- SIONS	GRI 305-1	Direct Emissions of Greenhouse Gases – GEE (GHG) - SCOPE 1	The chosen base year was 2014. For 2019, it will start a new four-year cycle. Heating potential source: Intergovernmental Panel on Climate Change (IPCC) in 2007.	123		
	GRI 305-2	Indirect Emissions of Greenhouse Gases – GEE (GHG) - SCOPE 2	See additional information in this index, no. 305-1.	123		
	GRI 305-3	Indirect Emissions of Greenhouse Gases – GEE - SCOPE 3	See additional information in this index, no. 305-1.	123		
	GRI 305-4	Intensity of Emissions of Greenhouse - GEE (GHG)		123 e 124		
	GRI 305-5	Reduction of Emissions of Greenhouse Gases – GEE (GHG)	The reductions include scopes 1 and 2. Base year is 2014.	120 a 124		
	GRI 305-6	Emissions from Substances that destroy ozone layer (SDO)	COPEL does not produce, import or export SDOs.	123		



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MATERIAL THEMES					
CLIMATE CHANGES					
GRI 305: 2016 EMISSIONS	GRI 305-7	Emissions of NOx, SOx and other significant atmospheric emissions	123 e 124		
INDICATORS OF THE ELECTRICAL SECTOR: ORGANIZATIONAL PROFILE	EU5	Allocation of allowances for emissions of CO2 equivalents, broken down by structure of the carbon credits market			x
RESEARCH, DEVELOPMENT AND TECHNOLOGICAL ADVANCES					
GRI 103: 2016 MANAGEMENT APPROACH	GRI 103-1	Explanation of material themes and their limits	86 e 87		x
	GRI 103-2	Management approach and its components	86 e 87		x

<i>GRI Standards</i>	Disclosure		Answers / Complementation / Comments	Report page	Omission	External verification
MATERIAL THEMES						
RESEARCH, DEVELOPMENT AND TECHNOLOGICAL ADVANCES						
GRI 103: 2016 MANAGEMENT APPROACH	GRI 103-3	Evaluation of the management approach		40, 86, 87		v x
INDICATORS OF THE ELECTRICAL SECTOR: RESEARCH AND DEVELOPMENT	EU8	Activities related to research and development and expenditures with the objective of reliably providing electricity and promoting sustainable development.		86, 88 a 91		x
REGULATORY ENVIRONMENT						
GRI 103: 2016 MANAGEMENT APPROACH	GRI 103-1	Explanation of material themes and their limits		56 a 57		x
	GRI 103-2	Management approach and its components		56 a 57		x
	GRI 103-3	Evaluation of the management approach		40, 56 a 57		x

<i>GRI Standards</i>	Disclosure		Answers / Complementation / Comments	Report page	Omission	External verification
MATERIAL THEMES						
REGULATORY ENVIRONMENT						
GRI 307: 2016 ENVIRONMENTAL COMPLIANCE	GRI 307-1	Non-compliance with environmental laws and / or regulations	In 2018, COPEL Generation and Transmission paid a fine in the amount of R\$543,504.84, issued by the State Department of the Environment of Mato Grosso due to an Environmental Infringement Notice filed in 2014 as a result of the death of fish occurred in the fourth span of the Colíder HPP spillway.			x
GRI 419: 2016 SOCIO-ECONOMIC COMPLIANCE	GRI 419-1	Non-compliance with laws and regulations in the social and economic area	The receipt or payment of fines or non-monetary sanctions was not recorded in 2018 due to non-compliance with laws and regulations in the social and economic area by COPEL DIS, COPEL GeT, COPEL COM and the Holding Company, and CTE, the Administrative Process nº 53516,008345 / 2011-29 was administratively judged, condemning the company to the payment of a fine in the amount of R\$322,261.68 due to the non-licensing of 40 stations. However, it should be noted that the obligation to license stations no longer exists to COPEL Telecommunications since June 2017.			x
SOCIAL RESPONSABILITY						
GRI 103: 2016 MANAGEMENT APPROACH	GRI 103-1	Explanation of material themes and their limits		107 a 109		x
	GRI 103-2	Management approach and its components		107 a 109		x
	GRI 103-3	Evaluation of the management approach		40, 107 a 109		x

GRI Standards	Disclosure	Answers / Complementation / Comments	Report page	Omission	External verification	
MATERIAL THEMES						
RESPONSABILIDADE SOCIAL						
GRI 203: 2016 INDIRECT ECONOMIC IMPACTS	GRI 203-1	Investments in infrastructure and services offered	COPEL's investments in infrastructure are made through its subsidiaries. For details on the investments made by COPEL Distribuição, access the Social and Environmental Responsibility Report Company's financial information, available here . In 2018 COPEL GeT did not invest in infrastructure on behalf of the surrounding community. However, the company met with managers from four municipalities in the State of Rio Grande do Norte where the wind farms of the Brisa Potiguar Wind Complex are installed to host and agree actions of interest to the municipalities for social investments. It was defined that the resources will be directed to the area of education, specifically for the reform of schools. It will be reformed a school in each municipality. The information related to COPEL Telecomunicações are included in the indicator 203-2.	111, 151		x
	GRI 203-2	Significant indirect economic impacts, including the extent of the impacts		100, 113, 151		x
GRI 413: 2016 LOCAL COMMUNI- TIES	GRI 413-1	Community Engagement Programs, Impact Assessments and / or Local Development	Details of the programs executed by COPEL DIS and COPEL GeT can be checked in the reports of these subsidiaries, available on the links: COPEL Distribuição Social-Environmental and Economic-Financial Responsibility Report COPEL Geração e Transmissão Social-Environmental and Economic-Financial Responsibility Report	62, 69, 94, 111 a 113		x



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GRI Standards	Disclosure	Answers / Complementation / Comments	Report page	Omission	External verification
MATERIAL THEMES					
SOCIAL RESPONSIBILITY					
GRI 413: 2016 LOCAL COMMUNITIES	GRI 413-2	Operations with negative impacts on communities	The impacts mentioned in pages 107 and 111 refer to all COPEL operations. The location of operations can be verified on page 21. In addition to the impacts reported in the content of this report, the following stand out: COPEL CTE: main products and services are the provision of telecommunications solutions - broadband Internet access, COPEL CTE does not cause direct negative impacts on local communities. Misuse of products and services, however, may cause negative impacts in the general community, such as the dissemination of fake news, digital pedophilia, digital discrimination, racial or anti-minority hatred, cyberbullying, among other practices. COPEL GeT: pressure for urban infrastructure and public services resulting from the demographic and urban increase during the construction of the projects; interferences in economic activities related to the use of natural resources and / or linked to the polygon of the properties affected by the projects; compulsory displacement of populations and changes in their way of life due to changes in economic production, local ties and social organizations; risks of economic retraction and population emptying in the municipalities after the completion of the works; discomfort to neighboring populations to facilities resulting from increased circulation of people and vehicles; and noise emission.	107, 111	x



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MATERIAL THEMES					
SOCIAL RESPONSIBILITY					
GRI 413: 2016 LOCAL COMMUNITIES	GRI 413-2	Operations with negative impacts on communities	COPEL DIS: generation of waste and dust; increased levels of noise and vibration; visual impact / alteration of the natural landscape due to the suppression of vegetation; limitation on use and occupation of the soil; interference in the daily life of surrounding communities; accidents with third parties; handling of vegetation under the nets and interference in the urban landscape.	107, 111	x
INDICATORS OF THE ELECTRICAL SECTOR: LOCAL COMMUNITIES	EU20	Approach for management of displacement impacts		109	
	EU22	Number of persons physically and economically displaced and indemnity by type of project		109	
INDICATORS OF THE ELECTRICAL SECTOR: ACCESS	EU23	Programs to improve access to electricity		53, 100	
	EU27	Number of residential disconnections due to non-payment, broken down by period / duration of the shutdown and by regulatory system.		102	

<i>GRI Standards</i>	Disclosure	Answers / Complementation / Comments	Report page	Omission	External verification
MATERIAL THEMES					
SOCIAL RESPONSIBILITY					
INDICATORS OF THE ELECTRICAL SECTOR: PROVISION OF INFORMATION	EU24	Practices to deal with barriers to access to electricity	101		
INDICATORS OF THE ELECTRICAL SECTOR: HEALTH AND SECURITY CONSUMER	EU25	Number of accidents and deaths of service users involving company assets, judicial decisions and settlements, as well as outstanding judicial cases related to diseases	113		x
HUMAN RIGHTS					
GRI 103: 2016 MANAGEMENT APPROACH	GRI 103-1	Explanation of material themes and their limits	114 e 115		x
	GRI 103-2	Management approach and its components	114 e 115		x
	GRI 103-3	Evaluation of the management approach	40, 114, 115		x



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GRI Standards	Disclosure		Answers / Complementation / Comments	Report page	Omission	External verification
MATERIAL THEMES						
HUMAN RIGHTS						
GRI 407: 2016 FREEDOM OF AS-SOCIA- TION AND COLLEC- TIVE BAR- GAINING	GRI 407-1	Cases in which freedom of association and collective bargaining may be violated		117		



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MATERIAL THEMES					
HUMAN RIGHTS					
GRI 408: 2016 CHILD LABOR	GRI 408-1	Operations and suppliers at risk of child labor			
		<p>COPEL does not assess the risks related to child labor, but actively manages and supervises labor contracts, which have clauses of commitment to comply with labor laws and combat this practice.</p> <p>The Company’s confidential communication channel is open to complaints of irregularities or damages. If these irregularities are proven, managers are notified so that appropriate action is taken, including the application of administrative sanctions or even the offer of denunciation to the Ministry Public, if the illegal conduct departs from a contracted company.</p> <p>All of the Company’s contracts with suppliers have clauses on social and environmental responsibility, in which a commitment is made not to employ children under the age of 18 years for night work, dangerous or unhealthy, and under 16 years of age for any work, except as an apprentice. It is also mandatory to incorporate the Global Compact Principles, in addition to other social commitments. Suppliers must also present the “Declaration of Social and Environmental Responsibility” in the qualification, this being one of the rules for judgement of the proposals.</p>	115		x

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<i>GRI Standards</i>	Disclosure	Answers / Complementation / Comments	Report page	Omission	External verification
MATERIAL THEMES					
HUMAN RIGHTS					
GRI 409: 2016 FORCED OR ANALOGUE TO SLAVE	GRI 409-1	Operations and suppliers with risk of occurrence of slave labor cases	There is no formal assessment of COPEL and its subsidiaries of these risks in its operations and suppliers. To prevent this type of practice from occurring, COPEL adopts measures such as those on prevention of child labor mentioned in disclosure 408-1. COPEL GeT, however, considers that activities that require the temporary housing of workers - especially in rural areas - for the implementation of Company's projects, such as construction, assembly of electromechanical components, suppression of vegetation, environmental monitoring, etc. In addition to the dormitories, it is necessary to provide dining rooms, bathrooms, lavatories, living areas, etc., whose requirements may be in disagreement with those established in Regulatory Norms, and may characterize conditions analogous to slavery.	115	x
GRI 411: 2016 RIGHTS OF INDIGENOUS PEOPLES	GRI 411-1	Cases of violations of the rights of indigenous and traditional peoples		117	
GRI 412: 2016 HUMAN RIGHTS AS- SESSMENTS	GRI 412-1	Operations subject to analysis or human rights		115	x
	GRI 412-2	Training of employees in policies or procedures of human rights		115	x

<i>GRI Standards</i>	Disclosure	Answers / Complementation / Comments	Report page	Omission	External verification
MATERIAL THEMES					
HUMAN RIGHTS					
GRI 412: 2016 HUMAN RIGHTS ASSESSMENTS	GRI 412-3	Investment agreements and contracts that include human rights clauses	115		x
ENERGY PLANNING AND DEMAND INCREASE					
GRI 103: 2016 MANAGEMENT APPROACH	GRI 103-1	Explanation of material themes and their limits	51 e 52		x
	GRI 103-2	Management approach and its components	51 e 52		x
	GRI 103-3	Evaluation of the management approach	40, 51, 52		x
INDICATORS OF THE ELECTRICAL SECTOR: ORGANIZATIONAL PROFILE	EU1	Installed capacity, broken down by primary energy source and by regulatory system	2, 144		x
	EU2	Net energy production, broken down by primary energy source and by regulatory system	2, 144		x

GRI Standards	Disclosure	Answers / Complementations / Comments	Report page	Omission	External verification
MATERIAL THEMES					
ENERGY PLANNING AND DEMAND INCREASE					
INDICATORS OF ELECTRICAL SECTOR: AVAILABILITY AND RELIABILITY	EU6	Availability and reliability of electric energy	More information related to this indicator can be obtained in the social and environmental report of COPEL Distribuição, which implements the Energy Efficiency Program through the application of financial resources determined by Law No. 9,991 / 2000 and Normative Resolution Aneel No. 830/2018.	47	x
	EU10	Planned capacity against projected energy demand in the long term, broken down by energy source and regulatory regime	The Federal Government is responsible for planning the expansion of the generation capacity of the National Interconnected System. However, in recent years, the Government has opted to prioritize cheaper sources, such as wind, solar and hydroelectric plants without reservation, which are intermittent and depend on conditions of the environment, such as rainfall, wind and solar ir-radiation to generate energy. The option for these sources has brought insecurity to the operation capacity of the SIN.	145	x
INDICATORS OF ELECTRICAL SECTOR: MANAGEMENT OF THE DEMAND DIVERSITY	EU7	Demand Management Programs	For more information, access the Reports: COPEL Generation and Transmission Social-Environmental and Economic-Financial Responsibility Report Social-Environmental and Economic-Financial Responsibility Report of COPEL Distribuição	51, 53, 103	x
DIVERSITY					
GRI 103: 2016 MANAGEMENT APPROACH	GRI 103-1	Explanation of material themes and their limits		69 a 71	x
	GRI 103-2	Management approach and its components		69 a 71	x
	GRI 103-3	Evaluation of the management approach		40, 69 a 71	x



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GRI Standards		Disclosure	Answers / Complementation / Comments	Page report	Omission	External verification
MATERIAL THEMES						
DIVERSITY						
GRI 405: 2016 DIVERSITY AND EQUALITY OF OPPORTUNITY	GRI 405-1	Diversity of groups responsible for governance and employees		34, 35, 67, 68		x
	GRI 405-2	Proportion of basic salary and remuneration between men and women		72, 73		x
MANAGEMENT OF FINITE NATURAL RESOURCES						
GRI 103: 2016 MANAGEMENT APPROACH	GRI 103-1	Explanation of material themes and their limits		120 e 121		x
	GRI 103-2	Management approach and its components		120 e 121		x
	GRI 103-3	Evaluation of the management approach		40, 120, 121		x
GRI 301: MATERIALS 2016	GRI 301-1	Materials used, by weight or volume	This is the first time COPEL reports this indicator. The total weight of materials used was estimated. It was not possible for the 2018 report to make the separation of renewable or non-renewable materials.	133		x
	GRI 301-2	Percentage of materials used from recycling	Due to the nature of the activities, the major use in the provision of services is from heavy industry materials and therefore this disclosure does not apply to COPEL.			
	GRI 301-3	Products and their packaging recovered	It does not apply to COPEL.			

<i>GRI Standards</i>	Disclosure	Answers / Complementation / Comments	Report page	Omission	External verification
MATERIAL THEMES					
MANAGEMENT OF FINITE NATURAL RESOURCES					
GRI 302: ENERGY 2016	GRI 302-1	Energy consumption within the organization		131, 132	x
	GRI 302-2	Energy consumption outside the organization		131	x
	GRI 302-3	Energy intensity		131	
	GRI 302-4	Reduced energy consumption		131	x
	GRI 302-5	Reductions in energy requirements for products and services	<p>It does not apply to the type of activity performed by COPEL Comercial and COPEL (Holding). Only COPEL DIS calculated the reductions obtained in the energy requirements, as shown below:</p> <p>Diesel: increase of 3.76% in the distance traveled per l of fuel consumed Gasoline: 1.73% increase in the distance traveled per liter of fuel consumed Ethanol: 14.9% increase in the distance traveled per liter of fuel consumed</p>	131	



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MATERIAL THEMES					
MANAGEMENT OF FINITE NATURAL RESOURCES					
GRI 303: 2016 WATER	GRI 303-1	Total water withdraw-al by source	129		x
	GRI 303-2	Water sources significantly affected by water withdrawal			x
	GRI 303-3	Percentage and total volume of water recycled and reused	130		x
GRI 304: 2016 BIODIVERSITY	GRI 304-1	Own operating units, leased or managed in protected areas	138		x
	GRI 304-2	Significant impacts of activities, products and services on biodiversity	136		x



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MATERIAL THEMES					
MANAGEMENT OF FINITE NATURAL RESOURCES					
GRI 304: BIODIVERSITY 2016	GRI 304-3	Protected or restored habitats			x
	GRI 304-4	Species included in the IUCN red list and in national conservation lists	<p>COPEL GeT: if the species evaluated does not fall into categories that denote some degree of extinction risk (Extinct in Nature, Extinct), or “Unclassified” (Insufficient Data and Not Evaluated), it is classified as “Safe or Not Worrysome”, abundant and widely distributed species are included in this category, when COPEL reports of studies on fauna and flora, these indicate species with some degree of threat. The Lesser Concern species only appear on the lists as records, but rarely come with an indication of its category and it is not possible to indicate all species under that classification.</p> <p>COPEL DIS: to respond to this indicator, as data of the flora were considered the results of the reports of forest inventory of enterprises of lines high-voltage distribution grid, substations and medium voltage distribution grids elaborated in the year 2018. For the collection of fauna data, the simplified environmental high voltage distribution lines.</p>	142	x

GRI Standards	Divulgação	Repostas/ Complementações/ Observações	Página do relatório	Omissão	Verificação externa
TEMAS MATERIAIS					
GERENCIAMENTO DE RECURSOS NATURAIS FINITOS					
GRI 306: 2016 EFFLUENTS AND WASTE	GRI 306-2	Total weight of waste by type and method of disposal	134, 135		x
	GRI 306-3	Total number and volume of significant leaks	136		
	GRI 306-4	Transport of hazardous waste	COPEL does not transport hazardous waste within the terms of the Basel Convention.		
INDICATORS OF THE ELECTRICAL SECTOR: BIODIVERSITY	EU13	Biodiversity of compensation areas compared to biodiversity in affected areas			The table with the details requested by the disclosure is in Appendix 2



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Companhia Paranaense de Energia - Copel

Limited Assurance Report
of the Independent Auditor
on the GRI Standards Indicators
Contained in the 2018 Integrated Report

Deloitte Touche Tohmatsu Auditores Independentes

INDEPENDENT AUDITOR'S LIMITED ASSURANCE REPORT
ABOUT THE STANDARD GRI INDICATORS CONTAINED IN THE 2018 INTEGRATED REPORT

To the Directors and Shareholders
of Companhia Paranaense de Energia - COPEL Curitiba - PR

Introduction

We were hired by the Administration of Companhia Paranaense de Energia - COPEL ("Company") to present our limited assurance report on the compilation of information related to the "Global Reporting Initiative - GRI" indicators in its "Standard" version, contained in the Company's 2018 Integrated Report for the year ended December 31, 2018.

Responsibilities of the Company's Management

The Company's Management is responsible for the proper preparation and presentation of information on GRI indicators, contained in the 2018 Integrated Report, in accordance with the criteria defined by GRI "Standard" and the internal controls that it determined as necessary to enable the preparation of such information, free from relevant material misstatement, whether caused by fraud or error.

Responsibility of the independent auditors

Our responsibility is to express a conclusion on the information related to the GRI indicators, contained in the 2018 Integrated Report, based on the limited assurance work carried out in accordance with Technical Communication - CT no. 07/12, approved by the Conselho Federal de Contabilidade - CFC (Federal Accounting Council - CFC), and elaborated based on NBC-TO-3000 - Assurance Assignment Other than Audit and Review, issued by the CFC, which is equivalent to the International Standard ISAE 3000, issued by the International Federation of Accountants - IFAC, applicable to non-historical information. These standards require compliance with ethical requests, including independence requirements, and that the work be performed with the objective of obtaining limited security that the information related to the GRI indicators, contained in the 2018 Integrated Report, taken jointly, are free from relevant distortions.



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A limited assurance work conducted in accordance with NBC-TO-3000 (ISAE 3000) consists primarily of inquiries to the administration of the Company and other professionals of the Company who are involved in the elaboration of information related to GRI indicators in the 2018 Integrated Report, as well as in the application of analytical procedures to obtain evidence that allows us to conclude in the form of limited assurance on the information taken as a whole. A limited assurance work also requires the execution of additional procedures, when the independent auditor becomes aware of matters that lead him / her to believe that related information to the GRI indicators, contained in the 2018 Integrated Report, taken together, may present relevant distortions.

The procedures selected were based on our understanding of the aspects related to the compilation and presentation of the information related to the GRI indicators, contained in the 2018 Integrated Report, and other working circumstances and our consideration of areas in which distortions could exist.

The procedures comprised:

- a) The planning of the work, considering the relevance, the volume of quantitative and qualitative information and the operational and internal controls systems that served as the basis for the preparation of information related to GRI indicators, contained in the 2018 Integrated Report of the Company.
- b) Understanding the calculation methodology and the procedures for compiling indicators through interviews with managers responsible for preparing the information.
- c) Application of analytical procedures on quantitative information and inquiries about qualitative information and its correlation with the indicators released in the information related to GRI indicators, included in the 2018 Integrated Report.
- d) Comparison of indicators of financial nature with the financial statements and / or accounting records.

The limited assurance work also included adherence to the guidelines and to the criteria of the GRI elaboration in its "Standard" version, applicable to the preparation of information related to GRI indicators, contained in the 2018 Integrated Report.

We believe that the evidence obtained in our work is sufficient and appropriate to provide a basis to our conclusion in a limited way.

Scope and limitations

The procedures applied in a limited assurance work are substantially less extensive than those applied in an assurance work which aims to express an opinion on the information related to the GRI indicators, contained in the 2018 Integrated Report.

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Consequently, they do not enable us to be sure that we are aware of all the issues that would be identified in an assurance work that aims to express an opinion. If we had carried out a work for the purpose of expressing an opinion, we could have identified other issues and possible distortions that may exist in the information related to the GRI indicators, contained in the 2018 Integrated Report. Therefore, we do not express an opinion on this information.

Non-financial data are subject to more inherent limitations than financial data, due to the nature and diversity of the methods used to determine, calculate or estimate such data. Qualitative interpretations of materiality, relevance and accuracy of the data are subject to individual assumptions and judgments. Additionally, we do not perform any work on data reported for previous periods or future projections and targets.

It is worth mentioning that the assured indicators are those related to the material themes obtained in the materiality study of COPEL Holding, held in 2018.

Conclusion

Based on the procedures carried out and outlined in this report, nothing has come to our attention that would lead us to believe that the information related to the GRI indicators, included in the 2018 Integrated Report, have not been compiled, in all material aspects, in accordance with the guidelines defined by the GRI "Standards".

Other subjects

Scope of assurance

The criterion for defining the scope of assurance consisted in the selection of indicators directly associated with the material aspects reported by the Company during the planning stage of the work, also excluding data and information of projects and initiatives in the Annex to the 2018 Integrated Report of the Company. Here are the indicators that were not subject to this assurance:

- Indicators related to "Emissions": 305-1, 305-2, 305-3, 305-4, 305-5, 305-6 and 305-7.
- Indicators related to "Sector Supplement": G4-EU3, G4-EU4, G4-EU13, G4-EU14, G4-EU19, DMA G4-EU20, G4-EU22, G4-EU23 and DMA G4-EU24, G4-EU27, G4-EU28, G4-EU29 and G4-EU30.
- Indicators related to "Occupational Health and Safety": 416-1. Indicators related to "Human Capital": 401-1, 401-2 and 404-2.
- Indicators related to "Supply Chain": 204-1. Indicators related to "Human Rights": 407-1 and 411-1.
- Indicators related to "Management of Finite Natural Resources": 306-3.



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Guidelines and specifications

According to GRI guidelines in its “Standard” version, the Company declares to be in accordance with the “Core / Essential” specifications in its Integrated Report for the year ended December 31, 2018, which reports on the essential performance indicators and the supplement indicators of the energy sector.

Curitiba, June 17, 2019

DELOITTE TOUCHE TOHMATSU

Independent Auditors

CRC no 2 SP 011609/0-8 “F” PR

Fernando de Souza Leite

Accountant

CRC no 1 PR 050422/0-3

[Access the original Assurance Report here](#)



appendix



Incorporation of the Global Compact Principles and ODS

The Company ratifies its commitment to the United Nations Global Compact and the Sustainable Development Objectives, and presents as an Appendix to this Communication of Progress (COP), which specifies the initiatives developed to implement the principles of the Global Compact and the ODS Throughout the publication of which this appendix is part, the results of these initiatives and the progress of their commitments in 2018 are also presented, which can be found in the GRI indicators reported by COPEL.



Pacto Global
Rede Brasil

 <p>1. RESPEITAR e apoiar os direitos humanos reconhecidos internacionalmente na sua área de influência.</p>	 <p>2. ASSEGURAR a não participação da empresa em violações dos direitos humanos.</p>	 <p>3. APOIAR a liberdade de associação e reconhecer o direito à negociação coletiva.</p>	 <p>4. ELIMINAR todas as formas de trabalho forçado ou compulsório.</p>	 <p>5. ERRADICAR todas as formas de trabalho infantil da sua cadeia produtiva.</p>
 <p>6. ESTIMULAR práticas que eliminem qualquer tipo de discriminação no emprego.</p>	 <p>7. ASSUMIR práticas que adotem uma abordagem preventiva, responsável e proativa para os desafios ambientais.</p>	 <p>8. DESENVOLVER iniciativas e práticas para promover e disseminar a responsabilidade socioambiental.</p>	 <p>9. INCENTIVAR o desenvolvimento e a difusão de tecnologias ambientalmente responsáveis.</p>	 <p>10. COMBATER a corrupção em todas as suas formas, incluindo a extorsão e o suborno.</p>





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	GLOBAL COMPACT	ODS	
Policies and Management Systems			
Adherence to voluntary commitments in the effort to promote sustainability, ethical conduct and best corporate governance practices: Global Com-pact; National Movement ODS We Can Paraná; Statement Call to Action for Governments in the Fight against Corruption; Business Pact for Integrity and against Corruption and Principles for Sustainable Executive Education (PRME).	1 to 10	16, 17	Several / Undetermined
Supply Chain Sustainability Management: aims to contribute to the development of suppliers, establishing parameters linked to sustainability proposing actions that promote and strengthen good practices along the supply chain.	1 to 10	16, 17	2008 / Undetermined
Our Energy Program: includes the acquisition of new career opportunities, remuneration and personal development to performance.	6		2013 / Undetermined
Generation by renewable sources: compliance with the strategic and sustainability guidelines established for the generation business.	7, 8, 9	7, 17	Undetermined
Ethical Guidance Board: Appreciates and issues guidance on processes related to ethical conduct in the Company.	1 to 10	5, 8, 16	2003 / Undetermined
Moral Harassment Reporting Commission: aims to provide information on allegations of moral harassment in labor relations within the Company.	1 to 10	5, 8, 16	2009 / Undetermined
Integrity and Portal Compliance Program: a set of internal mechanisms and procedures for integrity, auditing and incentive to report irregularities and in the effective application of codes of ethics and conduct, policies and guide-lines with the objective of detecting and correcting deviations, fraud, irregularities and unlawful acts committed against the public administration, national or foreign.	10	16	2015 / Undetermined



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Policies and Management Systems			
COPEL's Transparency Portal: has the purpose of making information available in compliance with federal and state legislation.	10	16	2014 / Undetermined
Diversity Program: aims to raise awareness and mobilize the functional framework aiming at the promotion of equal rights, opportunities and recognition for all, as well as promoting and supporting internal actions aligned with public policies and movements focused on diversity.	1 to 10	2, 5, 8 10, 16, 17	2014 / Undetermined
Internal Environmental Commissions - CISAS: act as multipliers of sustainability concepts, enabling the identification of problematic situations in the socio-environmental aspect, strengthening the relationship with stakeholders.	1, 2, 6, 7, 8, 9, 10	12, 13	2012 / Undetermined
COPEL Corporate University - UniCOPEL: implementation of Educational Planning and management of Leadership Development Programs, Post-graduate Master's and PhD and Languages.	1, 2, 7, 8, 9	16, 17	2007 / Undetermined
Corporate Climate Change Management Program: aims to discuss and deliberate actions related to the study of the effects of climate change, implementation of COPEL's Climate Change Policy and voluntary commitments assumed,	1, 2, 7, 8, 9	11, 13, 17	2011 / Undetermined
Support for Public Policies and Management Improvement			
Participation in the Brazilian Committee of the Global Compact and the National Movement ODS We Can Paraná.	1 to 10	16, 17	2016 / Undetermined
Participation in the Brazilian GHG Protocol Program: founding member	1, 2, 7, 8, 9	11, 13	2008 / Undetermined



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	GLOBAL COMPACT	ODS	
Policies and Management Systems			
Participation in organizations that discuss and promote energy efficiency: Assoc, Bras, Electric Energy Concessionaires, Energy Planning Company, As-soc, Independent Power Producers, Assoc, Bras, Electric Power Generation Companies, Assoc, Bras, Electric Energy Distributors, Assoc, Bras, Large Electric Power Transmission Companies, Bras Committee of Large Dams, Regional Council of Engineering, Architecture and Agronomy of PR, FUNCOGE,	1 to 10	6, 7, 15	Several / Undetermined
Participation in associations that discuss and promote environmental improvements: Paranaense Forum Agenda 21, Federation of Industries of Paraná, Interinstitutional Commission of Environmental Education of the National Program of Environmental Education, Committees of Basins of the State of Paraná, Committee of Environment of the Cigré, Regional Council of Engineering, Architecture and Agronomy of the State of Paraná, Trash and Citizenship Forum (Lixo e Cidadania) PR, Paranaense Forum of Climate Change, Environmental Committees of the PR Public Prosecution Service.	7, 8, 9	6, 15, 17	Several / Undetermined
Participation in the Paraná Council of Corporate Citizenship - CPCE, for joint promotion of social responsibility in the State of Paraná.	1 to 10	16, 17	2005 / Undetermined
Voluntary participation in the Competitive Paraná Movement and in examining boards of the prizes: National Quality, MPE Brazil and Paranaense Quality in Management.	1 to 10		2000 / Undetermined
Integrated Water and Soil Management: a partnership between COPEL, Sanepar and Secretariats of the State, whose purpose is to create synergy between the actions carried out in the hydrographic basins and to promote the improvement of water quality and availability through improved use, proper management and conservation soil, water and forests.	1, 2, 7, 8, 9	6, 15, 17	2010 / Undetermined
Cities Program of the UN Global Compact: since November 2017, COPEL has been the seat and coordination of the United Nations Cities Program Center for the Southern Region of Brazil, in conjunction with the State Council for Economic and Social Development of Paraná - CEDES and Autonomous Social Service Paraná city.	1 to 10	11, 17	2017 / Undetermined



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	GLOBAL COMPACT	ODS	
Policies and Management Systems			
Social and Environmental Programs, Projects and Initiatives			
Program for the collection of donations to welfare entities and social service institutions, not for profit and of collective interest, through the invoicing of energy.	1 to 10	1, 10, 17	1999 / Undetermined
Annual donation, through tax incentives, to the Fund for the Rights of Children and Adolescents - FIA, Rouanet Law, the Elderly Law, Sports Promotion Law, PROFICE, PAIC, PRONON and PRONAS.	1, 2, 5	1	2006 / Undetermined
Corporate Volunteer Program - Electricity: program allows employees to use up to four hours per month for the execution of voluntary work.	1, 2, 4, 5, 7, 8	10, 16, 17	2001 / Undetermined
Choral: it promotes the integration of employees, the quality of life at work, the development of culture and music education, as well as the appreciation of COPEL's brand in relation to the community.	6	3	2010 / Undetermined
Support room for breastfeeding and reduction of the working day: comfortable and cozy place where the mother can withdraw and store the milk to timely offer for her child.	1, 2, 6	3	2016 / Undetermined
Energy Cultivation Program: the objective is to implement community gar-dens in the safety bands of COPEL's electricity grids, in partnership with municipal governments and residents' associations.	1, 7, 8, 9	2, 10, 11, 12, 17	2009 / Undetermined
Corporate Accessibility Program: aims to make the Company adaptable in the issues of accessibility.	1, 2, 6	11, 16, 17	2007 / Undetermined
Eco-efficiency Program: concentrates the several eco-efficiency initiatives developed at COPEL in a single program operating as a hub, interconnecting them, strengthening them, empowering them, and enabling new ways of doing business.	7, 8, 9	6, 8, 12, 13	2014 / Undetermined
EducaODS Program: aims to train and develop professionals, formal and informal leaders of COPEL, on issues related to sustainability.	1 to 10	4, 12, 13	1998 / Undetermined



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Policies and Management Systems			
Susie Pontarolli Sustainability Trophy: aims to recognize and support initiatives that aim to contribute to the promotion of sustainable development and improvement of quality of life.	1 to 10	10, 16, 17	2012 / Undetermined
Fraternal Light Program: Government of Paraná Program that performs the payment of the bills of consumers enrolled in the Social Tariff of Electric Energy, provided that the consumption does not exceed 120 kWh.	1, 2, 4, 5, 10	1, 7, 11, 17	2003 / Undetermined
Morar Bem Paraná Program: in partnership with the Housing Company of Paraná - Cohapar - housing program for families with monthly income of up to six national minimum wages.	1, 2, 4, 5, 10	1, 7, 11, 17	2003 / Undetermined
Night Rural Tariff Program: incentive to increase agricultural production, for poultry farmers and swine farmers, by means of tariff discount for consumer units classified as rural, served in low voltage.	1, 2, 4, 5, 8	11, 17	2007 / Undetermined
Night Irrigation Program: stimulation of the use of irrigation to increase agricultural and poultry production, as well as improvement of the quality of life in rural areas, tariffs and equipment subsidized to rural consumers.	1, 2, 8	8, 11, 17	2003 / Undetermined
Energy Efficiency Program: focused on the efficient use of electricity in residential, industrial, commercial and public facilities, located in the concession area of COPEL.	1, 2, 8	7	2000 / Undetermined
Paraná Citizen Program: promoted by the Special Secretariat for Community Relations, with the objective of offering free services that promote citizenship and social inclusion, COPEL participates in providing services about its services and guidelines on the safe and efficient use of electric energy.	1, 2, 4, 5, 6, 10	1, 7, 10, 17	2003 / Undetermined



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Policies and Management Systems			
Paraná Digital Program: digital inclusion in public education, through the connection of state schools to the Internet, in partnership with the State Government and Education Department, with priority for low IDH localities.	1, 2, 4, 5, 6, 10	1, 9, 11	2003 / Undetermined
Paraná Connected Program: the initiative provides access to the internet in fiber optics at popular prices and a speed of 1 Mbps, according to the Broad-band State Plan, despite not being commercialized since 2017, the customer base is maintained.	1, 2, 4, 5, 6, 10	1, 9, 11	2010 / Undetermined
State Broadband Plan - PEBL: aims to disseminate cheap Internet access to all municipalities in Paraná, city halls and providers that adhere to the communication services plan assume a commitment to provide a popular Internet access service.	1, 2, 4, 5, 6, 10	1, 9, 11	2010 / Undetermined
Social Energy Electricity Tariff: established by Law 10,438 / 2002, it offers dis-counts on electric power consumption, up to a limit of 220 kWh, to families enrolled in the Single Registry of Social Programs of the Federal Government, provided that the other criteria set forth in the Resolution Aneel 414/2010.	1, 2, 4, 5, 6, 10	1, 7, 11	2002 / Undetermined
Project More than Energy: implementation, expansion and consolidation of social investment projects and programs for the community.	1, 2	1, 7, 10, 11, 16, 17	2014 / Undetermined
Smart grid project: installation of 2,000 telemetering points in the urban area of Curitiba and 1,000 points in the rural area of Colombo and Bocaiúva do Sul, the reading is done hourly making it possible to detect errors, lack of energy and obtain reading for billing without displacements.	1, 2, 7, 8, 9	7, 9, 13, 17	2015 /
Telemetering: it allows the automated collection of data in real time (on time), optimizing the process in view of the precision in the collection, treatment and availability of data, also for clients, via the Internet.	8, 9	7, 9, 13	2010 / Undetermined



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Policies and Management Systems			
illuminating Generations Project: lectures for students of the 4th year of Elementary School in public schools, with an informative and preventive nature regarding the conscious and safe use of electric energy, use of natural resources (energy and water) and correct disposal of waste.	1, 2	4	1970 / Undetermined
More Clic Rural Program: improvement of the quality of electricity supply in the rural area, focusing on agricultural activities integrated with production processes sensitive to interruptions.	1, 2, 7, 8, 9	7, 11	2015 / Undetermined
Solidarity Invoice: incentive to customers who choose to receive the invoice by e-mail, each adhesion to COPEL donates R\$1.00 to the APAEs of the State of Paraná.	1, 2	10, 12, 17	2015 /
Integrated Citizenship and Development Actions Program - UPS Citizenship: integrated actions of urban development and social promotion, and rescue of citizenship in the areas of installation of the Paraná Seguro Units (UPS) are carried out, the initiative is developed in partnership with agencies and entities of the federal, state, municipal, and civil society organizations that contribute to improving public safety and development socioeconomic.	7, 8, 9	7, 11, 17	2013 / Undetermined
Corporate Waste Management Program: aims to implement and systematize the best waste management practices, so that all waste generated is treated or disposed of correctly, so as not to harm the environment.	7, 8, 9	8, 11, 12	2006 / Undetermined
Collective Solidarity Collection: it has as objective to destine the solid administrative waste to associations of collectors of recyclable materials, contributing with the social inclusion and the environment.	7, 8, 9	1, 10, 11	2009 / Undetermined
PREVENTION: public awareness of the importance of caring for pets to prevent accidents with COPEL and Sanepar readers and post-men.	7, 8, 10	4	2015 / Undetermined



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Urban Forests Program: works with municipalities to plan the afforestation of public roads, contributing to the environmental improvement of cities and reducing interruptions in energy supply caused by the conflict between vegetation and electric systems.	7, 8, 9	11, 15, 17	2008 / Undetermined
Riparian Forest Program: aims to recover natural environments surrounding the reservoirs of the plants and other areas of interest of the Company.	7, 8, 9	6, 15	2006 / Undetermined
Ichthyofauna Monitoring and Resettlement Program: its objective is to monitor and repopulate the Company's reservoirs and rivers where COPEL's ventures exercise some influence.	7, 8, 9	6, 15	1993 / Undetermined
Experimental Station of Ichthyology Studies: study and reproduce species suitable for repopulation of rivers and reservoirs of Paran.	7, 8, 9	6, 15	1992 / Undetermined
Control of invasive and / or exotic species: monitoring and control of invasive and / or exotic species of fauna and flora.	7, 8, 9	15	2000 / Undetermined
Recovery of degraded areas: monitoring and recovery of degraded areas.	7, 8, 9	15	1999 / Undetermined
Forestry Garden: objective is the production of seedlings suitable for application in other programs of the Company.	7, 8, 9	15	1973 / Undetermined
Botanical Garden: has exotic ornamental plant species, for conservation purposes and also shelter collections and research plants.	7,8,9	15	2010 / Undetermined
Iguau Regional Museum: presents the social, cultural and environmental characteristics of the populations that have occupied the banks of the Iguau River. It maintains a collection from the programs of Archaeological Salvage and Cultural Memory and Scientific Utilization of Flora and Fauna in the implantation of the UHE Governador Ney Braga.	7, 8, 9	4, 10, 11	2000 / Undetermined



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Life Cycle Analysis: tool that quantifies the environmental impacts of a certain product or service. Composed of categories such as: greenhouse gas emission - GEE (GHG), acidification, eutrophication, toxicity, consumption of natural resources and depletion of the ozone layer.	7, 8, 9	7, 8, 12, 13	2015 / Undetermined
Reverse Logistics: plan, recommend and structure actions regarding the subject, within the scope of the Corporate Waste Management Program.	7, 8, 9	12	20145 / Undetermined
Internet Program Without Bullying - the project aims to raise the awareness of children and young people in the 7th, 8th and 9th years of elementary schools in Paraná, to the problem of cyberbullying, through the awareness lectures. It seeks to obtain the commitment of the students not to practice and report cases of bullying, as well as instruct teachers to detect cases and know what to do.	1, 2	4, 17	

Access the [other appendixes](#) of the Integrated Report.