



COPEL

*Pure Energy*

REPORT

in

*Sustainability*

2016





## Summary

01. About the Report.....	3
02. Message from the President.....	7
03. Industry Context.....	9
04. About Copel.....	11
05. Governance and Sustainability.....	17
06. Human Capital.....	29
07. Intellectual Capital.....	36
08. Social and Relationship Capital.....	40
09. Natural Capital.....	51
10. Infrastructure Capital.....	62
11. Financial Capital.....	68
12. Social Audit.....	74
13. GRI Content Index.....	79
14. Annex - Incorporation of the Principles of the Global Compact.....	94





# 01 . ABOUT THE REPORT

About the Report // Relevant and Strategic Aspects



# 01. About the Report

Copel's Sustainability Report is part of the Company's commitment to transparency and open dialogue with all its stakeholders. The document is published annually and presents management and performance information including executive decisions, achievements, operational results, and social, environmental, and economic impacts. The latest published report refers to the 2015 fiscal period. [G4-29](#)

This edition of Copel's 2016 Sustainability Report contains information from January 1 to December 31 of the same year in the various areas of activity of Copel Holding and its wholly-owned subsidiaries: Copel Geração e Transmissão S.A., Copel Distribuição S.A., Copel Telecomunicações S.A., Copel Renováveis S.A., and Copel Comercialização S.A., except when stated otherwise. [G4-17](#), [G4-28](#), [G4-30](#)

The reporting methodology follows the guidelines of the G4 version of the Global Reporting Initiative (GRI), in the "core" option of adherence, and covers the set of indicators of the electric utilities sector disclosures. It is important to point out that in order to facilitate reading and identification of specific data, all indicators disclosed are listed in the Content Index, which includes external assurance through an independent audit by Deloitte. [G4-32](#), [G4-33](#)

The current edition of the Report maintains the practice adopted by Copel in the previous cycle, following the structure and integrated reporting guidelines recommended by the International Integrated Reporting Council (IIRC). It is a model intended to improve communication with stakeholders about aspects relevant to the sustainability of Copel's business, and demonstrate the Company's ability to create value. [G4-22](#), [G4-23](#)

The review of strategic and relevant aspects included, in addition to the points raised by Copel's senior leadership, the risks relevant to each business, according to the strategic risk map.

Another highlight of the document is the attention to the normative guidelines defined by the International Financial Reporting Standards (IFRS), included in the information from Financial Statements, the Social Audit from the Brazilian Institute of Social and Economic Analyzes (Ibase), and Progress Communication about the commitments made under the Global Compact. [G4-15](#)

The report was organized in two parts. The first presents an overview of Copel's business model, bringing together the main social and environmental impacts and risks of its operations. The second part describes the context and performance of the Company's capitals with a detailed approach to the relevant aspects of the business and its ability to create value.

## Relevant and Strategic Aspects

Copel began, in 2013, the process of building the matrix of material and strategic aspects, which was reviewed and validated by stakeholders who have a relationship with the business and their degree of importance. The matrix was prepared based on consultations about perceptions, and the convergence of the different points of view of the audiences consulted, on media surveys, and on national and international sustainability benchmarks, considering the aspects relevant to the Company's business. Since then, the audiences considered priority have been employees, shareholders, investors, clients and consumers, communities, suppliers, and society. [G4-24](#), [G4-25](#), [G4-26](#)

About the Report

Relevant and Strategic Aspects

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact





Concerning employees, one of the Company's main stakeholders, there are several approaches to engagement throughout the year. The strategic planning process involving professionals from different areas and the process of preparing the Sustainability Report itself are key to reflecting on strategic aspects of the business. There is also regular communication on material aspects through the magazine Copel & Sustentabilidade and the newsletter concerning Education for Sustainability, available [online](#).

#### Employee Vision of Copel Sustainability

In order to obtain a diagnosis concerning sustainability, the Employee Opinion Survey found that almost 90% of the 5,915 employees who answered the survey are committed to Copel policies, including the Sustainability Policy, and 87% understand the importance of following the Company's sustainability guidelines, aiming for the conscious use of natural resources and respect for the environment.

In order to stay informed of industry trends and new organizational and sustainability challenges, Copel annually reviews its matrix of material and strategic aspects.

In order to obtain the current view on these matters, all Officers of Copel Holding and the Wholly-Owned Subsidiaries were consulted in 2016, and benchmark materials were analyzed. The review process included: [G4-18](#), [G4-37](#)

- **Aspects determined** in previous cycles **by stakeholders and senior management** during the engagement process, available online; [G4-24](#)
- Issues identified as material for the electricity sector by the most prestigious sources in the market, such as **RobecoSAM** (which evaluates companies for their inclusion in the Dow Jones Sustainability Index, DJSI), the Corporate Sustainability Index (ISE BM&FBOVESPA), **SASB** (sustainability reporting standards for publicly held companies in the American stock exchange), and **RepRisk**<sup>1</sup>.

The priority of the aspects was defined based on:

- **Risks to the business**, according to Risk Maps prepared for each Copel business;
- **Reputational risks**, based on the analysis of **Copel's social, environmental, and governance risks** via RepRisk;
- **The main social and environmental impacts** of Copel's operations.

While most aspects mapped during the previous cycle remained unchanged, two aspects were updated in terms of coverage. In addition, two new aspects gained prominence in the matrix.

The aspect from the previous cycle called **Training and Availability of the Workforce** is now considered **Human Capital Management**.

The objective was to better reflect the importance of people management, including the vision of investing in developing Human Capital.

**Energy Planning** has become part of **New Assets**, in order to reflect their expansion and construction capacity.

Two **new aspects** were also highlighted: **Innovation Culture and Risk and Crisis Management**. [G4-27](#)

About the Report

Relevant and Strategic Aspects

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

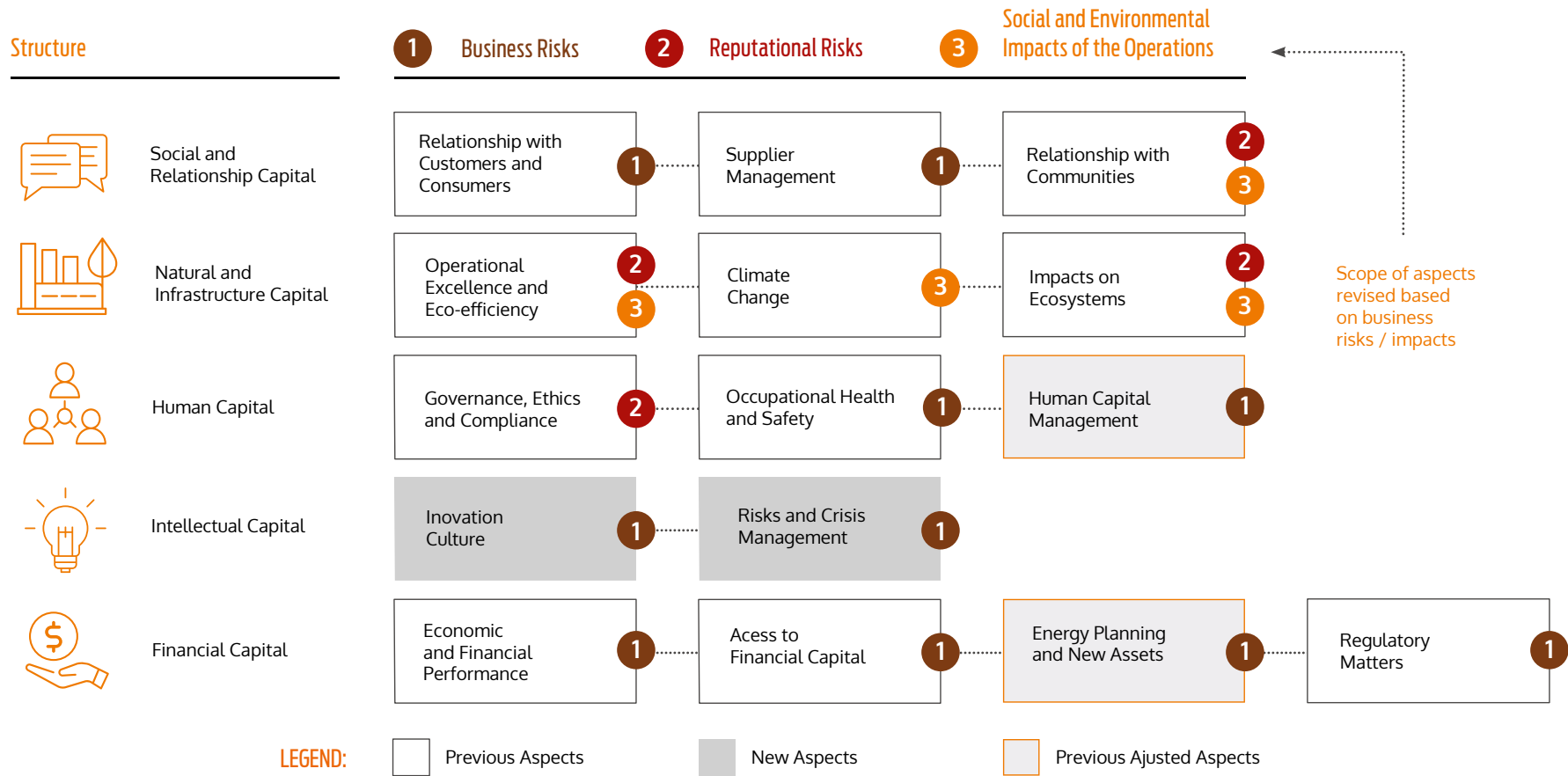
Annex - Incorporation of the Principles of the Global Compact

<sup>1</sup>RepRisk — Media analysis tool used by RobecoSAM throughout the process for the evaluation of companies for the DJSI.



# Matrix of relevant and strategic aspects

G4-19, G4-23



About the Report

Relevant and Strategic Aspects

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact

Learn about other results obtained by Copel, available online: G4-26

Administration and Financial Statements

20F Report

Social and Environmental Reports

Copel's Materiality Process

For questions, suggestions or explanations about the content of this report, Copel provides a communication channel [Talk to Us - Sustainability](#). G4-31





## 02. Message from the President

G4-1, G4-2



The political and economic instability of the country saw no mitigating factors in 2016; it was another year of major challenges for the production sector in Brazil. At Copel, many decisive aspects regarding company performance in the period were related to the energy distribution segment. Throughout the year, default rates declined, although consumption remained stagnant. The good news came with the fourth tariffing cycle, which raised the asset base to BRL 4.9 billion at the end of 2016, due to Aneel's recognition of investments made in the last four years.

This increase represents a new stimulus to the distributor's construction program, which is based on a more realistic level of assets in order to maintain its economic-financial balance, and provide services that meet the sector's new quality requirements. We point out that in 2016, Copel once again ranked first in the customer's evaluation of the Abradee Award, and received the CIER trophy for Best Distributor in Latin America.

These acknowledgments, achieved several times in this decade, show the strong perception that society and our customers have of our results and undertakings. In 2016, we made the largest investment in the Company's history: over BRL 3.57 billion in all our areas of operations, with net profit of BRL 947.8 million.

Copel Telecomunicações was recognized in the 2016 Telecom Yearbook as one of the 10 most profitable companies in 2015 in the Telecommunications sector, conferred by Fórum Editorial. The fiber optic backbone of Copel Telecomunicações, which reaches all municipalities in the state, is already considered one of the best and fastest in the country. The energy trading company, Copel Energia, was created to offer a reliable supply option to companies migrating to the free market, seeking better contracting conditions for energy inputs.

In 2016, Copel Renováveis continued with the work on the fourth wind farm in the state of Rio Grande do Norte, with estimated investments of approximately BRL 2.2 billion. By 2018, the complexes will total 28 wind farms in that region. With this, the equivalent in wind power at Copel will total 665 MW. Currently, 93% of the Company's generation comes from renewable sources.

In the transmission segment, the year was marked by 1,678 km of lines entering operation, and the implementation of a BRL 258.8 million project, resulting from an auction won by the Company in 2015. This undertaking was to replace the structure at Avenida das Torres, between Curitiba and São José dos Pinhais, with a fully underground line, which, in addition to increasing reliability in supply, allows the government to implement work to promote mobility and urban landscaping in this important corridor of access to the capital city of Paraná.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



In order to address our works and projects program in the generation and transmission segments, in 2016 we issued approximately BRL 1 billion in debentures, which demonstrates the trust and reputation that Copel has historically enjoyed with investors and the market.

We reinforce our commitment to fighting corruption, an extremely important issue in our current situation, as well as the ethical and legal compliance of our practices, by elevating the areas of governance, risk, and compliance, structured in 2015, to a status of executive office. The new department reinforces our belief that transparency and accountability are key practices for the continued and sustained growth of the business.

The Company increased its investments in people management, the main focus of the current management, in order to enable employee self-development and more active participation in planning and execution of our strategy. By mobilizing 94% of employees in face-to-face consultations that analyzed the Company's challenges and brought up over 5,000 suggestions and criticisms, the Anima Program began an engagement movement that intends to prepare Copel to face the future through innovation across its business areas. In 2017, the program will continue through the implementation of improvements, and promotion of collaborative environments - such as the corporate social network - and another phase of training leaders committed to the UN Principles of Responsible Management Education (PRME), as well as the development of teams aligned with a common purpose.

The search for innovation is part of our daily routine, and today one of our main objectives is to foster this culture throughout the Company in order to contribute to its long-term vision. Good examples of this effort are the Mais Clic Rural program, implementing smart grids at the main agribusiness centers, and the micro-generation project in Entre Rios do Oeste, which associates small- and medium-sized pig farmers with large power generation condominiums using

biogas, while avoiding the environmental impact of disposing waste in nature.

Copel also celebrated its best ever position in the Corporate Sustainability Index (ISE). The voluntary participation in this index recognizes the performance of companies listed on the São Paulo Stock Exchange regarding sustainable development, and demonstrates our inalienable commitment to the principles of the Global Compact. The differentiators that have guaranteed the Company a significant improvement in its score in the ISE range from practical actions focused on climate change, with commitments extended to the value chain, to the adoption of the Integrated Report – an accountability model that favors transparency by associating economic, social, environmental, and governance results.

These are initiatives that show an important point in common: they are actions that will allow Copel to continue to grow sustainably in the coming decades, and increase the capacity to serve its customers with quality and agility.

Throughout this publication, we show our audiences the company's guiding principles, the initiatives carried out in the year in order to put into practice our strategy, and paths to creating value that have been opened to those who enable the growth and soundness of the business: our employees, customers, shareholders, suppliers, organizations, and communities around our projects.

Enjoy your reading

ANTONIO SERGIO DE SOUZA GUETTER



About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact





## 03. Industry Context

G4-1, G4-2

The ongoing Brazilian economic crisis in 2016 continued the trend of reducing energy consumption in the country. The industrial sector recorded a drop of 2.9% in the year, followed by trade, which dropped 2.5%. Residential consumption alleviated the reduction, increasing by 1.4% during 2016, but did not prevent the sector from posting an overall decline of 0.9% in the period, according to data from the Energy Research Company (Empresa de Pesquisa Energética - EPE).

In this way, the scenario already recorded in 2015 by the National Interconnected System (Sistema Interligado Nacional - SIN) continued: energy surplus, distributors overcontracting, and price retraction. Data from the National System Operator (Operator of the National Integrated Grid - ONS) indicates that SIN's energy load recorded a drop of 0.1% in 2016 compared with the previous year.

This scenario helped EPE calculate a surplus of 9,000 MW by 2019, which, added to prospects for the economic scenario for the years to come, justified the Ministry of Mines and Energy's (MME) decision to cancel the 2nd Energy Reserve Auction, scheduled for the month of December 2016.

Add to this the expansion of installed capacity for generating electricity in 2016. Data from the National Electricity Agency (ANEEL) showed an increase of 9,526 MW, the largest increase in generation capacity recorded since the beginning of the historical series, in 1998.

The supply of infrastructure monitored by the MME recorded an increase of 4,777 km of transmission lines. The transmission area experienced an excellent year, with the closing of 21 lots of lines auctioned by ANEEL in October, with a projected investment of BRL 11.5 billion in 6,000 kilometers of lines.

Another important move in 2016 was the expansion of the free market through the retail market, with the migration of captive customers from the Regulated Contracting Environment (ACR) to the Free Contracting Environment (ACL). The Electricity Trading Chamber (CCEE) recorded a 25-fold increase in the number of approved applications for consumers to adhere to ACL last year, compared with 2015, totaling 93 requests.

This mobility between environments helped free consumption grow 18.6% in November alone, according to the Monthly Electricity Market Review, of November 2016.

The expectation for a less recessive economic environment, the increase in investor confidence, and the low basis of comparison allow us to expect a positive evolution in consumption in 2017.

Recovery, however, will depend on the expansion route of the Gross Domestic Product (GDP), which has an estimated growth of 0.5% for 2017 by EPE.

The year 2017 will be challenging, and key to beginning a reversal in the electricity sector crisis. EPE projects an average growth of 3.5% in consumption for the four-year period 2017-2021, if the industrial sector resumes activity in the second half of the year and residential and commercial consumption increases, with average growth rates of approximately 3.8% and 3.9%, respectively, in the period.

It will be a year of significant relief amid the turbulence in the economy in the last three years, albeit a relief that will probably be unable to reverse the downward trend in price, due to increased installed capacity, which will be 7,120 MW in 2017 alone, according to Aneel.



About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

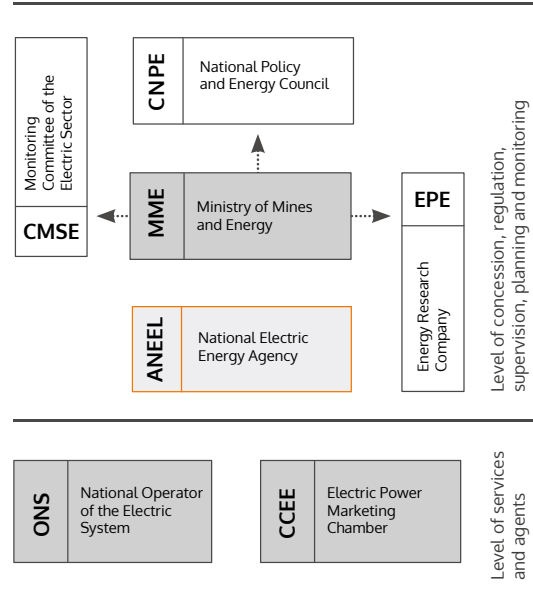
Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact

## Context - Operation of the Brazilian Electricity Sector

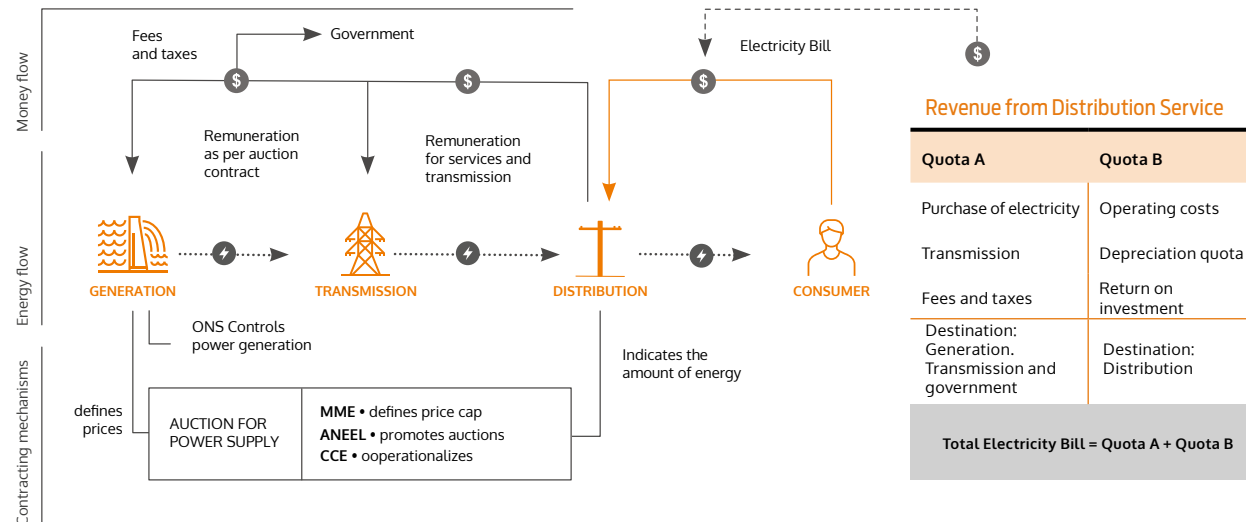
**PLAYERS** Who are the major players on the market of electric power in Brazil.



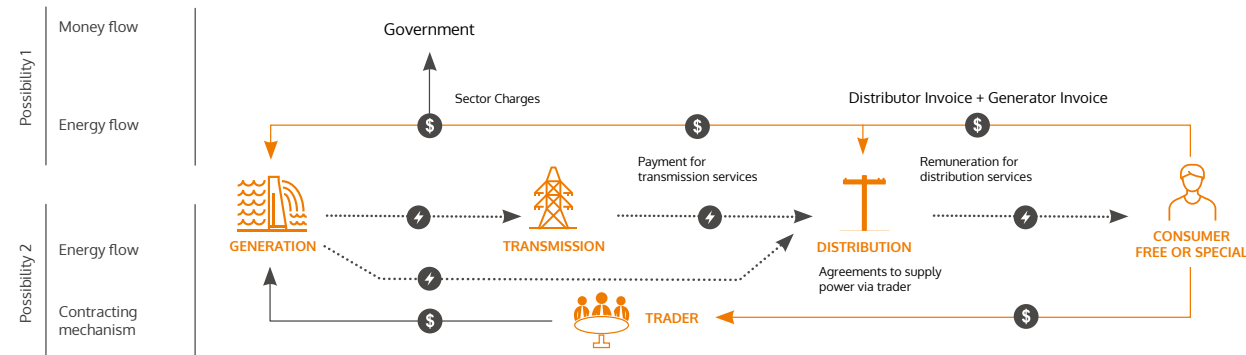
- CNPE:** Defines the country's energy policy with the purpose of ensuring stability in energy supply.
- MME:** Responsible for planning, management and development of the legislation for the sector, as well as for supervision and control of execution of policies geared toward the country's energy development.
- EPE:** Plans expansion of generation and transmission, for the MME, and provides technical support for auctions.
- CMSE:** Supervises the continuity and reliability of electricity supply.
- ANEEL:** Regulates and supervises generation, transmission, distribution and marketing of electricity. It defines the transport and consumption rates and ensures economic and financial balance of the concessions.
- ONS:** Controls the operation of the National Interconnected System (SIN) so as to optimize energy resources.
- CCEE:** Manages transactions of the energy market and conducts the official auctions.

## HOW ENERGY SUPPLY WORKS

**REGULATED MARKET:** Captive consumers buy energy from the distribution concessionaries to which they are connected. Each consumer unit pays only a monthly electricity bill. Rates are regulated by the Government, and the price is the result of a mix of long-terms contracts.



**FREE MARKET:** Free consumers buy energy directly from generators or distributors through bilateral agreements with freely negotiated conditions, such as price, time, volume, etc. Each consumer unit pays the local utility a bill referring to distribution services (regulated rate) and one or more bills related to purchase of electricity (negotiated price agreement).



About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact





Governador Ney Braga Hydroelectric Power Plant

## 04 . ABOUT COPEL

The Presence of Copel in Brazilian States // Interest in the Energy Market in 2016 // Strategic Objectives and Guidelines  
Shareholding Structure // Risks and Impacts of Copel's Businesses



## 04. About Copel

Companhia Paranaense de Energia - Copel was founded in October 1954, and is a corporation, established in the form of a quasi-public society and controlled by the Government of the State of Paraná, with shares traded at the São Paulo stock exchange (BM&FBovespa), and at the stock exchanges in New York and Madrid. [G4-3, G4-7](#)

It is the largest company in Paraná, with headquarters in Curitiba (PR), and operations in ten Brazilian states. The Company operates with cutting-edge technology in generation, transmission, distribution, and marketing of energy, in addition to telecommunications and natural gas. It operates a comprehensive and efficient electrical system with its own power generation complex, transmission lines, substations, lines, and electrical networks from the distribution system, and a modern fiber optic telecommunications system that integrates all cities in the state. [G4-4, G4-5, G4-6](#)

### Interest in the Energy Market in 2016

G4-8 G4-9

Main products (%)	Brazil	Southern Region	Paraná
Power Generation <sup>(1)</sup>	3.2	<sup>(2)</sup> <sup>(3)</sup> 20.5	<sup>(2)</sup> <sup>(3)</sup> 51.0
Electric Power Transmission <sup>(4)</sup>	1.8	9.1	24.2
Distribution of Electric Power <sup>(5)</sup>	<sup>(6)</sup> 6.1	<sup>(6)</sup> 34.6	97.3
Gas Distribution <sup>(7)</sup>	2.2	27.1	100.0

Source: 2016 Administration Report

<sup>(1)</sup> Installed capacity. Copel's interest in wind farms not included

<sup>(2)</sup> Interest in the Itaipu HE Powerplant not included

<sup>(3)</sup> Plants in the Paranapanema River not included

<sup>(4)</sup> The market refers to the Annual Revenue Allowed – RAP

<sup>(5)</sup> Grid market

<sup>(6)</sup> Source: Empresa de Pesquisa Energética (EPE)

- preliminary data

<sup>(7)</sup> Includes volume distributed in Paraná, including thermoelectric

### The Presence of Copel in Brazilian States

G4-8

93% of generated power is renewable



About the Report

Message from the Presidente

Industry Context

About Copel

The Presence of Copel in Brazilian States

Interest in the Energy Market in 2016

Strategic Objectives and Guidelines

Shareholding Structure

Risks and Impacts of Copel's Businesses

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



## Strategic Objectives and Guidelines

### Strategic Reference

Copel has assumptions and guidelines set forth in its strategic reference which guides management and all actions, and internal and external decisions of the company. G4-56



Vision

To become a benchmark in the areas where it operates, sustainably generating value.



Mission

Supply energy and solutions for sustainable development

- **Ethics:** Result of a collective agreement that defines individual behaviors aligned to a common goal.
- **Respect for people:** Consideration for others.
- **Dedication:** Ability to engage intensely and completely in the work, contributing to the achievement of the organization's objectives.
- **Transparency:** Reporting the Company's decisions and achievements in order to inform its stakeholders of any positive or negative aspects.
- **Health and safety:** Healthy work environment in which workers and managers collaborate to use a process of continuous improvement to protect and promote safety, health, and well-being of all.
- **Responsibility:** Managing the company in a sustainable way, respecting the rights of all stakeholders, including future generations and the commitment to supporting all life forms.
- **Innovation:** Applying ideas in processes, products, or services, in order to improve something that already exists or build something different and better.



Values

### Strategic Objectives

Copel's strategy guides business conduct and operation in order to achieve its Vision: "To become a benchmark in the areas where it operates, sustainably generating value." For this purpose, the Company maintains a structured strategic planning process that is revised annually, taking into account changes in its sectors of operation, the economy, regulatory changes, and stakeholder demands. The strategic guidelines established by the Board of Directors - CAD, which guided current strategic planning are:

#### Corporate Guidelines



Profitably and sustainably expand businesses.



Invest in innovation, modernization of assets, and people management.



Maintain excellence in costs, processes, and quality.

#### Guideline for the Businesses

##### Electric Sector

- Copel Geração e Transmissão S.A.
  - Copel Distribuição S.A.
  - Copel Renováveis S.A.
  - Copel Comercialização S.A.
- ▶ Maintain concessions;
  - ▶ Increase share of alternative renewable sources

##### Electric, Telecommunications, Sanitation, and Gas Sectors

- ▶ Maximize profitability of assets in society

##### Telecommunications Sector

- Copel Telecomunicações S.A.
- ▶ Expand its customer base and offer services with high added value

About the Report

Message from the Presidente

Industry Context

About Copel

The Presence of Copel in Brazilian States

Interest in the Energy Market in 2016

Strategic Objectives and Guidelines

Shareholding Structure

Risks and Impacts of Copel's Businesses

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact

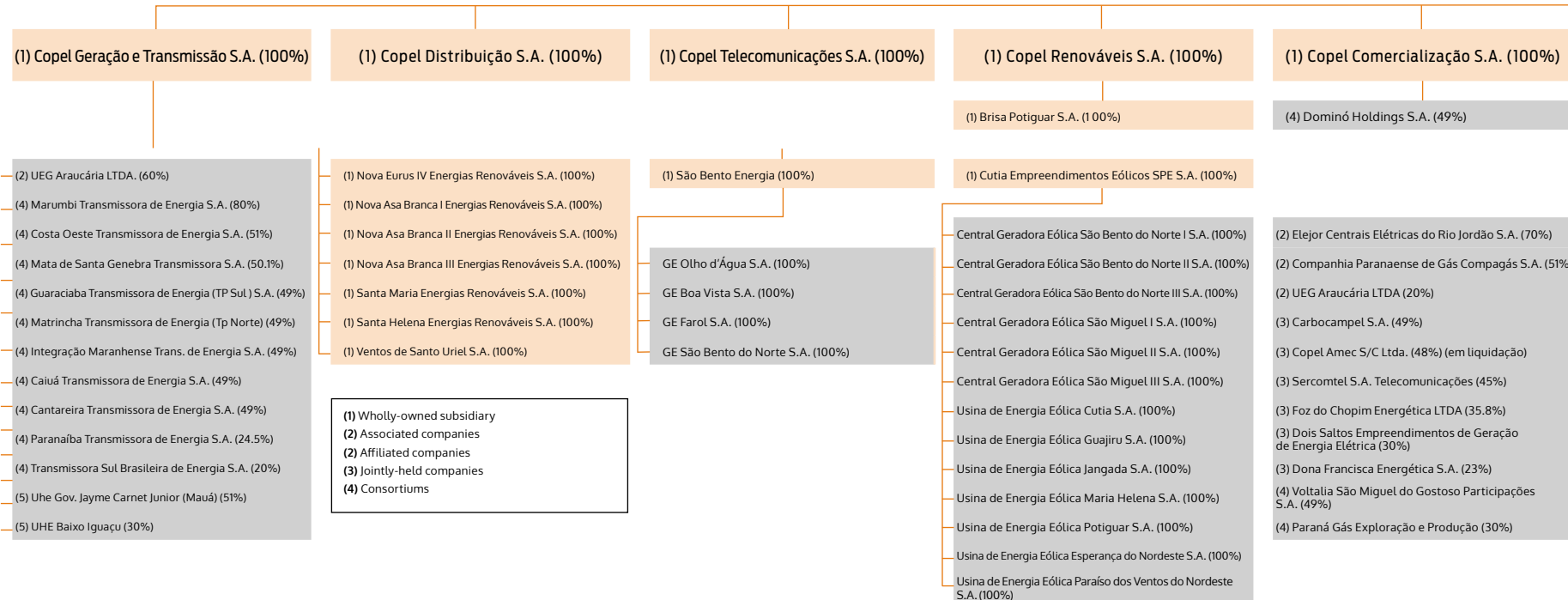




## Shareholding Structure of 12.31.2016

G4-17

State of Paraná		Bndespar		Free Float		Eletrobrás		Other Shareholders	
58.63%	Voting	26.41%	Voting	13.68%	Voting	1.06%	Voting	0.22%	Voting
31.07%	Total	23.96%	Total	44.17%	Total	0.56%	Total	0.24%	Total
				<b>BM&amp;FBovespa</b> 12.85% Voting 31.29% Total					
				<b>Nyse</b> 0.83% Voting 12.85% Total					
				<b>Latibex</b> 0.00% Voting 0.03% Total					



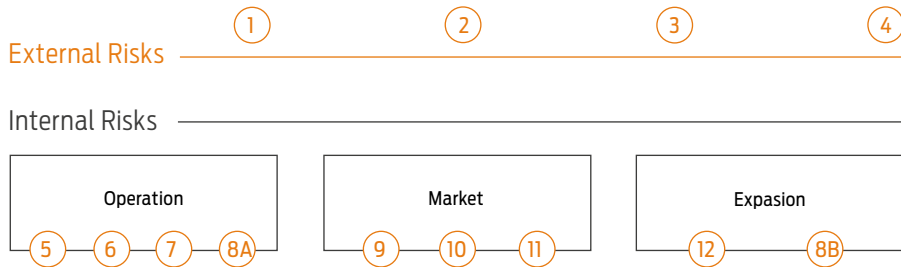
- About the Report
- Message from the Presidente
- Industry Context
- About Copel
  - The Presence of Copel in Brazilian States
  - Interest in the Energy Market in 2016
  - Strategic Objectives and Guidelines
- Shareholding Structure
- Risks and Impacts of Copel's Businesses
- Governance and Sustainability
- Human Capital
- Intellectual Capital
- Social and Relationship Capital
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact



## Risks and Impacts of Copel's Businesses

### Risk factor G4-2

The chart below summarizes the main risks in the industry that could affect our businesses and that are considered in our strategic planning. More details about these risks are available in the 20-F Report.



### External Risk Factors:

1. Political, economic, and regulatory conditions, which include a series of topics, such as economic development of the country, changes in tariff policies, regulations and changes in the concession regime, taxation, and cases of corruption and unlawful conduct.
2. Fluctuations in the currency rate comparing the Brazilian Real with foreign currencies can increase the cost of servicing our debt in foreign currency and acquisition of electricity from Itaipu, as well as create additional inflation pressure that can limit access to international markets. Factors that can have an adverse effect on our net profit and cash flows, can also result in uncertainties in the Brazilian economy and the Brazilian real estate market.
3. Negative performance of the economy in other countries, especially in developing nations, can adversely affect foreign investments in Brazil and the economic growth of the country.
4. Changes in the rainfall regime. The government can adopt measures for conservation of water/energy that are unfavorable to the businesses.

### Internal Risk Factors:

#### Operations

5. Uncertainties in projections for energy demand can adversely impact businesses.
6. Legal actions that may have a material adverse effect if the outcome is unfavorable for the Company.
7. Security breach of information, employee errors and misconduct can harm our business and reputation.
- 8A. Contractors involved in the operation may not be in compliance with the law and with Copel's ethical values.

#### Consumer Market

9. Certain consumers in our area of concession may suspend the acquisition of energy from our distribution unit.
10. Part of our operating revenue comes from Free Consumers, who may seek other suppliers of energy once their supply agreements expire.
11. Default resulting from difficulty in receiving amounts billed to our customers.

#### Expansion

12. Limited access to capital, due to the fact that the Company is subject to the guidelines of the National Monetary Council and Brazil's Central Bank concerning the level of credit that financial institutions can offer to companies of the public sector.
- 8B. Contractors involved in the construction and expansion of projects may not be in compliance with the legislation and with our ethical values, delivering materials and services below the expected quality and beyond the schedule foreseen in our planning.

About the Report

Message from the Presidente

Industry Context

About Copel

The Presence of Copel in Brazilian States

Interest in the Energy Market in 2016

Strategic Objectives and Guidelines

Shareholding Structure

Risks and Impacts of Copel's Businesses

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



## Social and Environmental Impacts of Copel's Operations

G4-2

It is in Copel's mission to serve society, providing infrastructure, energy, and technology necessary for people's lives, and available for development. Some of Copel's operations presented below may generate relevant impacts to local communities and society as a whole.

Details on various ways to mitigate the social and environmental impacts of our operations are presented in Sections 8 and 9 of this report.

### Main social and environmental impacts and their management in Copel's projects



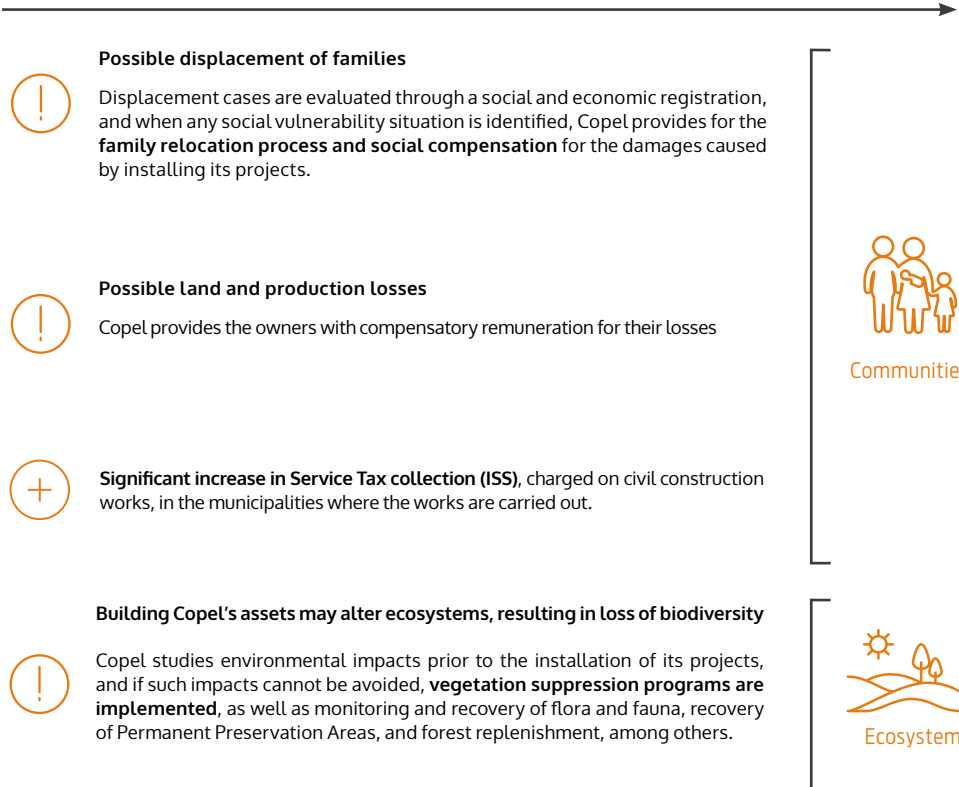
#### Construction

Copel studies, evaluates, and measures the impacts on communities and ecosystems when obtaining environmental licensing for its works. In order to mitigate negative impacts and boost the positive impacts, Copel develops social and environmental programs with the impacted communities, the government, and local leaders.



#### Operations

All Copel operations follow the requirements for mitigating impacts that are defined and approved during the licensing phase.



#### Possible displacement of families

Displacement cases are evaluated through a social and economic registration, and when any social vulnerability situation is identified, Copel provides for the **family relocation process and social compensation** for the damages caused by installing its projects.

#### Possible Land and production losses

Copel provides the owners with compensatory remuneration for their losses

**Significant increase in Service Tax collection (ISS)**, charged on civil construction works, in the municipalities where the works are carried out.

#### Building Copel's assets may alter ecosystems, resulting in loss of biodiversity

Copel studies environmental impacts prior to the installation of its projects, and if such impacts cannot be avoided, **vegetation suppression programs are implemented**, as well as monitoring and recovery of flora and fauna, recovery of Permanent Preservation Areas, and forest replenishment, among others.

#### Local development

Copel seeks to meet the expectations of the population surrounding its projects, investing in **infrastructure and services that generate benefits for the communities** where it operates. Most of the actions implemented originate from legal requirements related to licensing of its projects.

#### Income generation

Copel pays to **lease the land** for implementing wind farms. For hydroelectric power plants, **financial compensation** is paid to municipalities in proportion to the flooded areas and according to the energy produced. There is also ICMS (tax on commercialization of goods and services) for energy production, **amounts paid to the municipalities** where the projects are located.

#### Risk of accidents involving the local population

Copel promotes several informative events to promote the **conscious and safe use of electricity**.

#### Generation of hazardous waste and the use of natural resources

As defined in the licenses, each project implements specific programs to **minimize and mitigate these impacts**.

About the Report

Message from the Presidente

Industry Context

About Copel

The Presence of Copel in Brazilian States

Interest in the Energy Market in 2016

Strategic Objectives and Guidelines

Shareholding Structure

Risks and Impacts of Copel's Businesses

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact





# 05 . GOVERNANCE AND SUSTAINABILITY

Governance Structure // Performance of Governance Bodies // Integrity Practices // Sustainability Management



## 05. Governance and Sustainability

The following principles guide the Company's corporate governance: transparency, equity, accountability, and corporate responsibility. Based on these principles, our Governance Policy, whose main objective is to contribute to Copel's continuity and establish the standard and best practices of corporate governance to be adopted by the Company and its wholly-owned subsidiaries.

The corporate governance practices adopted comply with the requirements established for BM&FBOVESPA level 1 companies. We also adopted as a benchmark the Code of Best Practices in Corporate Governance from the Brazilian Institute of Corporate Governance (IBGC).

For the Company to be permanently guided by ethically sound principles, all those working on its behalf are governed by code of conduct developed according to Copel's values, the Principles of the Global Compact, and the Principles of Corporate Governance.

Both the Governance Policy and the Code of Conduct are approved by the Company's highest governance body - the Board of Directors. [G4-42](#)

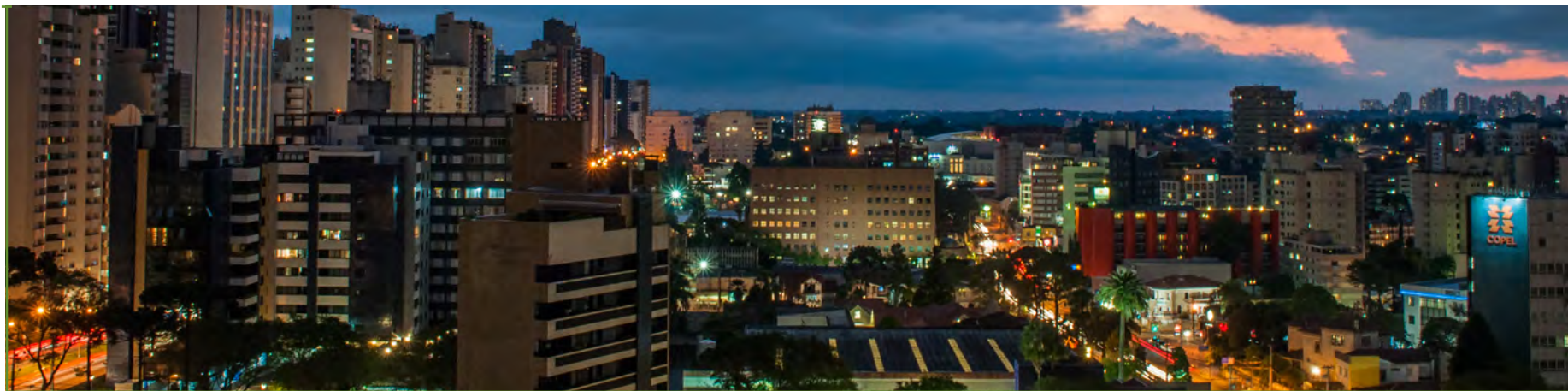
In 2016, Copel improved its corporate governance practices by creating the **Governance, Risk, and Compliance Office**. The creation of this office accelerated compliance with the requirements of the new State Law No. 13,303, of 2016, and is aligned with the Anti-Corruption Act regulated in 2015.

In its structure, the new department integrated the responsibilities of other areas of Copel that until then had been responsible for risk management, governance, and integrity, placing the Company among the first Brazilian companies to incorporate business sustainability management activities into this area, seeking to align its governance practices with those of companies that are global benchmarks in this aspect. [G4-35](#), [G4-36](#), [G4-45](#)

Learn about the governance practices and policies that guide the Company's businesses:

• [Corporate Governance Policy](#)

• [Governance Practices](#)



About the Report

Message from the President

Industry Context

About Copel

► Governance and Sustainability

Governance Structure

Performance of Governance Bodies

Integrity Practices

Sustainability Management

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

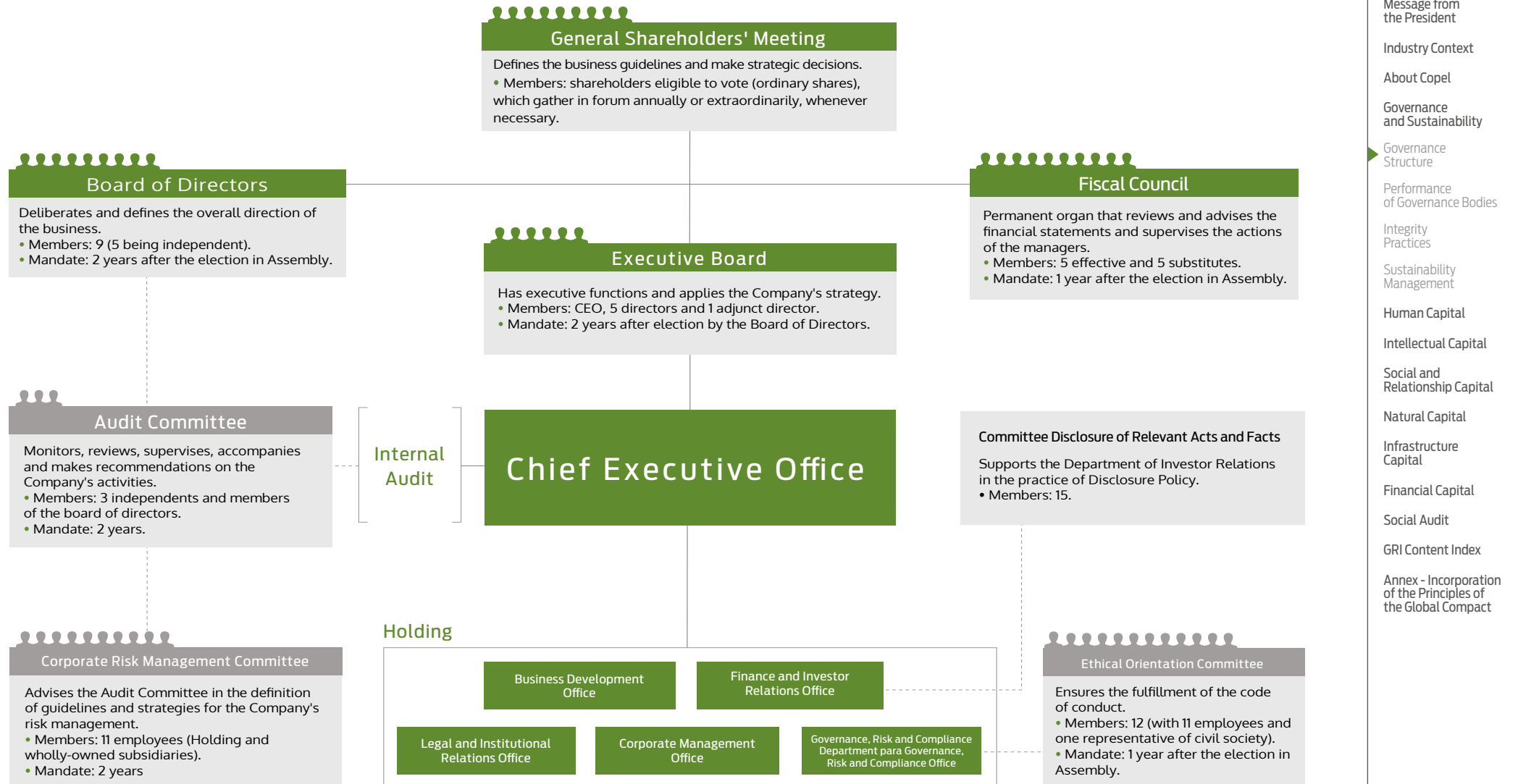
GRI Content Index

Annex - Incorporation of the Principles of the Global Compact

## Governance Structure

G4-34, G4-38, G4-42

Copel's management structure consists of four permanent deliberative bodies, broken down by levels of responsibility and advised by technical committees.



About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Governance Structure

Performance of Governance Bodies

Integrity Practices

Sustainability Management

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



## General Assembly

The Shareholders' General Meeting is the forum in which shareholders have the power to decide all business regarding the Company's purpose and to make resolutions deemed convenient concerning the defense and development of the Company.

The Annual General Meeting is held in the first four months of each year, and Extraordinary General Meetings may be convened whenever deemed necessary, on any date.

## Board of Directors

Copel's Board of Directors - CAD is composed of nine members, five of them independent. [G4-40](#)

The CAD holds regular meetings according to the pre-established schedule, in addition to possible extraordinary meetings (on average, there are eight meetings per year). In 2016, ten regular and six extraordinary meetings were held. [G4-47](#)

### Composition of the Board of Directors - period 2015-2017

[G4-38](#), [G4-39](#)

- **President:** Fernando Xavier Ferreira
- **Board member:** Antonio Sergio de Souza Guetter
- **Board member:** Mauro Ricardo Machado Costa
- **Board member:** José Richa Filho
- **Board member:** Carlos Homero Giacomini
- **Board member:** Marlos Gaio
- **Board member:** Sandra Maria Guerra de Azevedo
- **Board member:** Sergio Eduardo Weguelin Vieira
- **Board member:** Hélio Marques da Silva

## Executive Board

Copel's Executive Board is responsible for executive roles and has the exclusive responsibility of representing the Company. It is composed of six members who are

elected by the Board of Directors for a term of two years. Executive Board meetings are held every two weeks and the minutes are recorded in the appropriate book.

### Board Composition

- **CEO:** Antonio Sergio de Souza Guetter
- **Chief Corporate Management Officer:** Gilberto Mendes Fernandes
- **Chief Financial and Investor Relations Officer:** Luiz Eduardo da Veiga Sebastiani
- **Chief Legal and Institutional Relations Officer:** Cristiano Hotz
- **Chief Governance, Risk and Compliance Officer:** Fabio Malina Losso
- **Chief Business Development Officer:** Jonel Nazareno lurk

## Fiscal Council

Copel's Fiscal Council is permanent, composed of five members and five alternates elected by the General Meeting for a term of one year. It convenes monthly to deal with matters that include, among others, supervision of the acts of the administrators, analysis, and opinion on the quarterly and annual financial statements. All meetings of the Fiscal Council - both regular and extraordinary - are recorded in the appropriate book and, sometimes, in accordance with legal requirements, opinions are also recorded.

### Composition of the Fiscal Council - period 2016-2017

#### Members

- George Hermann Rodolfo Tormin
- Nelson Leal Junior
- Massao Fabio Oya
- João Carlos Flor Junior
- (vacant position)

#### Alternates

- Osni Ristow
- Roberto Brunner
- Gilmar Mendes Lourenço
- Aurelio Belarmino Barbosa
- Vinícius Flor

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Governance Structure

Performance of Governance Bodies

Integrity Practices

Sustainability Management

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



## Audit Committee

G4-49

Reporting directly to the Board of Directors, the Audit Committee is composed of three members of the Board, who are independent according to Rule 10A-3 of the Securities Exchange Act, with the characteristics, composition, operation, and powers established in a specific Internal Regulation. [G4-40](#)

As of the next term of office of the members of the Committee, which will begin in May 2017, the Company will adopt the requirements provided in Article 25 of Law 13,303/2016 and State Decrees 6,262 and 6,263/2017, for the appointment of board members.

The Committee holds regular meetings at least six times a year, according to a previously defined schedule, with extraordinary meetings and, if necessary, with any member of the Board of Directors, Independent Auditors, Internal Audit, or Fiscal Council. In 2016, a total of 16 meetings were held to deliberate on approval of annual planning of the work, performance, and monitoring of the activities of the Internal Audit.

It also oversees the Internal Audit, responsible for developing and executing the Annual Audit Plan, which covers the Copel corporation, its business units and interests, conducting special audits through requests received through the proper channels, preparing and submitting reports of the results of the audit to the Company's Management and the Audit Committee, when necessary, communicating the results of the audit, with recommendations and/or suggestions for the auditees to improve management of their respective areas, among others. The Internal Audit Regulations are available online.

## Corporate Risk Management Committee

A permanent advisory body. It is a subordinate of the Audit Committee and is composed of representatives of the Board of Directors, the Superintendency of Controllershship, Management and Participations, the Coordination of Corporate Regulatory Affairs and Integrated Corporate Planning, and a member of the Internal Audit. The Corporate Risk Management Committee is the department responsible for preparing the Company's

risk matrix, managing it, and recommending preventive security measures to the business. This committee has an annual agenda of ordinary meetings, and may convene extraordinarily whenever necessary. [G4-45](#), [G4-46](#)

In 2016, the Corporate Risk Management Committee reported to the Audit Committee its monitoring of 19 significant concerns regarding the Company's business, of the following nature: stakeholders; social and environmental liabilities; contingencies and judicial deposits; property, permanent, intangible assets, and receivables related to the concession; suppliers; labor obligations; accounting procedures, and information technology. [G4-50](#)

### Risk Management G4-2

Copel's Integrated Corporate Risk Management covers all corporate areas, its wholly-owned and controlled subsidiaries, jointly held affiliated companies, and establishes the formation of a Corporate Risk Management Committee, which reports to the Audit Committee.

The guidelines adopted are based on renowned structures and standards, such as the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and ISO 31000, and whose purpose is to maximize economic, social, and environmental value to stakeholders and ensure compliance with laws and regulations in force.

The risk management model adopted by Copel considers legal, regulatory, social and environmental, and reputation aspects, among others, and serves as a base for decision-making processes and operating activities, taking into account the following risk profiles: strategic, operational, disclosure, and compliance. The model also defines the parameters of appetite for risk, likelihood of occurrence, and its social and environmental, financial, operational, and image impacts, providing tools for its preventive treatment and mitigation. [G4-14](#)

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Governance Structure

Performance of Governance Bodies

Integrity Practices

Sustainability Management

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



Deficiencies and recommendations on internal controls are routed to business areas through "Internal Controls Certificates." For each note, an action plan is developed, which will be monitored in the following year.

This process is coordinated by Corporate Integrity Coordination, a body that reports directly to the Governance, Risk and Compliance Officer, with whom it meets periodically, and is responsible for reporting its activities to the Audit Committee and the Executive Board. Copel also in place has an Internal Audit structure, responsible for assessing the adequacy of internal controls, the effectiveness of risk management, compliance with standards, and process reliability.

## Performance of Governance Bodies

### Remuneration

G4-51, G4-52

Copel's Administrators and Fiscal Advisers have their remuneration defined during the General Meeting, which takes into account the remuneration of the previous period and the corresponding monetary restatement. In 2016, overall remuneration for the Executive Board, for the Board of Directors, and for the Fiscal Council totaled nearly BRL 9.5 million.

### Self-Assessment

G4-44

In pursuit of continuous improvement, the Company annually conducts a self-assessment of the Board of Directors, the Executive Board and the Audit Committee. Board Members and Directors answer a specific questionnaire for each department. Based on the analysis of the results, strengths and weaknesses are indicated and proposals are made for improvement.

### Assessment

G4-44

In order to provide greater credibility to the process of assessing the performance of the Company Administration, Copel contracted an external consultant to carry out the

assessment. In addition to being a best practice in governance and management the initiative meets the requirements of Law No. 13,303/2016.

After analyzing the results of the Assessment of the Administration held in 2016, the Board of Directors approved the continuity of the process and requested the plan for evolving the methodology to be presented in the first quarter of 2017.

In 2016, the main opportunities for improvement identified refer to the management and transparency dimension, as follows:

- Availability of relevant information about the organization, market trends and the industry sector;
- Monitoring feasibility and execution of strategic planning;
- Monitoring risks and internal control processes;
- Monitoring transactions between companies and stakeholders.

The main actions for improvement implemented were:

- Prior preparation for meetings in order to further knowledge and the decision-making process of the administrators aiming to improve management processes in order to sustain the business strategy and ensure expected results;
- Publication of the Stakeholders Transactions Policy.

### Development

The Administrator Training Program is aimed toward directors, presidents of subsidiaries, and executive officers. The content was developed in modules and included issues regarding corporate governance, economic and financial aspects, business strategy, fiscal council, and administration and strategic management of business risks.

The program aims to develop the competencies required for Members of the Board and of the Fiscal Council to perform their activities. It also aims to train professionals who act as directors of Copel's subsidiaries and affiliated companies, so that their performance may be more effective. G4-43

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Governance Structure

Performance of Governance Bodies

Integrity Practices

Sustainability Management

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



## Integrity Practices

Copel has several structures in place to establish a transparent dialogue and ethical relationship with all its audiences. These mechanisms form the integrity practices of the Company and its subsidiaries, based on alignment with the UN Global Compact<sup>2</sup> and the public commitment to fight against corruption.

The Company uses internal tools in order to disseminate ethical conduct and identify deviations. To this end, the Company makes available the **Compliance Portal**, which contains mechanisms adopted to guide the transparency and ethical conduct of its activities. Learn about the mechanisms adopted by the Company, such as the Confidential Communication Channel, the Copel Distribuição and Copel Telecomunicações Ombudsman's Office and the Ethics Guidance Committee (COE) on the **Compliance Portal**. [G4-56](#)

This structure is monitored by determining that process managers issue "Certificates of Internal Controls," formalizing the cases of nonconformities detected and thus committing to regularizing them. All these mechanisms are overseen by the Audit Committee.

According to the recommendations of the Second External Control Inspectorate Office of the Audit Court of Paraná (*Segunda Inspeção de Controle Externo do Tribunal de Contas*), Copel promoted improvements on its **Transparency Portal**, making access easier with more detailed information.

The result of the work was praised by the inspectors, and mentioned as a benchmark at the State Audit Court (TCE-PR). Learn about the improvements on the **Transparency Portal**.

In addition to immediate and detailed access to all content, the new portal facilitates the export of data, now fully complying with the Access to Information Act. Among the innovations added to the portal is the inclusion of a link to report cases of corruption, information regarding corporate participation in concession contracts, and public bids opened by the Company, among others.

Copel proactively adopted the practice of scheduling monthly meetings with TCE-PR to streamline possible actions and/or proceedings by the 2nd inspectorate, thus improving the flow of information and demands, as well as the relationship between Copel and TCE-PR.

## Integrity Program

The Integrity Program is a platform for disseminating the Company's commitments to transparency and the fight against corruption. In 2016, Copel implemented the Distance Learning (EaD) training program in order to raise awareness of ethical behavior among all employees of Copel and its subsidiaries.

A total of 7,724 employees were trained in the fight against corruption, equivalent to 90.54% of the employees, in addition to all members of the Company's Board of Directors. [G4-SO4](#)

The program was further strengthened by disseminating the Company's ethical standards using all internal communication channels such as emails, internal newsletters, intranets, meeting minutes and others, as well as making all related corporate rules of the Integrity Program available on the web.

All these actions are reflected in the reduction of cases of corruption involving Copel's employees. Four people received sanctions for their involvement in suspicious activities in 2014 and 2015. In 2016, no case was registered. [G4-SO5](#)

There were also two events with aspects focused on integrity:

**Management Meeting:** presenting the current scenario facing integrity practices and how companies are reacting to the need to adapt their processes, and implement an integrity program. It was attended by over 500 managers.

**25º GAIP – Group of Internal Auditors of the State of Paraná:** held at Copel's premises, aiming to contribute to the evolution of the profession of Internal Auditors, supporting the official institutions that govern this activity, as well as other correlated activities. At this meeting, the aspect "How Copel structured its Risk Management, Internal Controls, and Compliance areas, and the relationship of these areas with Internal Audit" was discussed. This event registered a record number of participants, with 92 present.

2 - Copel has been the United Nations' Global Compact signatory since 2000 and joined the Call to Action initiative launched in 2014 by the UN's Global Compact, aimed to encourage governments to fight against corruption.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Governance Structure

Performance of Governance Bodies

Integrity Practices

Sustainability Management

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact





### Compliance tested in company contracts and processes

Copel maintains a commitment to taking preventive action in the fight against corruption; thus in 2017 the Company will conduct **systematic compliance tests in contracts and processes** that are more fragile, among which we highlight: financial, accounting, procurement, and information technology.

Aiming for greater effectiveness in risk management in the supply chain, Copel is developing a **due diligence** process for **critical business suppliers** to be implemented in 2017, which, in addition to handling corruption risks, will contribute to monitoring social and environmental issues.

Also in 2017, Copel will hold a **workshop on the Integrity, Anti-Corruption and Social and Environmental Act** for its main critical suppliers. Copel Telecomunicações will also develop an Integration Program with its service providers and contractors, with lectures on safety and integrity, for all its partners.

### Code of Conduct

G4-56, G4-57

The Company's **Code of Conduct** is aligned with its values, the Principles of the UN Global Compact, and Corporate Governance guidelines. It defines actions that promote integrity, transparency, safety, and health. The document also addresses social and environmental responsibility, respect, and the relationship with the various segments in which the Company operates.

Created in 2003, based on ethical parameters, the code is a guiding instrument for the acts of all those who carry out activities on behalf of Copel. The Code was revised at the end of 2015, and was even submitted to public consultation. In 2016, it was widely publicized in the media and all employees received a hard copy. [G4-SO4](#)

In order to disseminate the concepts of the Code of Conduct, in 2016 Copel developed specific training in the "Distance Learning" modality (EaD), where 543

employees participated. The goal is to ensure that all employees take this module by October 2017. For the 2017/2018 cycle, a new version of the EaD Code of Conduct is planned, with emphasis on the Confidential Communication Channel.

As a best practice, the Company has defined in an administrative standard that the Code must be revised every two years, and every four years, through public consultation, in a candid and open dialogue with all stakeholders. For 2017, a new update of the Code of Conduct is planned, seeking improvement in compliance issues.

The **Code of Conduct** is available to all stakeholders at the Company website.

### Risk Assessment for Corruption

G4-SO

As part of its **Policy on Integrated Management of Corporate Risks**, Copel works to ensure constant monitoring of threats of corruption within the Company, and of fraud in the internal control environment.

Due to these safety criteria, all operational processes are annually submitted to risk assessment involving errors or frauds that may interfere with the results of the financial statements. In this respect, controls are submitted to tests by an Internal Audit and an Independent Audit, the results of which are reported to senior management.

In 2016, the Company submitted 28 transactions to risk assessments concerning corruption. This was 100% of the transactions carried out in the year, and no cases of corruption were identified in the period.

### Reporting Channels

G4-57, G4-58

In order to gather opinions, criticism, complaints, claims, and personal consultation, Copel provides a communication channel, presented below, which, in addition to fighting fraud and corruption, expands the organization's relationship with stakeholders.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Governance Structure

Performance of Governance Bodies

Integrity Practices

Sustainability Management

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



**Confidential Communication Channel** - This channel is intended to receive reports and claims associated with noncompliance with standards and laws, especially those associated with fraud or irregularities involving financial, audit, or accounting issues. The channel ensures protection, confidentiality of the person making the report and response to the claim. It is available 24x7 through a toll-free number: **0800 643 5665**.

**Ombudsman's Office** - There are two channels open to all audiences, both internal and external, to receive suggestions, complaints and reports, which are available on business days, from 8 AM to 6 PM, via toll-free number.

The Ombudsman's Office for Copel Distribuição is available prepared to receive complaints personally or through mail sent to the address Rua Professor Brasília Ovídio da Costa, 1703, district of Santa Quitéria, zip code: 80310-130, in Curitiba, PR.

The Ombudsman's Office for Copel Telecomunicações is available receive complaints personally or via mail sent to the address Rua Emiliano Pernetá, 756, district of Batel, zip code: 80420-080, in Curitiba, PR.

**Committee to Investigate Claims of Mobbing (CADAM)** - to address and support all employees victim of mobbing in the workplace. The information is confidential and both the person reporting and the person reported have the preservation of their identity guaranteed. Email: [cadam@copel.com](mailto:cadam@copel.com).

**Ethics Guidance Committee (COE)** - The COE evaluates and offers guidance in processes associated with ethical conduct within the Company and has up to 90 days to provide a final solution. Email: [conselho.etica@copel.com](mailto:conselho.etica@copel.com).

In addition to these channels, Copel is open to receive requests for information, services, criticism or suggestions for improvement, guidance and grievances from its audiences through various **service channels**.

## Sustainability Management

Copel's commitment is to promote economic growth with social and environmental responsibility, in line with the Sustainability and Corporate Governance Policy.

At the end of 2016, Copel restructured the duties of sustainability and governance, creating the Coordination of Corporate Sustainability and Corporate Governance with a scope of action that includes following the sustainability agenda, disseminating culture, and adopting best practices in sustainability and corporate governance. The Coordination reports directly to the Risk, Governance, and Compliance Office. **G4-35, G4-36**

Sustainability challenges are part of the strategic framework, through the mission, vision, values, and strategic guidelines, and are aligned with business planning, linked to the strategic objective, "Improve performance in sustainability". **G4-36**

In its ongoing search to improve the Company's sustainability performance, in addition to managing aspects and indicators, Copel considers expectations and works to improve communication and relationships with our stakeholders. **G4-35, G4-36, G4-45**

In this work, the following main market practices are used to:

- Guide and assess performance, as well as compare practices with global and national benchmarks: questionnaire from RobecoSAM (Dow Jones Sustainability Index - DJSI), Ethos Indicators for Sustainable and Responsible Business Models, and the Corporate Sustainability Index (ISE - BM&FBOVESPA).
- Report our performance and engage our audiences: Global Reporting Initiative (GRI), Integrated Reporting (IR), Carbon Disclosure Project (CDP) and Global Greenhouse Gas Protocol (GHG).

The main purpose of corporate sustainability and corporate governance is to ensure continuity of the Company, which is achieved through recognition that our practices must meet the expectations of our stakeholders.

One of the main results of the action was that in November 2016, the Company was selected to remain in the group of the most sustainable companies in the São Paulo

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Governance Structure

Performance of Governance Bodies

Integrity Practices

Sustainability Management

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



Stock Exchange (ISE - BM&FBOVESPA) in the 2016/2017 portfolio, where it evolved the most since 2012, above the average performance of the portfolio. Copel has been a part of eleven of the twelve editions of the Corporate Sustainability Index (ISE), since the index was created, in 2005.

The year 2016, was also marked by the continued inclusion in the Morgan Stanley Capital International (MSCI) Sustainability Index, a global leader in the preparation of financial indices that serve as reference for investors. The MSCI ESG seal is awarded to companies that show excellent performance in the social, environmental and corporate governance areas. COPEL obtained a maximum score in 27 of the 28 indicators analyzed in 2016, and AA concept on a seven-level scale that ranges from CCC to AAA.

Copel was also selected to be part of the FTSE4Good Emerging Index, an index linked to the FTSE 100, of the London Stock Exchange, which recognizes companies that have best practices in the social, environmental, and governance areas, and is a reference for investors.

### Voluntary Commitments

G4-15, G4-16

Committed to sustainable development, in the course of its history, Copel has made several voluntary commitments that it disseminates throughout its value chain and other stakeholders.

### Global Compact

A signatory of the UN Global Compact since 2000, Copel endorses the principles proposed by the initiative, based on three main aspects: constant improvement of management systems and corporate policies; supporting the formulation, implementation, and improvement of public policies and consolidation of partnerships with other companies, institutions, or organizations in projects that may bring social and environmental gains. In line with this commitment and the Sustainability Policy, Copel participates in the Brazilian Network of the Global Compact and has had representation

in the Brazilian Committee of the Global Compact - CBPG, since its creation in 2004.

### National SDG We Can Movement

The SDG is a global agenda that comprises 17 objectives and 169 goals to be achieved by 2030. The National SDG We Can Movement acts in support of this global development agenda defined by the UN, which is non-partisan, ecumenical and plural. It is the result of coordinating volunteers from the three sectors of Brazilian society in order to promote the improvement of the population's living conditions, from a sustainable development standpoint in Brazil and internationally.

As a member of the Brazilian Global Compact Committee, Copel participated in a study on the contribution of companies in the Brazilian electricity sector to the Sustainable Development Goals (SDG), launched by the United Nations Global Compact. The study seeks to create a methodology that translates business engagement with SDG, identifying best practices and learning, and providing inputs for strategic guidance of the Brazil Network of the Global Compact.

### Corporate Contribution to Promoting a Green and Inclusive Economy

Copel assumed the commitment in 2012 at Rio+20. It is the public commitment of companies signatory to the Global Compact with the adoption of initiatives toward a more inclusive economy, which contributes to face major challenges in sustainability in Brazil and worldwide.

### Statement of Cultural Action for Governments in the Fight against Corruption

Copel adhered to the statement in 2014, reaffirming its commitment to transparency and the fight against corruption, expressing its support to the Post-2015 Development Agenda, in an effort to promote sustainability, ethical conduct, and best practices in corporate governance.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Governance Structure

Performance of Governance Bodies

Integrity Practices

Sustainability Management

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact





### Corporate Pact for Integrity and Fight Against Corruption

The company became a signatory in 2015. Its principles are based on the Charter of Principles of Social Responsibility, on the United Nations Convention against Corruption, on the 10th principle of the Global Compact, and on the guidelines of the **Organization for Economic Co-operation and Development (OECD)**.

### Eradication of Child, Forced or Bonded Labor

In alignment with the principles of the Global Compact and the Sustainable Development Goals - SDG, Copel commits to implement tools to bar hiring products and services from suppliers who use child, forced or compulsory labor in its value chain. In 2016, Copel joined the **Network of Companies for Education and Eradication of Child Labor**, which reaffirms the Company's concern for the cause.

### Sexual Exploitation of Children and Adolescents

The Company promotes actions to raise awareness among employees, suppliers, and customers against the sexual exploitation of children and further disseminates its commitment in its Supplier Manual and through specific clauses in its agreements.

### Fight against Discrimination and Valuation of Diversity

The Company created the Permanent Committee on Diversity, whose goals

are to raise awareness and involve employees in the promotion of equal rights, opportunities and recognition of everyone, with special attention to follow vulnerable groups subject to discrimination based on gender, race, color, physical disability, sexual orientation, age, and religion.

### Prevention of Mobbing and Sexual Harassment

Copel recognizes health and safety at the workplace as a fundamental human right, valuing life and respecting physical and moral integrity of people, intended to create a gratifying and conducive work environment to generate productivity.

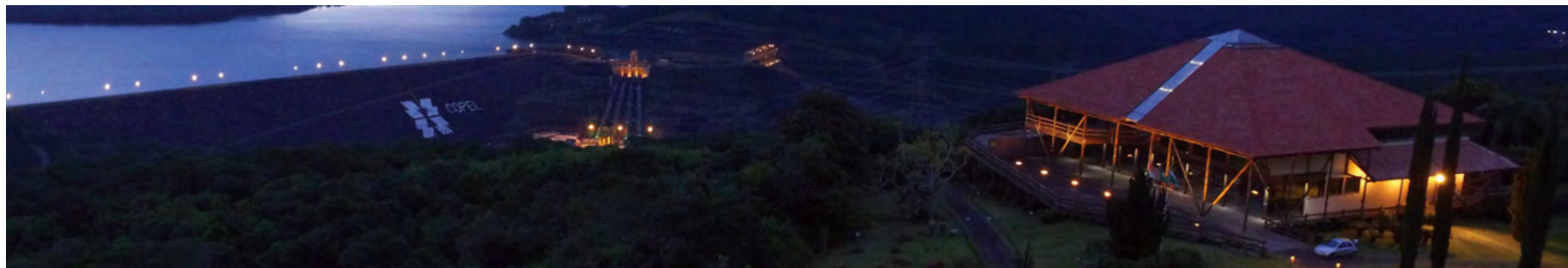
### Respect for Free Association and the Right to Collective Bargaining

Copel guarantees the principles of freedom of association, for individuals and collectively, pursuant to article 8 of the 1988 Constitution, and Convention No. 87, of the International Labor Organization - ILO.

### Principles for Responsible Management Education (PRME)

Copel Corporate University (UniCopel) became, in 2014, the first of its kind in Brazil to adhere to the PRME, a program by the United Nations that promotes training of leaders toward responsible management of businesses.

Learn more about the commitments assumed on the Sustainability page – **Voluntary Commitments.**



- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Governance Structure
- Performance of Governance Bodies
- Integrity Practices
- Sustainability Management
- Human Capital
- Intellectual Capital
- Social and Relationship Capital
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact

# Performance in Capitals

Copel has executive areas that cover the Company's most important strategic fronts. In these areas, considered business capitals, Copel shows its capacity to create value for stakeholders in the short, medium, and long term.

"Capitals are deposits of amounts that increase, reduce or transform through activities and products from the organization. For example, the financial capital of an organization increases when it generates profit, the quality of its human capital improves when employees receive better training."

IIRC Framework

Human capital  
Intellectual capital  
Social and Relationship Capital  
Natural Capital  
Infrastructure Capital  
Financial Capital





This is Donizete Benedicto Barboza

## 06 . HUMAN CAPITAL

Human Capital Profile // Performance Management // Professional Development // Health and Safety



## 06. Human Capital

Investment in human capital is one of Copel's main strategic pillars. There are two main challenges regarding Human Capital management at Copel, which guide their development strategies, remuneration, and employee assessment. The first is adjusting personnel costs, since it is a public and regulated concession, where the priority is tariff accessibility, resulting in a constant search for productivity, efficiency, and operational excellence.

The second challenge is the search for more diversified projects using other sources of clean energy, for example, wind power generation and distributed generation, which represent a constant need to develop its professionals, as well as generate and retain knowledge.

This vision of the future market guides strategies for the development, engagement, and assessment of employees, and is reflected in its policies for People Management and Occupational Health and Safety. Initiatives at Copel are always focused on enhancing both professional and personal development, improving knowledge management practices, and strengthening the Company's innovation and safety culture, based on providing equal opportunities.

The Company believes that professional qualification and well-being of its employees is reflected in better results in terms of business growth. To this end, Copel traditionally fulfills a benefits commitment that gives the company advantages in the market.

In addition to maintaining its competitive advantages in the market, and promoting a motivating climate in the workplace, Copel understands that modern forms of management significantly contribute to maintaining its competitiveness.

Accordingly, Copel launched Anima, an unprecedented initiative whose challenge is to build a new participatory management model, openly discussing its future with over 8,500 employees.

Initially formed by eight projects, its main concepts are: involvement, proactivity, participatory leadership, greater synergy between the holding company and the

businesses, collaboration, sharing, satisfaction, well-being, and work safety, as well as pioneering the use of blank spaces in the market and society.

The idea is to allow all Copel employees to contribute to creating a management model capable of preparing people to perform their roles in an increasingly complex scenario where new technologies arise and improve with great speed.

### Human Capital Profile

Copel's Workforce  
G4-9, G4-10

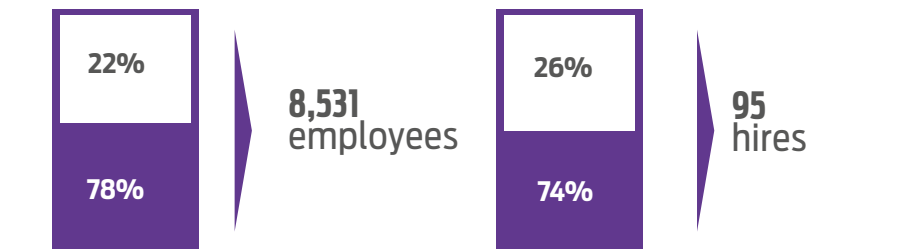
1,900 women

6,631 men

\*New Hires in 2016  
G4-LA1

25 women

70 men



\*Approximately half (49%) are less than 30 years old.  
The turnover rate was 1.7%.

- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- ▶ Human Capital
  - Human Capital Profile
  - Performance Management
  - Professional Development
  - Health and Safety
  - Intellectual Capital
  - Social and Relationship Capital
  - Natural Capital
  - Infrastructure Capital
  - Financial Capital
  - Social Audit
  - GRI Content Index
  - Annex - Incorporation of the Principles of the Global Compact

All Company employees are covered by a Collective Bargaining Agreements and have contracts governed by the Consolidation of Labor Laws (CLT). [G4-11](#)

The Company bases its relationship with all its employees on the guidelines of its policies for People, Health, and Safety Management, its Code of Conduct, and the Copeliano Manual, in compliance with the Consolidation of Labor Laws (CLT), the fundamental conventions of the International Labor Organization (ILO) and the Universal Declaration of Human Rights.

In addition to direct employees, the Company operates with 5,666 contractors. These are contractors providing services such as: customer services, construction of transmission lines, networks and substations, connections, disconnections and re-connections, reading low voltage meters, maintenance of electrical systems, green areas, and buildings, private security, and maintenance, among others.

### Respect Creates an Inclusive Culture

Copel was one of the first Brazilian companies to allow the use of the “social name” - a name chosen by employees who have adopted a different sexual identity - on their ID badge.

Regarding **gender equality** at Copel, one in five employees is a woman. The ratio is the same among managers, reflecting the seriousness with which the Company addresses issues related to equal conditions and the opportunities offered to women in the workplace. In 2015, Copel was awarded the Pro-Equity Seal for Gender and Race from the Federal Government for the second time, and in 2016, Copel was one of the 48 companies selected by the organizers of the WEPs Brazil Award - Women’s Empowerment Principles.

### Remuneration and Benefits

The Company’s career and remuneration structure establishes remuneration standards compatible with the market and the position, title, and level of the employee, according to training and qualification, enabling recognition for individual development.

This structure aims to:

- Identify the positions and roles required to perform the activities;
- Define training required to perform the activities regarding each position and role;
- Establish the levels of maturity and complexity of each position and role required to meet the demand of each job position;
- Establish rules for the functional (vertical) and salary (horizontal) movement of employees;
- Demonstrate opportunities for career growth and development.

In 2016, the average annual remuneration adjustment of all employees was 10.62%. The ratio between the percentage of increase in remuneration of the highest paid individual and the percentage of increase in the average annual remuneration of all employees was 0.86. [G4-55](#)

### Relocation Program

Valuing people, prioritizing internal mobility, and allowing employees to move to other locations or areas of the company are the main objectives of the Relocation Program launched by Copel. Reflecting the wishes of the employees themselves, expressed through the Employee Opinion Survey (POE), the initiative enables employees to become more active in managing their own careers, collaborating toward personal and professional development.

The program is intended to optimize the workforce by increasing gains in productivity, offering equal opportunities based on the principle of transparency in the decision-making process regarding internal movement of people. Since its launch in 2016, a total of 120 job openings have been made available internally.

- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Human Capital Profile
- Performance Management
- Professional Development
- Health and Safety
- Intellectual Capital
- Social and Relationship Capital
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact

## Benefits

G4-EC1

Copel offers a benefits package that goes beyond those required by law, and is in line with those of the best companies in the market. It annually delivers to its employees the Benefit Balance - BBC, which provides a comprehensive view of the benefits offered by the Company, with stratified information regarding what each employee received in the previous year, in terms of salary, additional pay, allowances, profit sharing, financial and non-financial benefits, as well as future benefits regarding the pension plan and the government's severance fund (FGTS). [G4-LA2](#)

## Performance Management

In 2016, Copel continued the Performance Management Program - called Our Energy. Improvements for each cycle are provided by the experiences of previous cycles and by performance management practices. In this way, we always seek spot and assertive changes that do not modify the essence of the model, in order to preserve its main characteristics and make it increasingly continuous and consolidated. An example of a change was including the calibration process that minimized distortions and errors in the evaluations. The objective is to further adapt the model to the Company's market practices and needs. In 2016, all (100%) of the employees received their performance assessment. Through the Employee Opinion Survey (POE), which is carried out every two years, we verify that all employees were subjected to the evaluation interview and whether it contributed to improving the people management process. [G4-LA11](#)

## Professional Development

G4-DMA-EU14

### Investments in Human Capital in 2016

G4-LA9



Short term	2,242 events	416,298 hours of training
	34,488 participants	Average of 48.8 hours per employee
Long term	Language Courses	
	Post Graduate Courses	302 participants

In 2016, a total of **BRL 8.75 million** were invested in training and people development.

The guiding principles for development of human capital are goals and objectives derived from Copel's strategic planning, as well as the need to develop the skills of each employee. These training and development initiatives ranges from basic training, intended for certain roles, to graduate courses at specialization and doctorate levels.

These actions are organized into **corporate programs** (education actions geared toward the entire Company), **qualification** training (basic training to perform a given role), **compulsory training** (courses for certain activities), training for **professional development** and **events** (seminars, lectures, workshops, congresses, etc.).

**Corporate** education actions (Integrity, Sustainability, Foreign Language Training, Leadership, Preparation for the Future, Integration, among others) are coordinated by the Corporate University (UniCopel). **Basic training courses** are aimed at empowering the employee in a new activity. One highlight is the **Distribution Electricians Training Program**, in which the newly admitted employee receives the initial training necessary for the proper performance of the function.

Good ideas, informal conversations, and suggestions for improvements in processes, from employees to senior management are the strengths of **Chats with the President**. In 2016, ten meetings were held, including trips to other cities in the state, and breakfast and lunch with employees and the President. In these two years of conversation, the program enabled the President to meet with about 180 employees from the Copel units in Paraná, Mato Grosso, São Paulo, and Rio Grande do Norte.

### Employee Qualification and Training Programs

In 2016, **UniCopel** focused on three fronts: Integrity, Sustainability, and Transformational Leadership.

- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Human Capital Profile
- ▶ Performance Management
- Professional Development
- Health and Safety
- Intellectual Capital
- Social and Relationship Capital
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact





**Integrity Program:** In 2016, several training courses were developed to raise awareness about the topic at various levels of the Company, also considering the target audience for each event. Examples of such modern approach include training on general aspects of Anti-Corruption Law and Decree as well as Workshop on Integrity for all managers of Copel. The workshop included the topics of Anti-Corruption Law, Public Companies Law, and the role of corporate integrity. The Code of Conduct training was also started.

**Transformational Leadership Program:** Structured in alignment with the Principles for Responsible Management Education (PRME), a UN Global Compact initiative that fosters the education of leaders in charge of responsible business management and the application of knowledge in daily management, promoting alignment, integration, shared performance, and co-responsibility in the day-to-day activities of the company's business leaders.

Initiated in October 2016, the program has already reached ca. 22% of the 540 managers. The goal is that, by the end of 2017, all managers complete the training. For each module, trained managers must propose at least two practical actions to be implemented with their teams. Through the initiative, the company has invested not only in establishing the desired managerial profile, but in training its management team. The idea is that leaders are increasingly able to support and leverage the potential of their teams.

**Anima Program:** With the challenge of building a new participatory management model in 2015, Anima launched an innovative program sponsored by the presidency and permeated throughout the groups closest to the operations. Initially consisting of eight projects, aimed at intensifying the production and flow of ideas and action plans in all areas of the Company, where each employee is encouraged to imagine alternatives and solutions to aspects such as innovation, collaboration, proactivity, leadership, synergy between the holding company and the businesses, satisfaction, well-being, and work safety, as well as the pioneering spirit of occupying blank spaces in the market and in society. By the end of 2016, a total of 75% of the employees were trained in the program and involved in their conceptions.

The **Anima Program** aims to implement actions that value the Company's Human Capital, encouraging discussing ideas and points of view of different generations of employees in the creation of a participatory management model. In order to engage employees, the **Orange Blood** (*Sangue Laranja*) was created - a mote chosen to instill a sense of belonging among over 8,500 employees.

**Other Forms of Training and Development**

G4-LA10

In addition to promoting its own training and qualification programs, the Company encourages training of its professionals through the following initiatives:

**Educational Aid:** encourages employees to undertake postgraduate and other specialization courses, reimbursing 70% of school monthly tuition up to the limit amount of BRL 840.46. To this end, by means of an hour bank, Copel employees are excused from part of the work hours - provided the conditions of the curricular schedule are justified and compatible with the employee's career. In 2016, the program benefited 1,064 employees, reimbursing a total of BRL 4.53 million.

**Foreign Language Training Program - BABEL:** established in 2012 and intended for employees who perform activities in which another language is required. In 2016, a total of 255 employees benefited from German, Spanish, and English courses.

**Postgraduate courses:** promotes professional development in specific and strategic subjects focusing on producing research, dissertations, theses, creating innovation, and improvements for the Company and the electricity sector. In 2016, ten employees began postgraduate studies and in total, 47 participated in courses at lato sensu and stricto sensu levels, fully subsidized by the Company.

**Exchange Programs and Courses Abroad:** employees also participate in events abroad to share experiences and disseminate projects and constantly research aspects associated with the business. Also part of these actions is qualification through short-term courses, offered by national and international companies, guaranteeing quality of content and the effective improvement of the professional staff.

- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Human Capital Profile
- Performance Management
- Professional Development
- Health and Safety
- Intellectual Capital
- Social and Relationship Capital
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact



**Pre-retirement:** The Company began a series of events to guide employees on retirement conditions, providing support in taking decision about post-career.

**Training for Contractors:** Copel also offers training for contractors, provided that included in the contract or in the interest of the Company.

In 2016, the Second Workshop on Training for Environmental Programs was held, to raise awareness among Copel's service providers and the internal audience on social and environmental issues - in compliance with environmental licensing requirements (preliminary, installation, and operation licenses) from the Environmental Institute of Paraná (IAP).

### Measurement and Planning of Investments in Training

Investments in employee training are planned based on the Company's strategic objectives and on the process to assess the roles and activities of each professional. The focus of these investments is to maintain the availability of skilled labor in the long term. G4-EU14

Subsidiaries are responsible for managing goals and results related to investments in training, through tools such as Management Commitments and Critical Review Meetings. These meetings seek to ensure the effectiveness of the actions in the period, where follow-up indicators are presented and monitored with the help of the ERP-SAP system.

**Copel Distribuição** has a program in place called the **Talent Bank** that allows the identification of employees with potential to take on a higher-level leadership position.

To this end, criteria such as performance, potential, maturity, and time until retirement are analyzed. The talents Identified take part in specific processes to leverage development, among them, mentoring and coaching processes are highlighted, due to the empowering nature of performance and maturity. In 2016, a total of 250 potential leaders took part in the **Talent Bank** and may fill openings such as division managers, department managers, or superintendents.

The **Individual Development Plan** was **Copel Telecomunicações'** way of preparing its professionals to meet the challenges of the business, identifying the skills required for their processes.

The Individual Plan is a tool to help managers cascade the strategic plan and corresponding management commitments, in addition to contributing to the development of professionals by offering a comprehensive vision of their training needs.

In line with the Company's strategic objectives, in order to disseminate experiences and knowledge and to continuously improve its processes, **Copel Geração e Transmissão**, through the INOV+GeT and ETGET Programs, holds technical meetings to promote knowledge sharing, integration, and dissemination of matters related to the operation and maintenance of transmission lines, substations, and power plants, as well as matters related to management, environment, land, finance, accounting, legal, and safety.

### Awards and Recognition in Professional Development

The awards received reflect the result of a set of actions carried out by the Company. Copel won the CIER (Regional Energy Integration Committee) Award for the third time in the last four years, which distinguished it as the best Distributor in Latin America.

The Company also won the Transparency Trophy, granted by ANEFAC (National Association of Executives of Finance, Administration, and Accounting), recognizing the quality of the accounting information provided to the market. The Company is the only state-owned company among the five companies in the electricity sector awarded in the 20th edition.

For the third time, Copel Distribuição won the **National Electricians Rodeo**, focused on perfection in executing daily tasks carried out by electricians, focusing on technical expertise, safety, and agility.

- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Human Capital Profile
- Performance Management
- Professional Development
- Health and Safety
- Intellectual Capital
- Social and Relationship Capital
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact



# Health and Safety

G4-LA6

## Health and Safety Performance Indicators

Category		2015			2016			
		DIS	GET	HOL	DIS	GET	CTE**	HOL*
Fatalities	Employees	0	1	0	0	0	-	0
	Contractors	4	2	0	0	0	-	0
Absenteeism rate	Employees	2.48	1.36	4.68	2.80	1.08	1.16	1.48
Lost Time Injury Frequency Rate	Employees	5.92	4.01	1.42	5.95	3.26	0.88	0
	Contractors	5.59	11.41	0	3.74	5.70	1.47	4.63
Severity Index	Employees	185	2,468	1.42	207	21	-	0
	Contractors	3,181	3,338	0	349	231	-	138.89

\* The numbers for the Holding Company include the subsidiaries Renováveis e Comercialização, and are consolidated until November 2016; the frequency and severity rates were not assured.

\*\* The absenteeism rate of Copel Telecomunicações was not assured.

Since it develops activities associated with risk factors, the Company has in place an **Occupational Safety Policy**. The area of Occupational Health and Safety Management (OHSM) at the Company is responsible for identifying these risks and defining preventive actions allowing for tasks to be completed safely.

**Training and qualification:** programs such as Training of Field Inspectors, and Training for the Use of Preliminary Risk Assessment, are offered to employees. These courses aim to establish active prevention in order to identify and prevent occupational diseases and accidents.

**Promotion of health:** Copel has in place an occupational health service that offers employees, through the Copel Foundation, a health plan to conduct diagnostic exams for diseases that can affect capacity and productivity at work.

**Preserving Life Program (PPV):** establishes field inspection of the technical and safety procedures during the execution of activities, pursuant to standards of the OHSM area, where a technician from the occupational safety area, or from departments, monitors the teams and issues reports with scores for faults encountered. At Copel Distribuição,

compliance with legal requirements by contractors is monitored through the PPV. Given the high employee turnover rate among contractors, and the characteristics of the agreements, there is no specific manner to determine the percentage of contractors trained; however, the company adopts as a rule to provide onboarding training on safety to all contractors.

**Participation in the Electricians Rodeo:** in order to promote the culture of work safety and development in performing as electricians, Copel encourages participation in the Electricians Rodeo, which consists of joining teams of electricians and technicians from all regions of the state, on an internal phase, and teams of electricians from different electricity utilities around the country that compete among themselves, on a national phase, where the competition activities are based on following safety standards, acting with expertise, and having differentiated skills. It is an entertaining way of valuing electricians, encouraging integration, improving attention to work safety, and sharing experiences and knowledge. In the 2010 and 2014 editions, Copel Distribuição was champion of the national rodeo and in 2012 came in second place. In the 2016 edition, Copel Distribuição's teams took the top three places on the podium.

**Training and integration:** all field activities are conducted by contractors who have participated in the Occupational Health and Safety Onboarding, and in the exhibit about Risk Assessment carried out for the activities in question. Control of the minimum mandatory training for working with electricity is conducted through a proprietary application that contains information about employees of contractors and of the agreements.

The Company provides a specific Health and Safety Manual for **contractors**, whose content is included in all services agreements. **Outsourced companies** are contractually obligated to apply the guidelines described in the Guidelines for Occupational Safety and Health for Contracted Companies (available online), to achieve and demonstrate satisfactory performance regarding safety and health of their employees. In addition, Copel conducts onboarding lectures with each new hire, complementing the actions encouraging safe work.



- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Human Capital Profile
- Performance Management
- Professional Development
- Health and Safety**
- Intellectual Capital
- Social and Relationship Capital
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact





This is Cleusa Maria Pereira

# 07 . INTELLECTUAL CAPITAL

Research, Development, and Innovation // Brand // Website and Presence on Social Networks



## 07. Intellectual Capital

### Research, Development and Innovation

G4-EU8

Copel is recognized as one of the companies in the electricity sector that invests the most in technology. The increasing rate of investments is a strategy to ensure that the company stands out as one of the most modern.

The impacts of innovation are evident as the Company contributes to increased productivity, improved process execution, and quality of products and services. Innovation leads to differentiation in the Company's business and consequently enables greater competitiveness and consolidation of activities, strategically necessary for its sustained growth.

#### Management of Innovation Projects

Since 2015, Copel has had in place an Innovation Coordination that reports directly to the Presidency, whose objective is to establish Research, Development, and Innovation (R&D+I) policies, in order to coordinate the projects of the Holding Company, to monitor those of its wholly-owned subsidiaries, and coordinate special projects demanded by the CEO. There are currently 22 employees working exclusively in the areas of R&D and Innovation, which managed investments of around 0.37% of net revenue dedicated to project management and investments in innovation.

#### Investments in R&D

G4-DMA- EU8

Copel's R&D+I program has already earmarked BRL 263 million for innovation projects. Currently, there are 55 projects in progress, totaling approximately BRL 159 million in new investments.

Copel encourages the development of innovation projects, supporting internal teams and in partnership with universities and other centers of academic research. To this end,

the Company authorizes employees participating in R&D+I projects to work overtime up to the limit of 20 hours per month in order to carry out activities related to the project.

The R&D Award by Copel Distribuição and Copel Geração e Transmissão, for the projects with the highest potential for business value, aims to foster participation in proposing innovative projects aligned with strategic planning. This initiative offers opportunities and aims to encourage employees to become researchers along with academic training.

Copel invests in partner institutions in order to promote the technological evolution of laboratory facilities, academic research, and foster masters and doctorate degrees in fields that are relevant to the electricity sector. This ends up reflecting on social development, benefits, and improving quality of life for society.

In 2016, the Company's contributions in this area were:

**Copel Geração e Transmissão** invested BRL 15.3 million in 28 R&D projects. Four projects are strategic, with aspects established by ANEEL, and nine projects are conducted in cooperation with other companies in the sector. More than BRL 436,000 was invested in management of these R&D projects.

Investments in innovation are part of a new model adopted to subsidize planning and programming of generation in hydroelectric plants. Efforts have already recorded a gain of 8.6% in energy production, which corresponds to additional revenue of BRL 13 million in the second half of 2016. Theoretical studies show that gains from this shift in paradigm may reach a 20 % increase in generation, and revenue increase of BRL 30 million per year.

**Copel Distribuição** invested BRL 17.7 million in 31 projects, three of which are strategic projects, with aspects established by ANEEL, and six projects conducted in cooperation with other companies in the electricity sector.

The breakdown of investments can be found in the **Content Index**.



- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- ▶ Intellectual Capital
  - Research, Development and Innovation
  - Brand
  - Website and Presence on Social Networks
  - Social and Relationship Capital
  - Natural Capital
  - Infrastructure Capital
  - Financial Capital
  - Social Audit
  - GRI Content Index
  - Annex - Incorporation of the Principles of the Global Compact



## Results of Investments

In 2016 the following results can be highlighted:

Development of the **Integrated Energy Market Forecasting System (Sistema de Previsão Integrada de Mercado de Energia - SPIN)**, a computer system that integrates several projections of energy and demand for forecasting studies, assisting in decision-making of energy auctions, planning and expansion of the electricity distribution system, and in the relationship with government agencies (ONS, EPE), creating more assertive forecasts. The system is composed of management modules for measurement, geoprocessing, and billing data, and global forecasts of energy and demand (short term), busbar systems (medium term) and georeferencing.

### Copel Distribuição files first product patent

In 2016, Copel Distribuição filed a product patent, developed in the Research, Development, and Innovation - R&D+I program. It is a **voltage-sensing helmet** designed to increase safety of electricians in field work. The equipment detects electric fields and emits an intermittent audible alert when the electrician enters the so-called hazardous area - less than 60 cm away from the energized areas, for 13,800 volts, and 1 meter networks, for 34,500 volts. The prospect is that the helmet will become standard equipment for all Company electricians, and the first batch of 500 helmets was manufactured for use in 2017.

The **planning model and generation schedule in hydroelectric plants** presents the best alternatives for Copel Geração e Transmissão to generate more energy in order to contribute to the performance of the National Interconnected System. This is only possible because the calculation began including several details from the generating park, such as the flooding of the spillways at some

plants, the tunnel connecting the reservoirs of the Governador Ney Braga Plant and the Foz do Jordão Plant, machine operating points, and the uncertainty regarding the flow of the reservoir tributaries. These variables, when included in the scientific analysis made using the mathematical model, result in more refined operational decisions capable of optimizing the combined operation of all plants. In the second half of 2016, the use of the model recorded an 8.6% gain in energy production, which corresponds to additional revenue of BRL 13 million. Theoretical studies show that gains from this shift in paradigm may reach a 20% increase in generation and increase in revenue of close to BRL 30 million per year.

Another 15 patent applications have been filed with the National Institute of Industrial Property (INPI) for products developed under the Research, Development, and Innovation - R&D+I Program.

### R&D+I Projects under Development

Another highlight of 2016 was the launch of the **Gera Rural Program**, which aims to mobilize public and private institutions in the production of renewable energy on the rural properties of Paraná, grouping them into self-sufficient systems and energy exporters. Autonomous generation brings clear environmental and economic advantages. For the electricity system, gains are a result of diversifying sources, and by mapping the generation potentials in the State, producers will form microgrids that, once integrated, will guarantee a continuous supply of energy for the whole system.

*Gera Rural* began as a Copel R&D project initiated in 2015, which is implementing biodigesters on pig farm properties, and channeling the biogas from manure to a thermoelectric micro-plant in the municipality of Entre Rios do Oeste.

The program includes close relations with state and federal universities in order to align research projects and the installation of solar panels in schools in five

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Research, Development and Innovation

Brand

Website and Presence on Social Networks

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



macro regions in the State of Paraná, teaching new generations about distributed generation and the importance of clean energy.

In this spirit of integration, Copel proposed the formation of the "Energy of the Future" forum, in order to integrate the Company with universities and research, development, and innovation organizations operating in Paraná, within the concept of open innovation and collaboration, aiming to boost energy innovation actions.

## Brand

Copel participates in the lives of 11 million people in the state of Paraná. With electricity or Internet services, we are the Company that connects people to the world and to the comfort provided by electricity. More than a solid and reliable logo present in the daily lives of three generations, today Copel is a symbol of an efficient, modern, innovative company, always ahead of its time.

At home, at work, at school, in the industry, on the market, or in the field, we provide important services that are strengthened by transforming consumption habits, means of production, and social relations. We adapt and prepare to understand and meet the needs of our customers today and of future generations. That is why our presence on social networks is strengthened each year as another means of serving our four and a half million consumers. Information, guidance, and problem solving quickly become possible in the palm of the hand, at a click. We also communicate the risks of using electricity and the caution required for working with it. The benefit of our product lies in customer satisfaction, and the recognition of Copel as one of the best Companies in Brazil and Latin America, in the opinion of the consumers themselves (CIER and Abradee Awards).

## Website and Presence on Social Networks

We have diversified our channels, expanded our presence, and today we are on social networks: YouTube, Vimeo, Facebook, Twitter, LinkedIn and Instagram. We talk with, guide, and serve our consumers through social networks. More than

energy consumers, we want to build consistent relationships with conscious, informed citizens about our products and services.

The daily service calls, during business hours on the Twitter and Facebook networks, with 100% response in up to three minutes, more practical than travelling to one of our on-site service units or e-mail. We maintain two dedicated teams informed about everything involving our brand, services, and operation in the 10 states where we operate. Information and services are also available on our website, which in 2016 recorded 27,936,277 visits to the Virtual Agency, where the most requested service was a second copy of the energy bill, which was 7,301,840, or 11% of the visits to the website.

For 2017, we renewed our series of inspiring videos, "Atreva-se a Mudar seu Mundo" ("Dare to Change Your World,") which tell a bit about the lives of our employees engaged in volunteer work, people who do more than their day job at Copel.



This is Rakelly Schacht

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Research, Development and Innovation

Brand

Website and Presence on Social Networks

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



This is  
Thais Handar R. da Silva

## 08 . SOCIAL AND RELATIONSHIP CAPITAL

Customers and Consumers // Supplier Management // Local Communities // Indigenous Communities  
Education for Sustainability // Social Investments through Fiscal Incentives // Social Initiatives



## 08. Social and Relationship Capital

Copel believes that the continuity of its business model depends on ongoing dialogue with the various stakeholders: shareholders, consumers, employees, suppliers, the government, and communities. The Company considers a quality, transparent relationship with all these groups to be a competitive differentiator.

For this reason, Copel maintains a working group dedicated to having in place a structured relationship policy, governed by constant planning and activities, with the purpose of guaranteeing levels of excellence in the relationship of these groups with the Company.

### Customers and Consumers

#### Customer Satisfaction Management

G4-EU3

Copel Distribuição's customer profile	Dec/2014	Dec/2015	Dec/2016
Residential	3,437,030	3,527,126	3,597,105
Industrial	91,068	88,276	82,021
Commercial	369,205	376,959	382,121
Rural	372,464	368,297	360,066
Other (government, public lighting, public service, company's own)	57,203	57,404	57,454
<b>Total Number of customers</b>	<b>4,326,970</b>	<b>4,418,062</b>	<b>4,478,767</b>

#### Copel Distribuição

G4-PR5

In 2016, Copel was recognized for the third consecutive time as the best distributor in the country according to customer assessment. This recognition comes from the Abradee (Brazilian Association of Electric Power Distributors) customer

satisfaction survey and grants the winning company the ISQP award (Satisfaction Index for Perceived Quality). This indicator is calculated based on a questionnaire of approximately 100 questions, through which over 2,000 consumers from Paraná assessed the Company. The survey is conducted with nearly fifty distributors from across the country.

Abradee also awarded Copel as the best distributor in the Southern Region, according to customer assessment – the award was announced a day after Copel reduced its residential rate by 14.3%.

In addition to the competition organized by Abradee, Copel conducts research with **rural customers** every four years and with **government customers** in the first and last year of each mayor in office.

The satisfaction indicator is also monitored through the annual survey conducted by the National Electricity Agency (ANEEL), focusing on residential customers.

Customer Satisfaction Index - Distribuição (%)		2014	2015	2016
<b>ISQP Satisfaction Index for Perceived Quality</b>	Measured by Abradee, it evaluates customer perception of electricity distributors in five aspects: energy supply, information and communication, electricity bill, customer service, and image			
	Low voltage residential	89.3	88.6	88.8
	Low voltage nonresidential	85.6	86.5	84.8
	High voltage	86.3	78.6	85.9
<b>IASC Consumer Satisfaction Index</b>	Measured based on a survey by ANEEL, conducted since 2000, among residential consumers, in order to evaluate the level of residential consumer satisfaction with the services provided by electric power distributors.	75.2	60.3	73.1
<b>Rural Customer Satisfaction Survey</b>	The survey is conducted every four years*, by sending questionnaires to all 400,000 rural clients, along with the rural schedule for automatic meter reading.	*	77.9	*
<b>Government Satisfaction Survey</b>	The survey is carried out with the mayors of the municipalities, during their first and last year in office.	*	*	80.4

\*Surveys were not conducted in these years.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Customers and Consumers

Suppliers Management

Local Communities

Indigenous Communities

Education for Sustainability

Social Investments through Fiscal Incentives

Social Initiatives

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



## Copel Telecomunicações

G4-PR5

Copel Telecomunicações has conducted regular opinion surveys since 2008. Starting in 2015, the Company began to adopt the same data collection instrument used by ANATEL, making it possible to compare the results of the Company's quality indicators with those of other companies in the sector.

In 2016, the level of overall customer satisfaction with the quality of multimedia communication services remained high (80.1%), despite oscillations compared with the previous year (81.3%).

## Complaint Management

G4-S011

### Copel Distribuição

Using two indicators, Copel Distribuição assesses the quality of products and services according to consumer perception: the Equivalent Frequency of Complaints indicator (FER) quantifies valid complaints in relation to the number of consumers, and the Equivalent Complaint Duration indicator (DER) shows the average time it takes the utility to respond to complaints.

Complaint Management at Copel Distribuição	2014	2015	2016
Registered and processed grievances and complaints	11,077	17,592	20,668
Registered and resolved grievances and complaints	10,833	17,835	20,668
Equivalent Frequency of Complaints (FER)	7.64	7.21	6.77
Equivalent Complaint Duration (DER)	120.82	126.89	116.94

Copel also monitors the quality of service channels and the standard to receive and address complaints (1st Level). At the end of 2016, the Ombudsman's Office began to work to secure ISO 9001 certification, expected to be completed at the end of 2017.

### Compensation for consumers

In case of disturbances in the electrical system that resulted in damage to equipment, assets, products, animals and people, Copel ensures the right to compensation. Procedures and term for compensation claims are predefined. Consumers are reimbursed after power failure has been confirmed.

Another initiative to achieve quality services is the annual survey of Satisfaction of Complaining Customers, which measures ease of contact, clarity of the information provided, friendly service, observance of the term to respond, and the meeting of expectations in terms of the response to the complaint.

### Copel Telecomunicações

Copel Telecomunicações provides the Ombudsman's Office as a customer channel, responsible for managing and following up on suggestions, complaints, and reports received directly by the Company or through the Ombudsman channels of the regulatory agency, ANATEL. The statements recorded on the National Consumer Department (SENACON) platform of the Ministry of Justice are also handled, in addition to those that arrive through PROCON (Consumer Protection Department) and the State Ombudsman.

The Ombudsman's goal is to respond to complaints within 10 business days. To this end, deadlines are monitored daily. In 2016, the difference between the number of complaints recorded and complaints resolved was only 40 complaints in relation to the total number processed. As a result, most of the complaints that would have been escalated to external entities such as PROCON, SENACON, or even ANATEL, were resolved by the Company itself.

- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Intellectual Capital
- Social and Relationship Capital
- Customers and Consumers
- Suppliers Management
- Local Communities
- Indigenous Communities
- Education for Sustainability
- Social Investments through Fiscal Incentives
- Social Initiatives
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact



**Business Performance of the Telecom Business**

	2014	2015	2016
Registered and processed grievances and complaints	576	1,178	4,474
Registered and resolved grievances and complaints	560	1,171	4,434
Equivalent Frequency of Complaints (FER)	0	3.1	5.4
Equivalent Complaint Duration (DER)	11.1	4.4	8.3

The increase in the absolute volume of complaints in the Ombudsman’s Office of Copel Telecomunicações, from 2015 to 2016, may be explained in part by the significant increase in the customer base, requiring constant adjustments in the internal processes linked to service, service activation, and maintenance. Another contributing factor was greater availability for access both in the Customer Service Center and in the Ombudsman’s Office, areas that had their structures expanded and disseminated with greater emphasis among the various stakeholders.

**Use of Energy**

G4-EC8, G4-EU23, G4-DMA-EU7

**Affordable Energy**

The energy rate has a direct impact upon the economy of consumers, regardless their social status. This effect may be negative for the low-income population, which makes it necessary to adopt differentiated rates so that the financial impact becomes positive, directly or indirectly.

This understanding is the driving force behind the movement that 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 affordable for all.

This is the case of the **Social Rate for Electric Power** (TSEE), which offers discounts for consumption of electricity up to a limit of 220 kWh to families registered in the Federal Government’s Social Program Registry, as long as the provisions set forth in ANEEL Resolution 414/2010 are met. In 2016, a total of

295,000 consumer units with regular benefits were served, representing 8.4% of the total households served by Copel Distribuição.

The **Fraternal Light Program** (*Programa Luz Fraternal*), of the state of Paraná pays the bills for consumers registered in the TSEE, provided consumption does not exceed 120 kWh - in an initiative that represents a positive financial impact to low-income consumers, who are exempt from electricity expenses. In 2016, the state government invested in the program ca. BRL 40.5 million, benefiting an average of 156,000 families per month.

The **Nighttime Irrigation Rate** and **Nighttime Rural Rate** programs encourage the increase of agricultural productivity with a discount of 60% to 70% in the rate for electricity used between 9:30 PM and 6:00 AM. In 2016, a total of 3,026 farmers benefited from the Nighttime Irrigation Rate and 8,828 rural consumers benefited from the Nighttime Rural Rate Program.

**Efficient Use of Energy**

G4-DMA-EU7

Copel annually promotes actions toward conscious consumption of electricity, which include energy efficiency, safety, and health of the population. Efficiency is a permanent target of the campaigns, such as: empowering citizens (adults and children), and encouraging the use of more efficient equipment in all sectors.

Copel makes public calls for energy efficiency projects, open to all industrial consumers, residential consumers (including housing complexes), commerce and services, public authorities, rural services, and public services (including public lighting). In 2016, a total of BRL 16 million was made available, and 38 projects were received, which are being evaluated and selected.

The **Energy Efficiency Program** promotes efficiency in the final use of electricity and applies Company resources towards this purpose. The main mechanism of the PEE is the **Copel in the Community** project, which develops actions for low-income consumers, benefited by TSEE. Lectures are given on safe and efficient

- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Intellectual Capital
- Social and Relationship Capital
- Customers and Consumers
- Suppliers Management
- Local Communities
- Indigenous Communities
- Education for Sustainability
- Social Investments through Fiscal Incentives
- Social Initiatives
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact

consumption, energy diagnostics, and replacing equipment with other more economical equipment. In 2016, the Copel in the Community project held 500 lectures, 39,000 energy diagnostics, and replaced 118,000 incandescent light bulbs with compact fluorescent and LED lights. For 2017, the replacement of 5,000 refrigerators with new ones with the Procel energy saving seal is planned. These actions seek to engage the community in the concession area in conserving natural resources, especially energy.

## Supplier Management

G4-12

G4-EC9 Operation	Expenditure for Suppliers	Local Suppliers <sup>3</sup>	%
Distribution	1,179,686.66	740,549.28	62.78%
Generation and Transmission	596,712.59	554,111.47	92.86%
Holding	69,770.29	56,270.64	80.7%
Telecommunications	349,278.36	149,565.97	42.82%
<b>Total</b>	<b>2,195,447.89</b>	<b>1,500,497.36</b>	<b>68.35%</b>

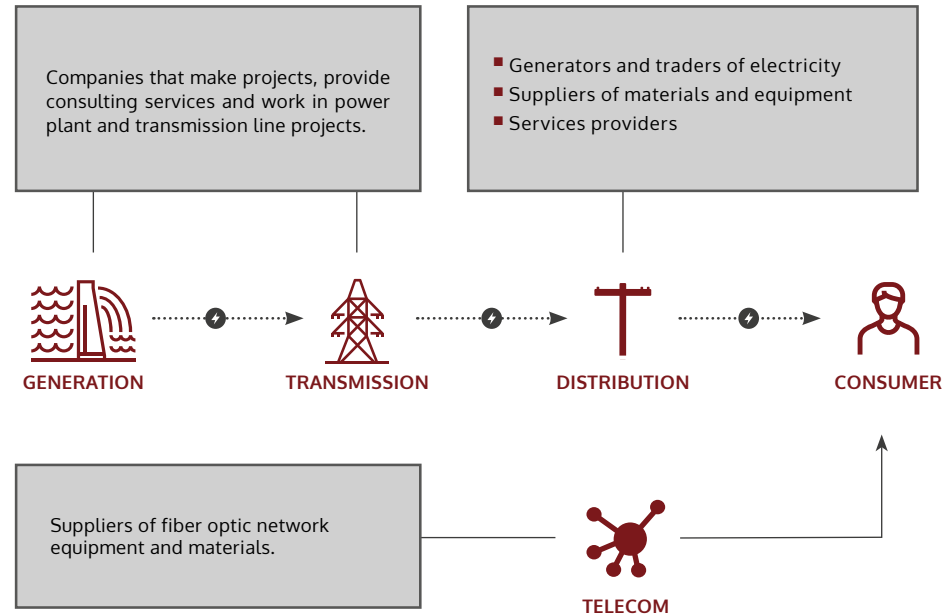
<sup>3</sup> Copel Holding, Copel Distribuição and Copel Telecomunicações consider the suppliers of the State of Paraná to be local. Copel Geração e Transmissão considers the suppliers of the states where it operates as local, in this case, São Paulo, Paraná, and Mato Grosso.

For Copel, suppliers are an important link of the value chain, representing a strategic audience that is carefully considered in a sustainable management model, in line with corporate policies and focusing on improving the relationship between the parties. The permanent challenge is to mobilize and engage this chain in the ideals and values shared among them.

As a result of the work carried out in 2016, the Management Committee for Sustainability of Copel's Supply Chain is updating the Supplier Manual that guides suppliers regarding the Company's policies and guidelines.

## Our Suppliers

G4-12



## Qualification, Selection, Contracting, and Monitoring

G4-EN32, G4-LA14, G4-HR1, G4-HR10, G4-SO9, G4-SO10

Copel requires compliance with labor and tax laws in bidding documents, contractual clauses, supplier registration manuals, and standards and technical manuals that are permanently available **online**.

Issues related to social and environmental aspects, and human and labor rights, are addressed by Copel during the onboarding process, conducted with each new supplier. They are also included in specific clauses in contracts for the acquisition of construction work and services. Noncompliance generates suspension of the agreement and inability to participate in the Company's new bidding processes for a period of two years.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Customers and Consumers

Suppliers Management

Local Communities

Indigenous Communities

Education for Sustainability

Social Investments through Fiscal Incentives

Social Initiatives

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact





## Critical Suppliers

Copel considers critical suppliers those whose supply poses a significant risk to the company's business. In order to minimize potential risks from supplying products and services, and also better protect the business, the Company classifies its supply chain according to the supplier's level of criticality.

Copel considers suppliers to be critical when their supplies represent a significant risk for the business in terms of the following aspects: legal, financial, environmental, occupational health and safety, safety of the population, image of the company, perception by client and society, and the processes involved.

In the methodology, critical supplies are those considered the "main supplies," and those that stand out from the others due to their high criticality when evaluated for their social, economic, and environmental importance, as well as their comprehensiveness in the business.

In 2016, the evaluation and identification cycle of critical suppliers occurred for the subsidiaries Copel Geração e Transmissão and Copel Telecomunicações, and the Technical Report was prepared with the methodology and identification of their Critical Suppliers. For the Holding Company, identification of critical suppliers is expected to be completed in 2017.

## Local Communities

G4-EC8

### Management of impacts

The social and economic impacts of Copel's activities have different orders of magnitudes and vary according to the characteristics of each project and location. For this reason, the Company follows the Sustainability Policy and the Code of Conduct, whose principles of corporate governance include commitments made under the UN Global Compact.

Copel is also aware of the positive effects of the infrastructure of its projects in surrounding communities. This infrastructure favors the appearance or expansion of industrial and regional business centers, and consequently expands the supply of jobs and taxes, resulting in benefits and services for the population.

Guided by the need to dialogue and serve several audiences, Copel works toward an efficient relationship with the communities in which this dynamic occurs. Thus, the Company seeks to improve the dialogue channels in the cities impacted by its operations.

The first social and environmental **impact assessment** is conducted by Copel's Business Development Office (DDN), in the analysis phase of business opportunities. If the business is of interest to the Company, the DDN carries out the approval with the Executive Board and the Board of Directors (CAD), responsible for approving the strategic decisions related to new investments.

Detailed assessments of impact upon communities are conducted in studies prepared during the environmental licensing of each project. It is at this stage that the impacts are measured according to the characteristics of the location and project. From there, through the implementation of environmental programs, negative impacts are mitigated and the positive ones are strengthened. All this takes place in conjunction with the dialogue with neighboring communities, the government, and local leaderships.

Whenever cases of **displacement** are evaluated through a Social and Economic Registry and a situation of social vulnerability is identified, Copel provides a family resettlement process and social compensation for damages for the installation of projects. **Social Compensation** consists in enabling the affected family to be relocated to an area that is similar or better than the previous area, and to recover the economic status they had prior to the project. Additionally, properties undergoing condemnation are compensated. In 2016, two families were relocated, totaling four people. **G4-EU20, G4-EU22**

- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Intellectual Capital
- Social and Relationship Capital
- Customers and Consumers
- Suppliers Management
- Local Communities
- Indigenous Communities
- Education for Sustainability
- Social Investments through Fiscal Incentives
- Social Initiatives
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact



## Colíder HPP

The Colíder Hydroelectric Power Plant, which is in the final phase of implementation in Northern Mato Grosso, has in place 32 social and environmental programs. The actions aim to avoid risks, and mitigate and compensate for the changes that may occur in the social and natural environments of the region affected by the work.

Copel provides a website for the community to have access to all reports produced by the mitigation programs. The website offers information regarding the project, and provides a communication channel open to the community. [G4-SO2](#)

### Program for Fostering and Monitoring Sustainable Local Production Arrangements

The Program for Fostering and **Monitoring of Sustainable** Local Production Arrangements developed by Copel is one of the measures to compensate for the installation of the Colíder Hydroelectric Power Plant and is described in the company's Basic Environmental Project.

Investments in the municipalities totaled more than BRL 5 million. You can view this contribution on Copel's website. Transfer of resources is part of the support program for the activities of family farmers residing in the municipalities in the plant's area of influence. The initiative enables, for example, about 100 properties in the cities of Colíder, Itaúba, Nova Canaã do Norte, and Cláudia to receive monthly technical visits from agronomists. The professionals in the field teach residents about sustainable agriculture - primarily organic, aiming to ensure qualified food production and better living conditions for families.

Rural technical assistance is strengthened by other Copel initiatives, such as training workshops on management processes, processing and marketing family farming products, in order to improve the conditions for including farmers in the local production chain.

## Araraquara – Taubaté Transmission Lines

**Installation of transmission** lines has impacts on the communities where Copel operates. Properties and residents are affected by the loss of land and production, resulting from the creation of right of ways, as well as the modifications in the natural landscape of the location.

To this end, Copel carries out a series of initiatives to mitigate these impacts. This occurs through compensatory remuneration for the owners for their losses, as well as the adoption of a series of proactive programs and actions associated with the compliance and conditions established in environmental licensing.

Among the initiatives, the programs that stand out are Social Communication; Social Interaction or Relationship with the Community; Environmental Education for Communities; The Local Production Arrangement, Tourism Strengthening; and The Free Line, to meet demands in occupations for housing or economic purposes under the transmission lines.

Copel is currently installing the 500 kV Araraquara - Taubaté transmission line, 356 km long, in 28 municipalities of the State of São Paulo. The Company implemented the Social Compensation Program with the purpose of compensating for the loss of economic activities suffered by the communities, due to the right of way for the transmission line.

Copel provides professionals in social and land management issues to enable proper and dignified relocation, in agreement with those affected.

To this end, regular visits are carried out to the communities affected and a transparent communication channel is established.

Additional programs intended for local communities are ongoing.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Customers and Consumers

Suppliers Management

Local Communities

Indigenous Communities

Education for Sustainability

Social Investments through Fiscal Incentives

Social Initiatives

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



### Dialogue with Communities

Copel values a good relationship and permanent dialogue with the communities around its administrative buildings and projects. To this end, the Company is structuring a specific program for engaging with the surrounding community. The initiative began with mapping communities within a radius of up to 2 km from Copel's buildings in the south-central region of Paraná. The objective is to improve the relationship with these communities and minimize the possible negative impacts caused by the activities carried out in the area. The survey has already enabled the development of engagement actions, through a visit to four institutions in the communities. The meetings were held to identify possible actions and partnerships to be developed in 2017, through groups of volunteers.

The program called **Programa de Educação Patrimonial** has been in place since 2014, through a contracted company (Fundação Aroeira). The target audience for the activities includes the local community directly affected by the installation of the projects, teachers at schools in the region, and construction workers at operational and management level. The program addresses issues such as education on citizenship, valuing cultural identity, preserving heritage, educating multiplier agents, and disseminating scientific research. The methodology used seeks to instill in the community with the interest in knowing and understanding its identity, history, and culture.

### Investments in local development

In 2016, Copel invested in infrastructure and services to generate benefits in the communities where it operates. These investments totaled BRL 662.75 million. **G4-EC7**

Copel's investments in infrastructure and services provide better living conditions for the population, economic development in the regions and, consequently, employment and income generation for families, the State, and Municipalities. Taking into account the legal requirements for licensing the projects, the Company always seeks the most effective way to respond to the wishes of the local communities in the municipalities where it operates.

As part of the **Distribution Development Plan (PDD)**, in 2016, Copel Distribuição invested BRL662 million in ensuring that the demands of electricity consumers are met, and in contributing to the improvement of the quality and reliability of the electrical system. Additional PDD resources were invested in various social interest programs, including rural electrification, housing, projects for isolated communities, and settlements.

In addition, **Copel Geração e Transmissão** contributed about BRL 750,000 in the state of Mato Grosso, where the Colíder HPP is located, as part of the Action Plan for Malaria Control (PACM). Ambulances, vans, computer equipment, instruments,

### Distribution Networks

**G4-SO1, G4-EU22**

Distribution projects do not cause human displacement. Particularly in High Voltage Distribution Lines projects (LDAT), there is compensation for implementing the right of ways for the Line. This measure does take ownership from land owners, but establishes some restrictions for its use and, for that reason, results in compensation. In 2016, a total of 580 people were compensated. **G4-EU22**

As part of the implementation processes of new projects, Copel conducts an awareness program with the contractors (third parties) who will carry out the works and also the **Community Relations Program** with the surrounding community, where explanations are given about the work to be carried out, caution concerning the works, and the benefits they will bring to the community. In 2016, the Company carried out engagement programs with communities in all 25 operations carried out throughout the year <sup>4</sup>.

<sup>4</sup>To establish the number of operations that implemented community engagement programs, the projects served by the Community Relations Program and the Equity Education Program were included.

- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Intellectual Capital
- Social and Relationship Capital
- Customers and Consumers
- Suppliers Management
- Local Communities
- Indigenous Communities
- Education for Sustainability
- Social Investments through Fiscal Incentives
- Social Initiatives
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact





and laboratory materials were donated, as well as inputs and entomology equipment. In addition, the local infrastructure has gained the headquarters of the Colíder Tutelary Council, a landfill in Nova Canaã, and the Colíder Municipal Park was revitalized.

## Indigenous Communities

In order to arrive at the Indigenous communities located in the environmental conservation units or other areas where the implementation of a power distribution network is not viable, Copel developed projects that involve new power connections, efficient use of electricity, installation of solar panels in villages located on the coast, and new power connections for communities in the state.

In 2016, a total of 819 consumer units of Indigenous people were included in the Social Electricity Rate - Low Income. For the beginning of 2017, a major operation is scheduled for the villages of Aldeia Apucarantina, for inspections of connections in consumer units, commercial registration and guidelines regarding the safe and conscious use of energy and rate benefits.

## Education for Sustainability

In 2016, the Copel Sustainability Seminar was reformulated and extended to other cities in the state of Paraná, to the cities of Londrina, Ponta Grossa, Cascavel and Reserva do Iguaçu, under the name "Sustainability Dialogues." The Seminar aims to share with employees and suppliers information about corporate environmental and social programs, providing greater integration with the subject areas, enabling progress and innovation in sustainable actions. The aspects covered were: Human Rights, Global Compact, Sustainable Development Goals, Mobbing, Sexual Harassment, Ethics, Corporate Citizenship and Values, Climate Change, Eco-efficiency, Solid Waste, Gender and Race Equality, Affordability, and The Susie Pontarolli Award. Suppliers from each region also participated and had the opportunity to present success stories.

Since 2002, Copel has been promoting the **Copel Sustainability Award - Susie Pontarolli Trophy**. The award focuses on social responsibility projects conducted

by social institutions and suppliers working in communities close to their projects. The trophy is presented annually on International Volunteer Day, celebrated on December 5.

### EletriCidadania Volunteer Program

On Volunteer Day, Copel pays homage to employees who volunteered throughout the year. The awards are given under the EletriCidadania Program and the winners of the 2016 edition received trophies with prominent inscriptions about the four prerogatives of the Sustainable Development Goals (SDGs), established by the UN, that were reached through their volunteer activities. On that occasion, Copel also launched a new portal for the EletriCidadania Program.

In 2016, the Amigas da Mama Association was the winner of the Social Institutions award, with the project *Ação Feliz e Responsabilidade Social* (Happy Action and Social Responsibility), which promotes assistance and encourages women facing breast cancer to share their experiences. In second place was the Associação Franciscana de Educação ao Cidadão Especial (Franciscan Association of Education for the Citizens with Special Needs - AFECE), and third place went to the Ação Social para Igualdade das Diferenças (Social Action for Equality of Differences - ASID Brazil). The institutions received cash prizes in the amount of BRL 10,000, BRL 6,000, and BRL 4,000, respectively, as an incentive to continue the projects.

The Susie Pontarolli Trophy also recognizes social and volunteer projects developed by Copel suppliers. In the Suppliers category, the winners were Radiante Engenharia, the Associação de Educação Familiar e Social do Paraná (Family and Social Education Association of Paraná - AEFSPR), and Landis+Gyr. Suppliers received certificates from Copel for their work (details about the winning projects are on the [Copel website](#)).

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Customers and Consumers

Suppliers Management

Local Communities

Indigenous Communities

Education for Sustainability

Social Investments through Fiscal Incentives

Social Initiatives

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



Through the project called **Iluminando Gerações** (Lighting Generations), Copel provides informative and preventive lectures to fourth graders at the elementary school level, on sustainability geared toward conscientious and safe use of electricity, use of natural resources (energy and water), and proper disposal of waste. In order to consolidate this knowledge, after the lectures, Copel distributes to the audience present- students, teachers and school employees- a kit containing a primer called **“A energia elétrica e você”** (“Electricity and you”), which addresses care in using electricity and the use of natural resources. **G4- EU24**

**National Electricity Safety Week** brings together Copel volunteers for visits to homes, construction sites, cooperatives, and schools throughout Paraná. They teach the population about the safe use of electricity. Under the coordination of the Brazilian Association of Electricity Distributors (Abradee), the campaign promotes lectures, distributes information and guidance material to prevent accidents involving electrical shock. This initiative operates on six main fronts: civil construction, rural areas, pruning trees, electricity theft, antenna installation, and caution with kites.

In addition, on its website, Copel made a Manual available on “Electricity without Risks” which provides important guidelines on the correct use of electricity and basic recommendations to prevent accidents on the street, at home, in the field, and in construction.

The initiatives for **education on sustainability** can be found in the sustainability section of the Copel website, which also offers educational and informative material, such as primers, educational games, and several publications that address issues associated with efficient and safe use of electricity, issues on citizenship, human rights and protection of the environment.

Other questions can be answered through the **Fale Conosco** (Talk to Us) - Sustainability, a direct channel established by Copel with the population of the state of Paraná.

## Social Investments through Fiscal Incentives

G4-EC1

Copel supports and participates in several initiatives with government agencies and other institutions, aiming to promote the sustainable development of the regions where it operates. Selection of the initiatives followed the company's strategic references, commitments assumed with the Global Compact, and the state of Paraná's government policy.

Area of Investment	Amount
Culture	<ul style="list-style-type: none"> <li>■ Rouanet Law - BRL 7.6 million</li> <li>■ PROFICE (ICMS) - BRL 8.58 million</li> <li>■ Mecenato Municipal Curitiba (ISS) - BRL 252,000</li> </ul>
Education and social initiatives	<ul style="list-style-type: none"> <li>■ FIA - BRL 544,000</li> <li>■ Elderly Act - BRL 544,000</li> </ul>
Sports	<ul style="list-style-type: none"> <li>■ Sports Incentive Act - BRL 544,000</li> </ul>
Health	<ul style="list-style-type: none"> <li>■ PRONON - BRL 544,000</li> <li>■ PRONAS/PCD – no investment in 2016</li> </ul>

Copel's investment in 2016, arising out of fiscal waiver, totals BRL 13.2 million. The initiatives include the areas of education, culture, sports, and health. This year Copel started promoting cultural projects through PROFICE - State Program for Promotion and Incentives for the Culture of Paraná, a form of tax incentive from ICMS.

## Social Initiatives

**Solidarity Invoice Project** - each agreement to receive the Copel invoice via email will be worth a BRL 1.00 (one real) donation to the institution to aid people with special needs Federação das Associações de Pais e Amigos dos Excepcionais - FEAPAES/PR, at no cost to consumers. Since its launch, approximately BRL 80,000 have been donated to all APAEs linked to the federation.

- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Intellectual Capital
- Social and Relationship Capital
- Customers and Consumers
- Suppliers Management
- Local Communities
- Indigenous Communities
- Education for Sustainability
- Social Investments through Fiscal Incentives
- Social Initiatives
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact



**Cobrança de Valores de Terceiros - CVT, (Collection from Third Parties)** collects contributions via electricity bills, for participating philanthropic entities. The amounts to be included must have a written authorization from customers. Donation limits are a minimum of BRL 1 and a maximum of BRL 150. In 2016, a total of 208,000 donors collected a monthly average of BRL 1.9 million, distributed among 120 philanthropic institutions.

The **More than Energy Project**, conceived by Copel in order to promote projects involving deaf and deaf-blind people with the following aspects: education and social inclusion; safety of the environments to cater to them; accessibility; health and quality of life; and training and qualification of professionals serving the students. Funding for project development total BRL 750,000 and comes from the line of social investments for companies (ISE) from the National Bank for Economic and Social Development (BNDES). In 2016, through a bidding process, a specialized company was hired to carry out the architectural and complementary projects for the first two institutions selected by the project. The bidding process for hiring companies to carry out the work planned in the projects is scheduled for the beginning of 2017.

The **Cultivate Energy Program**, developed in partnership with municipal governments and communities, encourages the establishment and cultivation of community gardens in vacant spaces under its distribution and transmission lines, in order to promote social inclusion, food safety, and income generation in socially vulnerable communities. Through this activity, it is also possible to provide the population with greater safety, since the existence of the gardens inhibit irregular and high-risk occupations under the power lines.

With the positive results of the first garden implemented in the municipality of Maringá/PR in 2013, other vegetable gardens were enabled and are currently benefiting nearly 140 families from three different communities in that municipality. In 2016, Copel formalized the rules and procedures for expanding the program's capacity to serve. For 2017, the implementation of new gardens is planned for other municipalities in the same state.

The **Iguaçu Regional Museum**, located on the banks of the largest river in the state of Paraná, in the South-Central region of the state, has been guarding and preserving

elements that has helped tell the history of the region for 16 years. Maintained by Copel, the Museum is located next to the Governador Ney Braga Hydroelectric Power Plant.

Its mission is:

- To showcase the cultural heritage of the region under its care, valuing the cultural and environmental memory of Paraná;
- To raise awareness toward preservation of biodiversity and all forms of life;
- To demonstrate the interaction of men and women with their environment, reflected in the social-cultural aspects of the collection;
- To demonstrate Copel's commitment to preservation of environmental, historical, and cultural heritage through social and environmental compensation programs derived from implementing generation, transmission, and distribution projects.

Since its inauguration in December 2000, it was responsible for the educational and monitoring activities of over 300,000 people, who became aware of Copel's environmental and social actions. In 2016, the Museum had 7,309 visitors, among guided tours, spontaneous visitors, and at the Traveling Museum.

In 2016, the Museum was awarded in the 14th edition of the Brazil Benchmarking Award, a project that rewards companies and/or projects considered as Best Social and Environmental Practice. Participating in the award for the first time, in its 14th edition, the Regional Museum of Iguaçu registered a project that produced a book of compositions. This book alluded to the Museum's 15 years, celebrated in 2015, and ranked 12th among over 85 projects registered for this edition of the Award, enabling Copel Geração to be included in the Ranking of Best Social and Environmental Practices of 2016.

For this book, of the 127 texts registered, 15 essays were selected from 5th grade students from the André Dorini and São Francisco de Assis municipal schools in Manguerinha-PR, a city that houses the machine room of the Gov. Ney A. Braga Hydroelectric Power Plant.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Customers and Consumers

Suppliers Management

Local Communities

Indigenous Communities

Education for Sustainability

Social Investments through Fiscal Incentives

Social Initiatives

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact





## 09 . NATURAL CAPITAL

Climate Change // Eco-efficiency // Ecosystems // Reservoirs and Water Quality



# 09. Natural Capital

## Climate Change

G4-EC2, G4-15

Sustainable development is an essential part of Copel's strategic growth objectives. The Company believes that financial results should be obtained in a manner aligned with social and environmental responsibility guidelines as part of a commitment to the population of Paraná, the other states in which it operates, and future generations. Copel's operations are cross-sectional and involve all business fronts of the Holding Company in the areas of energy and telecommunications.

Materialization of these commitments is in Copel's Agenda for Climate Change, a guide developed by the Company in 2011 aiming to maintain coherence of the actions of the various business fronts with the aspect. Through this platform, Copel defines positioning, plans actions, and makes corporate decisions that take into account the impacts on the environment caused by climate change.

Incorporated into the Company's risk matrix, actions related to the Climate Change Agenda involve mitigating environmental impacts inherent to its business activity, investments in technological innovations that promote reduction in greenhouse gas (GHG) emissions, and environmental preservation programs disseminated to employees, suppliers, communities, and society in general.

In 2016, the progress was reflected in the implementation of the **Climate Change Policy**, aiming to promote actions to reduce greenhouse gas emissions and prepare to cope with the effects of climate change on business. In order to implement the Policy, Copel reinforced and expanded its commitments to climate change.

In 2016, within the scope of the Corporate Climate Change Management Program, Copel created a **Management Committee** represented by employees from each department of the Holding Company and its subsidiaries. The committee is composed of three technical subcommittees: Adaptation, Carbon Valuation, and Management and Mitigation of Emissions.

### Commitments Assumed in 2016

- Manage annual greenhouse gas emissions (GHG);
- Conduct studies and projects related to climate change;
- Reduce GHG emissions from Copel's activities;
- Raise awareness towards GHG emissions in the value chain;
- Assess the risks and opportunities of new projects, from acquisitions to mergers of assets based on carbon;
- Assess the risks and opportunities of climate change for the Company's business.

The committee monitors those commitments approved by senior management, validates strategic documents related to climate change, assesses risks and opportunities, fosters initiatives that contribute to mitigating greenhouse gases, and drives actions to adjust its businesses to the climate change scenario. In addition, it is responsible for defining strategies for disseminating the Climate Change Policy and participating in discussions with external entities.

The Adaptation Subcommittee was primarily created to identify Company processes that may be vulnerable to the effects of climate change, based on history or relevant facts. It proposes adaptation plans that are applied to the processes identified as a potential risk, and develops methodologies to add the adaptation criteria to corporate risk matrices.

### Adaptation to Climate Change

The **Adaptation Subcommittee** was primarily created to identify Company processes that may be vulnerable to the effects of climate change, based on history or relevant facts. It proposes adaptation plans that are applied to the processes identified as a potential risk, and develops methodologies to add the adaptation criteria to corporate risk matrices.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Climate Change

Eco-efficiency

Ecosystems

Reservoirs and Water Quality

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



The Adaptation Subcommittee suggested projects focused on generation and transmission processes, taking into account the risk of water shortage and the need to measure variations in the flow of tributaries at the hydroelectric plants under the Company's concession.

### Copel develops a pilot project with FGV

In 2016, Copel initiated a pilot project in partnership with the Center for Sustainability Studies of the Getúlio Vargas Foundation (FGV). The Company's vulnerability to climate will be studied in order to suggest adaptation measures. The project aims to discover the impacts of climate change in the current scenario and to prepare a projection for 2040 in the north and northwest regions of Paraná. The study was divided into three phases: diagnostics of vulnerability to climate change, development of an adaptation plan, and implementation and assessment of the project.

So far, it has been possible to point out three critical points in the regions studied: increases in temperature, wind storms, and volume of rainfall. The direct consequences of these phenomena are the increased dilation of power cables, toppling of transmission line towers, risk of accidents to the population, fires, and temporary power outages.

The second phase of the project will take place in 2017, when an adaptation plan will be defined to address the adverse climatic effects in the coming years, pointing out the alternatives that may be applied in order to minimize the risks.

### Management of Greenhouse Gas (GHG) Emissions

Copel sets goals for reducing greenhouse gas emissions as one of its commitments under the Climate Change Agenda. Since 2009, the Company has invested in producing annual inventories, based on semiannual consolidated monitoring, to quantify GHG emissions following the methodology of the [Brazilian GHG Protocol Program](#).

Scope 1 of this work focuses on reducing consumption of fuel used in the Company's operations as a whole. One of the solutions to complying with this guideline is through the use of distance communication technologies, whenever possible, to avoid the need for employees to travel from the executive and operational areas to meetings and training sessions.

In 2016, emissions by Copel Holding and its wholly-owned subsidiaries were considered. The results can be seen in the table below.

G4-EN15, G4-EN16, G4-EN17, G4-EN19

By type of gas (tCO <sub>2</sub> e)	Scope 1	Scope 2	Scope 3
CO <sub>2</sub>	187,880.91	249,026.27	3,055.00
CH <sub>4</sub>	89,762.60	0	3.82
N <sub>2</sub> O	1,102.71	0	44.25
HFCs	1,698.31	-	0
SF <sub>6</sub>	2,300.84	-	0
<b>TOTAL</b>	<b>282,745.37</b>	<b>249,026.27</b>	<b>3,103.07</b>
Biogenic CO <sub>2</sub> (t)	1,679.44	-	164.37

Note: Emissions referring to changes in land use are not yet incorporated in scope 1 of the Company, since this is a new source in the inventory, which is still being prepared.

Scope 1 considered its own sources of emissions from stationary and mobile combustion, fugitive emissions, and industrial effluents. Upon completion of the inventory, it will be possible to assess the increase in emissions due to the inclusion of the new source. The 2016 inventory showed that there was an 11% reduction in emissions from stationary combustion, which is important, since this source represents over 85% of the company's emissions.



About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Climate Change

Eco-efficiency

Ecosystems

Reservoirs and Water Quality

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact





Scope 2 considered emissions from consumption and loss of energy. Compared with 2016, there was a 44% reduction in emissions due to the reduction of the grid emission factor, and reduced energy consumption, and losses in energy transmission and distribution.

Scope 3 emissions were considered to be air travel, transport and distribution (upstream), and waste from the company, but this scope has not yet been finalized, so it is not possible to make comparisons at this point.

The inventory was assured by an external entity and will subsequently be published in the public records of the GHG Protocol, and in the climate change forum in the state of Paraná.

#### Paraná Climate Seal: Gold for the Four Copel Subsidiaries

Copel's commitment to reducing the impact of its operations was recognized, for the second consecutive year, through the Paraná Climate Seal. Copel was recognized in the Gold category, reserved for companies that submit their inventories for external assurance. In 2016, seeking further transparency and showing internal alignment regarding this aspect, the four subsidiaries of the Company participated individually. Of the 15 seals awarded in this edition, only seven were in the Gold category, and four of them were awarded to the Copel companies. Registration in the Paraná Climate Seal is voluntary and aims to encourage state companies to publish their greenhouse gas emissions inventories, the main vector for climate change worldwide.

### Carbon Valuation

In 2016, Copel included carbon pricing in the responsibilities of the Climate Change Committee. Since this aspect is still new, the Company understands that it will take at least two years of study to be able to implement any type of action. The idea is that in the coming years, a methodology will be developed

capable of measuring the costs related to increase in emissions or the investment to be made to reduce them.

Copel expects that this methodology will be able to guide the new business areas in assessing risks and financial opportunities regarding aspects related to climate change.

As measures for study, the Company has invested in the participation of its employees in discussion forums such as the CEBDS (Brazilian Business Council for Sustainable Development) and the EPC (Companies for the Climate of GVces) and also by simulating a carbon market coordinated by the EPC using the BVRio platform.

This simulation enabled the Company to understand the structure of a possible carbon market to be installed in Brazil and how to operate it, since in 2016 the Company participated in the auctions promoted by the EPC.

## Eco-efficiency

### Eco-efficiency Program

Copel understands that eco-efficiency is an important management philosophy for achieving economic benefits in parallel with environmental improvements. Thus, the Eco-efficiency Program, in force since 2014, aims to integrate the various initiatives developed in the company related to reducing and optimizing the use of natural resources, by strengthening and enhancing them. In addition, the program intends to support projects with a sustainable focus on cost reduction and propose new actions that may contribute to this purpose.

The current economic scenario, coupled with the legal and regulatory changes that have affected the electricity sector in recent years, reinforces the importance of implementing actions toward optimizing costs. To this end, the awareness and involvement of the employees are essential to guaranteeing the company's commitment and achievement of its goals. Engaged employees are aware of impacts on costs related to their roles and areas of operation, thereby increasing company revenues.



About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Climate Change

Eco-efficiency

Ecosystems

Reservoirs and Water Quality

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



The actions of the Eco-efficiency Program are concentrated in five theme lines: energy, water, paper, mobility and fuel, and education and communication.

In 2016, the Eco-efficiency Program was one of the aspects of the Sustainability Dialogues, promoted by the Sustainability Education Program in the following cities in the state of Paraná: Londrina, Cascavel, Reserva do Iguaçu, and Ponta Grossa. The main actions developed by Eco-efficiency were introduced, as well as some future perspectives.

The meetings were also used to receive suggestions and reports of other experiences regarding this aspect. In total, 232 employees and 34 suppliers participated in the events.

### Summary of the Eco-efficiency Program in 2016

In 2016, initiatives were carried out to reduce water and energy consumption in Copel's largest administration buildings. There was a 1% reduction in water consumption, compared with 2015. The goal for 2017 is to reduce consumption by 2%, compared with 2016. Also worth noting are the actions toward the use of rainwater - in 2016, a total of 147.86 m<sup>3</sup> of rainwater were collected and used for administrative purposes. In 2017, we intend to improve management of this consumption data and encourage the implementation of new tanks.

Regarding **energy** consumption, the reduction goal for 2016 was 2% compared with the previous year (or 4% compared with base year 2014). Performance was 8% above the goal. For 2017, Copel plans to reduce energy consumption by 2% compared with 2016. For **paper** consumption, the goal was to achieve 40% rate for duplex printing in 2017, and 50% in 2018.

In addition, several internal awareness and information campaigns were carried out. Specific actions for saving paper, improving employee mobility, and reducing consumption of inputs and natural resources are planned for the coming years. It is important to note that most of the actions in the Eco-efficiency Program were carried out without large specific investments, and a routine building maintenance budget was used.

Copel's experience with the Eco-efficiency Program was also presented at the seventh edition of SMARS (Brazilian Seminar on the Environment and Social Responsibility of the Electricity Sector), held in November 2016, at the Electricity Research Center (CEPEL) in Rio de Janeiro (RJ).

The purpose of this event was to promote technical discussions on the main challenges involving planning, implementation, and operation of projects in the Brazilian electricity sector, in view of commitments to sustainability, environmental legislation requirements, and corporate social responsibility.

The selection of the work submitted by the Eco-efficiency Program coordination reinforces the importance of this aspect in company management, and is a good recognition of the actions carried out at Copel so far.

### Water Consumption

The administrative consumption of water is monitored through the Eco-efficiency Program. Consumption data is obtained semi-annually from the companies responsible for the municipal supply. In 2016, the goal established by the Eco-efficiency Program was to reduce water consumption by 5% compared with 2015. The goal was not achieved, there was a reduction of only 1%. It is important to note that reduction in consumption from 2014 to 2015 reached the goal of 5%. In the accumulated period from 2014 to 2016, consumption was reduced by 6%. For 2017, the goal is to reduce by 2% compared with 2016. The main actions carried out toward reaching the established goal include replacing simple faucets with automatic faucets, replacing sanitary valves with dual-flush toilets, and internal awareness campaigns on the rational use of this resource. In addition, the possibility of installing tanks for the use of rainwater in some of the Company's units is being studied.

In 2016, Copel's total water consumption in the administration units located in the state of Paraná was 135,678 m<sup>3</sup>. [G4-EN8](#), [G4-EN9](#)



- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Intellectual Capital
- Social and Relationship Capital
- Natural Capital
- Climate Change
- Eco-efficiency
- Ecosystems
- Reservoirs and Water Quality
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact



## Natural Capital

In 2016, a total of 99,481,215.61 m<sup>3</sup> of water from ground sources were withdrawn, which were used for cooling at plants. The volume of water returned to the body of water is practically the same as the volume withdrawn, since only an immaterial volume was lost through evaporation, and was not considered as water consumed by the Company.

Source of water	Administrative consumption (m <sup>3</sup> )
Underground Sources	22,750
Municipal Supply	112,928

## Electricity and Fuel Consumption

G4-EN3

Copel's total energy consumption in 2016 was 2,101,180.96 GJ, considering the scopes for Generation, Transmission, Distribution, Telecom, and Holding. The following table shows the energy consumption in 2016 and the two years before.

Electric power consumption (in MWh)	2014	2015	2016	Evolution 2014 - 2015	Evolution 2015 - 2016	Evolution 2014 - 2016
Copel Telecomunicações S.A.*	489.9	535.2	656.4	9%	23%	34%
Copel Distribuição S.A.	24,171.8	23,498.2	21,160	-3%	-10%	-12%
Copel Geração e transmissão S.A	8,813.7	8,314	7,775.8	-6%	-6%	-12%
Copel Renováveis S.A.*		10.5	64.6		516%	
Holding		87.1	186.4		114%	
<b>Grand Total</b>	<b>33,475</b>	<b>32,445</b>	<b>29,843</b>	<b>-3%</b>	<b>-8%</b>	<b>-11%</b>

\* The increase in energy consumption was due to the evolution of the operations of this subsidiary in the period analyzed.



Below are the amounts corresponding to fuel consumption by the Company.

Type of Fuel	Consumption (GJ)
Coal (Figueira Thermoelectric Plant)*	1,759,580.98
Diesel**	175,312.35
LPG***	9.46
Ethanol	2,642.52
Gasoline	52,494.78
Aviation Kerosene	3,706.07
<b>TOTAL</b>	<b>1,993,746.16</b>

\* Coal is used to produce electricity in a thermoelectric plant.

\*\* Total diesel used in transportation and emergency generators.

\*\*\* Total consumption in the company's forklifts and kitchens.

Ethanol, gasoline, CNG and aviation kerosene are the fuels used in the Company's own means of transportation.

### Bike Day

Bike to Work Day is inspired by the event of the same name held annually in several countries to promote cycling as a transportation option. In 2016, this date was celebrated on May 13, and at Copel, employees who signed up in advance were greeted with a special breakfast. The action involved the company's own employees and contractors at the headquarters, Atuba, Santa Quitéria, and hub at KM3, in Curitiba, as well as employees of several municipalities in the state of Paraná.

In total, 148 employees participated. They answered a questionnaire in which the Company recorded the following data:

- 1,726 km in commuting back and forth (home - work);
- About 225 kg of carbon dioxide (CO<sub>2</sub>) were prevented from being released into the atmosphere;
- The group would stop issuing 60 tons of CO<sub>2</sub> over the course of a year with the use of a bicycle every day for work.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Climate Change

► Eco-efficiency

Ecosystems

Reservoirs and Water Quality

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact





## Waste Management

G4-EN23

### Industrial Waste

The waste generated in the company's operations is segregated, packaged and sent to one of the warehouses, where it is stored until disposal. The entire process adopts criteria according to current norms and laws.

In its operations, the Company mainly generated ashes from the Figueira Thermoelectric Plant, copper and aluminum cable scrap, poles, crossarms, ceramic isolators, transformers, lead-acid batteries and insulating mineral oil. All disposals are made according to legislation, prioritizing reuse and recycling whenever possible, as established in the priority order of the National Policy on Solid Waste, requiring from contracted companies all necessary technical qualification.

The disposal of waste generated revenues of approximately BRL 5 million.

In 2016, Copel reached the goals established for reuse or recycling of 90% of its industrial waste from distribution and 70% of the industrial waste from Copel Geração e Transmissão. However, the goal of recycling 50% of the ashes generated was not reached due to the delay in the modernization work of the Figueira Thermoelectric Plant, and consequently, migrating the operation of the Figueira plant to Copel Geração e Transmissão, which studies new forms of final disposal for this waste.

For 2017, Copel has the following goals:

- A reduction of 95% in industrial waste from Distribution sent for reuse or recycling;
- 60% of the industrial waste from Copel Geração e Transmissão sent for reuse or recycling (ashes not included).



### Disposal of industrial waste

Destination	Description	Unit	Amount
Disposal	Concrete parts	unit	148
	Crossarm	unit	44,828
	Miscellaneous equipment	tons	102
	Isolators	tons	498
	Meters	unit	220,639
	Furniture and utensils	unit	450
	Insulating Mineral Oil*	l	220,000
	Poles	m	470,485
	Plastic waste	tons	32.3
	Scrap metal	tons	964
Landfill	Fiber optic cable	m <sup>3</sup>	111
	Rubble and wood	m <sup>3</sup>	15
	Ashes	tons	17,105
Composting	Wood	m <sup>3</sup>	93.3
	Golden mussel	m <sup>3</sup>	21
Co-processing	Oils and solvents*	tons	13
	Contaminated waste*	tons	23.8
Recycling	Lead-acid batteries	tons	144
	Rubble	m <sup>3</sup>	20.8
	Fluorescent lamps*	unit	17,998
	Wood	m <sup>3</sup>	1,205
	Oils and solvents*	l	1,588
	Tires	unit	28
	Scrap metal	tons	3.28

\* hazardous wastes

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Climate Change

► Eco-efficiency

Ecosystems

Reservoirs and Water Quality

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



### Administrative Waste

Copel has in place the Solidary Waste Sorting program for disposal of recyclable waste with associations and cooperatives of recyclable materials. The program is conducted in partnership with these entities and works to contribute with income generation and improvement in working conditions for pickers.

In 2016, the goal to expand the program was to reach 65% of the company's employees. This goal was exceeded, reaching 69% of the employees, and Copel received a certificate from the State Public Ministry for excellence in compliance with State Decree No. 4,167/2009, which requires the mandatory segregation of recyclable solid waste and subsequent sending to associations and cooperatives of recyclable materials.

#### Disposal of Administrative Waste

Destination	Description	Weight (kg)
Landfill	Organic/Rejects	427,606
	Composting	34,967
Recycling	Other recyclables	3,571
	Paper	130,939
	Plastic	15,773
	Metals	5,668

## Ecosystems

### Mitigation of Impacts Caused by Projects

G4-EN12

The implementation and operation of projects impact ecosystems in their area of influence. Before beginning installation, Copel conducts several environmental studies in order to assess the best ways to avoid or mitigate negative impacts while promoting the positive ones.

### Generation Projects

Construction of hydroelectric generation projects may contribute to reducing species important to the local ecosystem, due to suppression of vegetation in the catchment basin; conversion of habitats caused by damming or rivers in order to create a reservoir, and changes in ecological processes outside the natural variation range. Mitigation of impacts is done through programs involving suppression of vegetation, monitoring and rescuing species of wildlife and flora, recovering Permanent Preservation Areas, replacement of forests, monitoring and recovery of archaeological heritage, among others.

In the case of Copel Renováveis wind farms, no significant impacts on biodiversity were identified that could not be mitigated, considering the magnitude of the works and their locations. **G4-EN12**

During the installation phase of wind power generation projects, fragmentation and edge effect may occur due to suppression of vegetation and loss of habitats, increased risk of accidents involving wildlife, and risks of increased hunting activities. In order to mitigate this type of impact, Copel Renováveis requested that companies involved in the construction of wind farms conduct campaigns to relocate and rescue wildlife, as well as a Rescue and Management Program for the Plant Species *Melocactus violaceus* and *Griffinia gardneriana*.

### Transmission and Distribution Projects

Forest fragmentation and reduced populations of native species caused by suppression of vegetation in the right of way is the main direct and indirect negative impact on biodiversity due to the construction of transmission and distribution projects. In order to mitigate these impacts, Copel carries out detailed and multidisciplinary studies of alternative routes with minimal impact, prioritizing the use of previously altered areas that are environmentally and socially less fragile.

Where the route must pass through certain areas where forest remains are more preserved, the Company places higher towers in the right of way to minimize impacts.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Climate Change

Eco-efficiency

Ecosystems

Reservoirs and Water Quality

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



In 2016, a pilot study called “Valuation of ecosystem services related to the Riparian Forests Program at a plant on the Iguaçu River, Paraná” was completed and published in partnership with the Center for Sustainability Studies of FGV.

According to the data analyzed in this study, it was concluded that maintenance and recovery of riparian forests of the reservoir of the Foz do Areia (HPP GBM) plant could generate the avoided cost of approximately BRL 50 million over a 10-year period. In addition, reforestation actions in this same area and time period could remove nearly 60,000 tons of CO<sub>2</sub>e from the atmosphere. More details on this study may be obtained at: [http://mediadrawer.gvces.com.br/publicacoes/original/fgv-gvces-tese-estudos-casos\\_set16.pdf](http://mediadrawer.gvces.com.br/publicacoes/original/fgv-gvces-tese-estudos-casos_set16.pdf).

This year, new valuation studies began. One of them, to be published in 2017, refers to managing vegetation in electrical systems and the object of study is the Urban Forests Program. The other will address soil erosion on high voltage power distribution lines (LDATs).

## Forest Compensation

G4-EN13

Since 2012, Copel has maintained an agreement with the Environmental Institute of Paraná (IAP) through which it assigns contractors to dedicate exclusively to the production of native forest seedlings. These seedlings are used to restore Permanent Preservation Areas, Legal Forest Reserves, and Forest Restoration Areas of the State of Paraná.

In 2016, reforestation was carried out in urban areas with seedlings of native trees donated by third parties and plantations. There were 400 native forest seedlings and 2,434 urban afforestation seedlings. The initiative is part of the environmental compensation for cutting vegetation for power distribution lines in the State of Paraná.

In other environmental actions, such as those promoted by the Internal Social and Environmental Committees (CISAs), the Company collaborated by planting 284 native forest seedlings.

In the same period, 23,000 native forest seedlings were planted in Ibicatu State Park, totaling six hectares for environmental compensation of the Londrina - Figueira C2 TL project. Over 1,455 seedlings were planted for urban afforestation as a form of compensation for the Bateias - Curitiba Norte TL project. The Company also donated 1,615 seedlings to the Campo Largo City Government, as compensation for these projects.

In the State of Mato Grosso, approximately 60,000 seedlings of native species were planted in the Permanent Preservation Area of the future reservoir of the Colíder HPP, totaling 59 hectares of reclaimed area in 2016. In the State of São Paulo, where it implements transmission lines, the Company compensated for the impact of the project by transferring 870 native seedlings to contractors and Copel itself replanting 6,500.

## Biodiversity Preservation Ichthyofauna Studies

Copel recognizes and values the importance of biodiversity to maintaining ecosystems, and especially, life. For years, it has been monitoring the fish fauna that live in its reservoirs, distributed over five different watersheds in Paraná, and the Teles Pires River, located in Mato Grosso. This monitoring seeks to follow and understand the condition of fish in different reservoirs, guiding the environmental actions of Copel and environmental agencies. In addition, it develops captive breeding techniques for fish native to the Iguaçu River basin, with the purpose of conserving these species.

Since 1982, at the Governador Ney Braga Plant (Salto Segredo), Copel has maintained the Experimental Station for Ichthyology Studies, where it produces catfish, lambari, and surubim-do-iguazu fingerlings. The fish produced are released along the river according to conservation guidelines. The main species studied and produced are the Jundia (*Rhamdia quelen*), lambari (*Deuterodon*) and the surubim-do-iguazu (*Steindachneridion melanodermatum*).

There is also the release of fish at environmental education events and on

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Climate Change

Eco-efficiency

Ecosystems

Reservoirs and Water Quality

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



commemorative dates, such as World Water Day, World Environment Day, Tree Day, and River Day. Among these fish is the surubim-do-iguacu fish, the largest fish native to the Iguacu River, which is endangered and whose captive breeding technology was developed by Copel itself. Reports indicate that, thanks to the repopulation actions promoted by Copel, the populations of surubim-do-iguacu are growing again.

In 2016, a total of 124,758 fish were released, and this number also represents the number of fish produced at the Company's fish station, achieving the proposed goal of releasing 87,600 fish into the reservoir. In 2017, the goal is to produce and release 132,500 fish in the reservoirs of the Copel plants.

### Ecological Stations

G4-EN13

**Rio dos Touros Ecological Station** - Created in 2001, has a total area of 1,231 hectares, classified as Full Protection. The station conducts scientific research and is located in the Mixed Ombrophylous Forest or Araucaria Forest, on the right bank of the reservoir of the Governador Ney Braga Hydroelectric Power Plant (Salto Segredo), a municipality of Reserva do Iguacu Reserve, Paraná.

**Tia Chica Ecological Station** - With 423.12 hectares, will be classified as Full Protection to reinforce nature preservation and scientific research carried out by Copel. The area declared of Public Utility for condemnation purposes has not yet been declared a Conservation Unit; however the process is underway. It will serve as environmental compensation for the plant and is installed in the backwaters of the Jordão River Reservoir, in Pinhão (PR).

**Guarani River State Park** - Created in 2000, totaling 2,322 hectares. It is classified as Full Protection and aims at preserving natural ecosystems of ecological significance and scenic beauty. It began to be studied by Copel in 1997, as a result of the implementation of the Governor José Richa Hydroelectric Power Plant. It is located in the Semideciduous Seasonal Forest and Mixed Ombrophylous Forest or Araucária Forest, on the right bank of the Salto Caxias Hydroelectric Plant reservoir, in Três Barras do Paraná.

**Lago Azul State Park** - It was created through a decree in 1997, and since then, has awaited approval from the National Electricity Agency (ANEEL). The area has 1,749.00 hectares and is classified as Full Protection for protecting natural ecosystems of ecological relevance and scenic beauty. It is located in the reservoir and surroundings of the Mourão Hydroelectric Power Plant, in the municipalities of Campo Mourão and Luiziana.

### Urban Forest Program

Since 2007, Copel has supported municipal governments in planning of afforestation of public roads, contributing to environmental improvement and reduction of energy supply interruptions caused by the incompatibility between trees and electrical systems.

The initiative focuses on the production of seedlings in the Company's forest gardens. With this, in addition to the catering to interested municipalities, compensatory measures are fulfilled. More than 40,000 seedlings have been planted in the afforestation of public roads. After reformulating the program in 2015, with changes in the procedure for supplying seedlings, the process of supplying over 6,000 seedlings to 20 municipalities began. In 2016, a total of 2,545 seedlings for afforestation were delivered to seven municipalities in Paraná.

In 2016, due to the election year, the performance of the program was below plan, which was to provide 12,000 seedlings to at least 25 municipalities. Another factor that interfered in the results of the program in 2016 was the closing of Campo Mourão Forest Garden, when Copel no longer had the concession of the Campo Mourão Hydroelectric Plant. With this, the production of seedlings began to be carried out only in the Forest Garden in Cabreúvas - Governador Ney Braga Hydroelectric Plant (Salto Segredo), municipality of Reserva do Iguacu - PR; and in the Perobas Forest Garden - Governador José Richa Hydroelectric Power Plant (Salto Caxias), in the municipality of Capitão Leônidas Marques - PR. The goal established in 2016 will remain the same for 2017. Training and qualification courses for municipal managers and civil servants



About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Climate Change

Eco-efficiency

Ecosystems

Reservoirs and Water Quality

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact





in the state of Paraná were not carried out, and contact with the partner institutions should be resumed in 2017 in order to plan the continuity of the courses.

In order to manage pruning of urban trees, a corporate georeferencing project is underway, in which 229,000 trees have already been planted under the energy networks in 69 municipalities.

Also in 2016, the actions of the Urban Forest Program were announced in a lecture and roundtable at the Urban Afforestation Forum of the Southern Region of Paraná, held in June in São Mateus do Sul.

Copel participates in the Interagency Work Committee to evaluate the Municipal Urban Tree Plans coordinated by the Public Ministry of the State of Paraná - MP-PR, with the evaluation in 2016 of 69 municipal urban afforestation plans. Copel's work on the Committee was announced at the 20th Brazilian Congress of Urban Afforestation and at the Latin American Congress of the International Society of Arboriculture, held in November 2016 in Belo Horizonte.

### Riparian Forest Program



Copel carries out reforestation and fencing of Permanent Preservation Areas (APPs) in its own and third-party areas, as a way to recover degraded areas and/or to prevent their degradation. In addition to contributing to improving the water quality of the reservoirs, inhibiting the occurrence of erosion processes in the soil and conserving biodiversity. Seedlings used in reforestation are produced in the Company's forestry nurseries.

In 2016, a total 72,048 seedlings of native species were planted, reforesting 83.43 hectares. The seedling production for the Riparian Forests and Urban Forests Program was 104,000 seedlings, and the goal was to produce 213,600 native seedlings for the Riparian Forest Program. There were no available workers during the first seven months of 2016 because of the review of the call for the bid to hire gardeners. Due to this fact, the target was not reached.

### Reservoirs and Water Quality

In the **reservoirs** and surrounding areas, Copel monitors possible environmental interventions and acts to address irregularities found in terms of illegal construction in the areas of concession, release of effluents, stability of the slopes, use and occupation of Permanent Protection Areas, Illegal hunting and fishing, among others. In order to assist in the process of preserving the areas of relevant environmental interest, the Company has an agreement with the Environmental Police Battalion of the State of Paraná, actively participates in the Watershed Committees and the National and State Council of **Water Resources**, conducting the real-time monitoring of the situation of the rivers where it has reservoirs, and monitors water quality.

Copel's main impact on water resources is the modification of its natural flow conditions due to the construction of hydroelectric plants. For this reason, the company works in managing social and environmental impact of its projects, from the construction up to the operation phase, conducting studies, mitigating impacts and risks, and addressing the applicable environmental legislation. In order to evaluate some of these impacts, on a quarterly basis the Company collects and analyzes water samples from the reservoirs of the plants in order to monitor their quality using 25 physicochemical and biological parameters. Copel also monitors water quality of the river before the beginning of the construction of a new project. Such monitoring includes sediment and agrochemical analysis, involving a much larger number of parameters analyzes.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Climate Change

Eco-efficiency

Ecosystems

Reservoirs and Water Quality

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



This is  
Rafael Rodrigues

# 10 . INFRASTRUCTURE CAPITAL

Assets for Energy Generation and Planning // Transmission and Distribution Assets // Commercialization // Telecommunications // Corporate Interest

# 10. Infrastructure Capital

## Assets for Energy Generation and Planning

G4-DMA-EU6

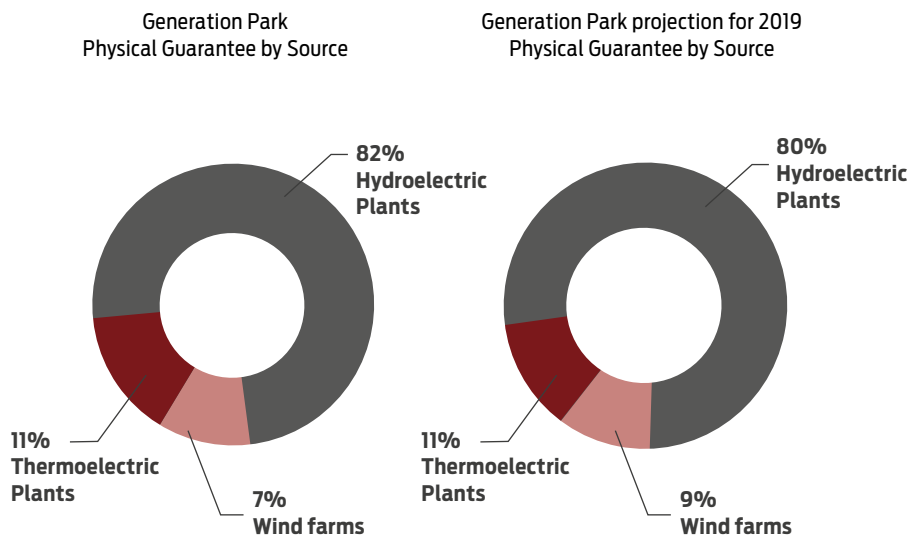
Copel operates 30 own plants and participates in nine other plants, 21 of each are hydroelectric plants, 16 wind farms, and 2 thermoelectric plants, with total installed capacity of 5,674.7 MW, and average Physical Guarantee of 2,651.4 MW. In 2016, net energy production was 25,843 GWh. **G4-EU1, G4-EU2**

As part of the strategic and sustainability guidelines established for the generation business, Copel works toward expanding its share of renewable alternative sources of energy in the energy matrix in a profitable and sustainable manner. **G4-EU2**

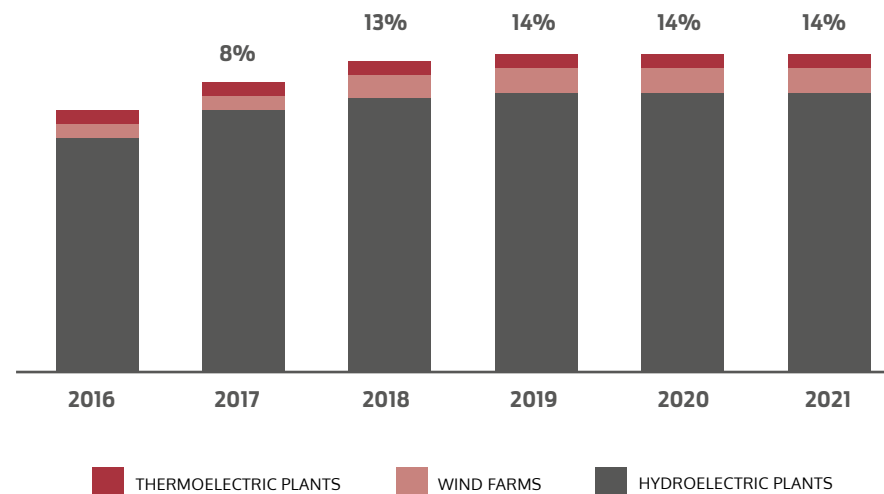
Copel is currently building 15 wind farms, which will add 737.1 MW of installed capacity and 355.5 MW average physical guarantee to the Company's generation park, with 20% of this physical guarantee expected to begin commercial operation in 2017.

BRL 3.2 billion had been invested in these generation projects by December 31, 2016, of which BRL 2.2 billion was until December 31, 2015. Of the total, BRL 2.4 million refers to additional fixed assets in own plants and in consortium, and the remainder refers to capital contributions in the companies in which the Company has interest. Evolution of the generation Park with the gradual beginning of operations of the plants under construction can be represented as follows: **G4-EU2**

Generation park by source in 2016 and installed capacity



Evolution of Generation Park



About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Assets for Energy Generation and Planning

Transmission and Distribution Assets

Commercialization

Telecommunications

Corporate Interest

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



## Power Plant Availability

G4-EU30

In the generation activities, the indicator on average availability of the plants is monitored. The indicator measures the number of hours of interrupted generation.

Average availability factor	2014	2015	2016
Total number of hours of planned interruption	71,967.37	42,265	21,916
Total number of hours of forced outage (unplanned)	36,226.20	36,048	18,672
Own hydroelectric plants	0.94	0.90	0.92
Hydroelectric plants with Copel's shareholding interest	0.95	0.96	0.96
Thermoelectric plants	0.64	0.78	0.70
Thermoelectric plants with Copel's shareholding interest	0.93	0.89	0.89

## Generation by Renewable Sources

G4-I3

In 2016, the Cutia Complex received investment of over BRL 700 million. The complex will have 13 parks with 312.9 MW generated by 149 wind turbines, and will be built in two stages, with the first seven parks expected to start operating by September 2017, with a capacity of 180.6 MW, from 86 wind turbines, and by 2018 another six wind farms will be added, with 132.3 MW from 63 wind turbines.

## Transmission and Distribution Assets

### Extension of Transmission and Distribution Lines

G4-EU4

#### Transmission

The Company wholly owns and participates in the concession for transmission and operation corresponding to 5,552 km of transmission lines and 44 substations of the basic network with transformation potential of approximately 14,602 MVA.

Currently, the Company focuses its efforts on building seven projects, which will add a 2,878 kilometers and 4,150 MVA of transformation capacity to the set of transmission lines and substations.

#### Distribution

Copel's distribution lines total 195,458.5 kilometers, and in all serve nearly 4.5 million consumers, in 394 cities in the state of Paraná and one municipality in Santa Catarina.

Distribution Lines – Voltage level	2014	2015	2016
<b>Total extension (km)</b>	<b>189,925.4</b>	<b>193,527.1</b>	<b>195,458.5</b>
13.8 kV	101,688.7	103,488.2	104,556.0
34.5 kV	82,232.5	83,347.4	84,071.3
69 kV	727.2	695.3	695.4
138 kV	5,153.5	5,866.6	5,970.3
230 kV	123.5	129.6	165.5
<b>Number of substations</b>	<b>361</b>	<b>363</b>	<b>364</b>

In 2016, 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, in 2016 these projects added approximately 185 MVA to the distribution system and 84 km of new 138 kV transmission lines.

**Wire Market (TUSD)** - In 2016 the load wire, which takes into account all consumers that accessed the distribution network, showed a reduction of 2.0%, compared with 2015. The industrial wire market decreased by 1.4% in the year, and the most significant branches of the industrial class that reported a drop in 2016 were those manufacturing non-metallic mineral products, wood products, rubber products, and plastic material.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Assets for Energy Generation and Planning

Transmission and Distribution Assets

Commercialization

Telecommunications

Corporate Interest

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



Power Wire Market	No. Of Consumers/contracts			Energy Distributed (GWh)		
	2016	Dec/15	%	2016	2015	%
Captive Market	4,478,767	4,418,062	1.4	22,328	24,043	(7.1)
Utilities and Licensees	4	4	-	614	699	(12.2)
Free Consumers <sup>(1)</sup>	620	129	380.6	5,273	4,045	30.4
Wire Utilities	2	2	-	52	56	(7.1)
Wire Market	4,479,393	4,418,197		28,267	28,483	(2.0)

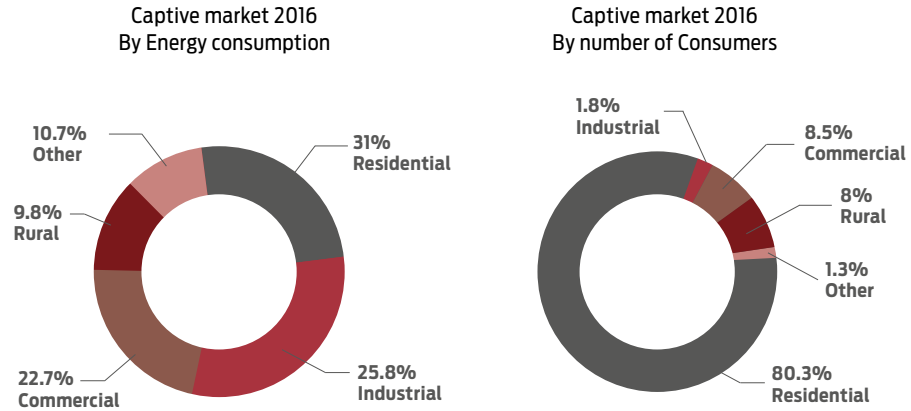
<sup>(1)</sup> Total number of free consumers served by Copel Geração e Transmissão and by other suppliers within the concession area of Copel Distribuição.

**Captive market** - From January to December, captive market consumption was 22,328 GWh, with a negative variation of 7.1% compared with the same period in 2015. The drop in captive consumption is mainly due to the economic recession that began in the second quarter of 2014 and has worsened, as well as the migration of 491 consumers to the free market in 2016, which represented a consumption of 1,296 GWh in the year.

The number of captive consumers billed by Copel Distribuição in December 2016 was 1.4% higher than in December of the previous year, totaling 4,478,767 consumers. **G4-EU2**

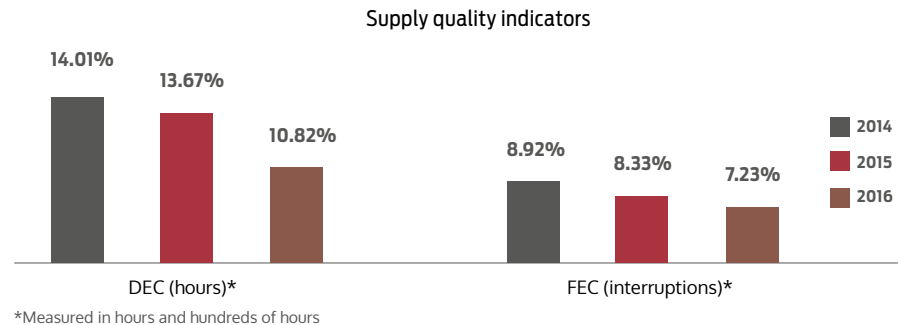
Energy Sold (GWh)	Dec/2016	Dec/2015	%
Residential	6,932	6,957	(0.4)
Industrial	5,753	6,929	(17.0)
Commercial	5,059	5,530	(8.5)
Rural	2,179	2,256	(3.4)
Other	2,405	2,371	1.4
<b>Total</b>	<b>22,328</b>	<b>24,043</b>	<b>(7.1)</b>

The charts show the participation of the captive market by class, compared to energy consumption and number of consumers:



### Efficiency in Supply: Quality Management and Energy Loss

Quality and supply, measured through performance indicator of distributors in terms of continuity of services provided, known as DEC (Equivalent Duration of Interruption by Consumer Unit) and FEC (Equivalent Frequency of Interruption by Consumer Unit) showed improvement in 2016 compared with the previous year. The improvement of the DEC was 20.8% and the FEC, 13.2%, as a result of changes in process, increased maintenance and preventive inspections, and performance and expansion works. **G4-EU28, G4-EU29**



About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Assets for Energy Generation and Planning

Transmission and Distribution Assets

Commercialization

Telecommunications

Corporate Interest

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact

Loss of energy is inherent to the nature of electricity transformation, transmission, and distribution processes. In 2016, overall losses - technical, non-technical and of basic network - represented 9.6% of the energy injected into the distribution system, a percentage that remained stable compared with 2015.

G4-EU12

Types of Losses		2014	2015	2016
Transmission	Overall losses (%)	1.7	1.8	2.0
	Technical losses (%)	1.7	1.7	1.9
Distribution	Overall losses (%)	9.8	9.6	9.6
	Technical losses (%)	6.2	6.1	6.1
	Nontechnical losses (%)	1.9	1.6	2.0

Technical losses, on the same basis, remained at the level of the previous year, and non-technical losses increased by approximately 0.4 p.p in 2016. The transmission operation, on the other hand, can register losses in the interconnected system, which are proportionately divided between generators and distributors, and determined by the Electric Power Marketing Chamber (*Câmara de Comercialização de Energia Elétrica - CCEE*).

Compared with previous years, losses in the basic network have changed. These totals refer to losses observed in the basic network of the national interconnected system, 50% prorated to generators and 50% to load agents, where Copel Distribuição has a defined portion reflecting its share of the market. A change in this loss profile influences the total amount for overall losses.

### Advances in Operational Excellence

**Telemetry Group A** - Group A and B billing data is automatically obtained, without the need to send someone to read the meter. Until 12/31/2016, there were 13,461 telemetric points in Hemera, corresponding to 87.9% of the consumers in group A, group B with microgeneration and free (14,534). This type of distance measurement enables real time data collection (on time), optimizing the process for more precise collection, handling, and availability of data, including data for customers, via the Internet. The system is also capable of monitoring use of energy, issuing alarms when

abnormal situations occur, detecting problems and irregular procedures in metering and reducing commercial losses for Copel.

**Paraná Smart Grid Project** - a government project in the State of Paraná, inaugurated in 2014, which gathers Copel's efforts with that of the companies Lactec, Tecpar, Sanepar and Compagás, and aims to improve the telemetry system. It was designed to improve the quality of services and the Company's ability to serve in the electrical and telecommunications system.

As part of the project, telemetry points were installed in the urban and rural areas of Greater Curitiba in order to test the technologies. There were also shared telemetry facilities (joint measurement of water, energy, and gas) for consumers in the district of Bigorriho, energy micro-generation with the installation of a wind turbine and set of solar panels added to the power grid of the Copel Distribuição km3 hub, for electric cars and bicycles, and reconfiguration of distribution networks in feeders of three substations. Through the project, reading is performed every hour allowing for detection of problems, power outages and reading without physical displacement.

In 2016, a total of BRL 3.5 million was invested in implementing new equipment in distribution networks, in reconfiguration systems in the city of Guaíra (PR), in expanding monitoring of customers that access distributed generation, in installing 1,000 points of energy telemetering in the municipalities of Bocaiúva do Sul and Campina Grande do Sul, in order to support the installation and monitoring of the electric charging station for electric buses in Curitiba.

**Mais Clic Rural** - In 2016, investments were made in the amount of BRL 43 million in new technologies in automation and communication systems, 34/13 kV substations, and work to improve and reinforce the network. The initiative focuses on the four sectors most sensitive to the quality of energy supply: pig farmers, tobacco farmers, aviaries, and dairy farmers in the State of Paraná. Altogether, 70,000 rural producers in Paraná and, indirectly, around 2.4 million rural and urban consumers may benefit. Among the main advances made in the period is the entry into operation, in four locations, of the network automatic reconfiguration system. The technology enables the isolation of possible defects and the automatic restoration of supply in the other

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Assets for Energy Generation and Planning

Transmission and Distribution Assets

Commercialization

Telecommunications

Corporate Interest

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



sections of the network. By July 2018, the goal is to take the innovation to the other 133 rural circuits in the state.

In addition to a series of improvements to the distribution system in rural areas, the amount invested allowed for the purchase of 400 automatic branch circuit-breaker systems, 130 automatic load reconfiguration systems, and 1,000 single-phase reclosers. Equipped with technology still new in this country, the equipment enables automatic reclosing, replacing manually operated circuit reclosers installed at the poles. It is expected that by the end of 2017, they will all be installed - avoiding about 12,000 deployments of crews per each year, to locate the defects and manually reconnect the reclosers.

In the pilot project carried out in Salto do Lontra where a recloser station was implemented and investments in network automation systems were made, the average duration of interruptions (DEC) in the municipality was reduced by 70%. In the other places where the investments were made, there were 30% to 60% improvements in the quality indicators.

In 2016, Copel's rural DEC contributes 5 hours to Copel's total DEC, with a reduction of approximately 18% in Copel's total rural DEC.

**Distributed Generation** - is the generic name of the type of energy generation that differs from the centralized generation, usually of greater size and greater environmental impact, because it occurs next to or near consumers.

Copel Distribuição updates technical standards and adopts best engineering and safety practices to connect customers that access distributed generation (57 independent producers or self-producers, with 600 MW of generation in 45 municipalities).

For micro and minigerators, including operating units and units in documentary processing, there are 405 units, in general, of solar generations (395 units). They total 3.34 MW of installed power.

The addition of distributed generation, although insufficient to meet the growth

in demand, is fundamental to reducing the rate of growth of generation, and postpone the need to build large plants and transmission lines that, together with their benefits, are associated with large environmental impacts.

## Commercialization

Copel Comercialização, created in January 2016, established itself in the market under the brand Copel Energia, working with a free market specialization of energy purchase and sale, motivated by the accelerated movement of migration of large consumers from the regulated market to the Free Marketing Environment - ACL. In addition to operating in the energy purchase and sale segment, it offers management services in the free energy market for its customers. The Company showed rapid growth, closing the year with 30 megawatts of average energy sold. For 2017, we expect to double the volume traded, with over 20 negotiations in progress.

## Telecommunications

Copel Telecomunicações provides telecommunications and communications services in general, in Multimedia Communication Service (SCM), developing studies and projects focused on meeting the needs of the Company and the market in general. The operation of such services is for an indefinite term, without exclusivity, at national level.

In 2016, the fiber optic network totaled 31,117 km of fiber optic cables, up 10.7% compared with 2015, of which 10,140 km are intercity and 20,977 km are urban. This network provides corporate services in 399 municipalities in Paraná, two in Santa Catarina with broadband services in 64 municipalities in Paraná.

## Corporate Interest

Copel has corporate interest and association with companies, consortiums and other institutions, which operate in several sectors other than energy. More information in NE 1.1, NE 2, NE 18, and NE 19.7 of the Financial Statements.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Assets for Energy Generation and Planning

Transmission and Distribution Assets

Commercialization

Telecommunications

Corporate Interest

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact





# 11. FINANCIAL CAPITAL

Net Operating Capital // Operating Costs and Expenses // EBITDA // Financial Result // Value Added // Indebtedness // Net Profit Consumer Default // Investment Program // Relationship with Shareholders and Investors

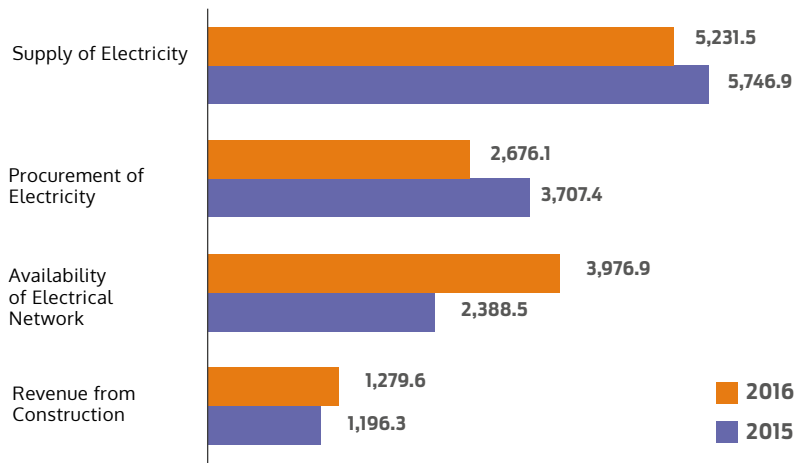


# 11. Financial Capital

G4-EC1

## Net Operating Revenue

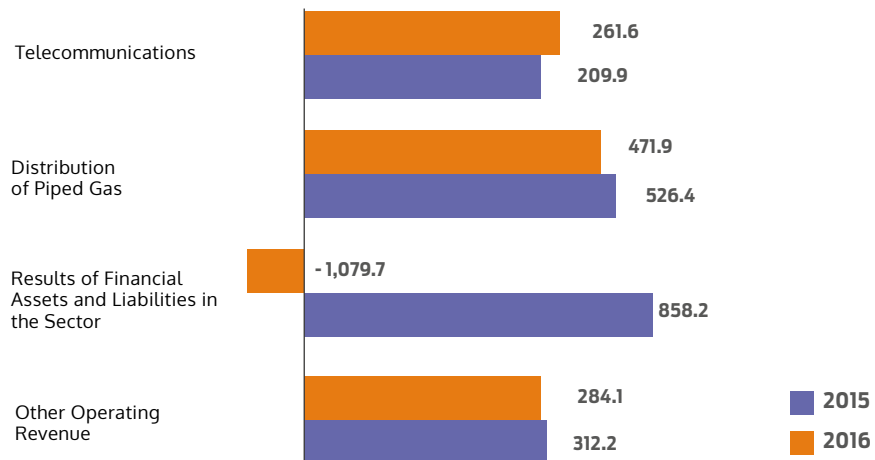
In 2016, Net Operating Revenue dropped BRL 1,844.1 million, representing a 12.3% decrease compared with 2015.



This variation is mainly due to:

- Decrease of BRL 515.4 million in **Revenue from the Supply Electricity**, mainly due to the 7.1% retraction in the captive market, basically as a result of the migration of captive consumers to the free market and of the country's economic situation; and the average reduction of 12.87% in the rate applied beginning June 2016.
- Reduction of BRL 1,031.4 million in **Supply of Electricity**, mainly due to lower PLD (Settlement Price for Differences) value in the period; and lower revenues in CCEE, due to the non-activation of the Gas-Fired Thermoelectric Plant (UEG) Araucária.

- Increase of BRL 1,588.1 million in **Revenue from Electric Network Availability**, mainly due to the recognition of the effects of remuneration for the remeasurement of cash flow as a result of Ordinance MME No. 120, regarding RBSE assets; result of the 4th Tariff Review Cycle, occurred in June 2016, which increased Portion B by 22%; partially offset by the drop in power consumption in the wire market; and by the average adjustment of -12.87% in the usage tariff.
- Increase of BRL 83.3 million in **Revenue from Construction**. The Company accounts for revenues related to the construction or improvement of the infrastructure used to provide electricity or gas distribution and transmission services, which totaled BRL 1,279.6 million in 2016, and BRL 1,196.3 million in 2015. The respective expenses are recognized in the income statement for the period, as cost of construction, when incurred.

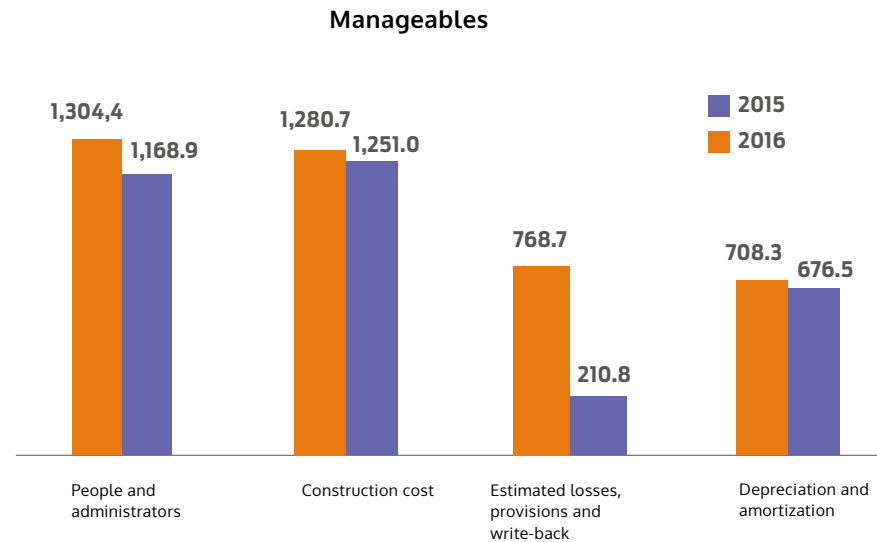
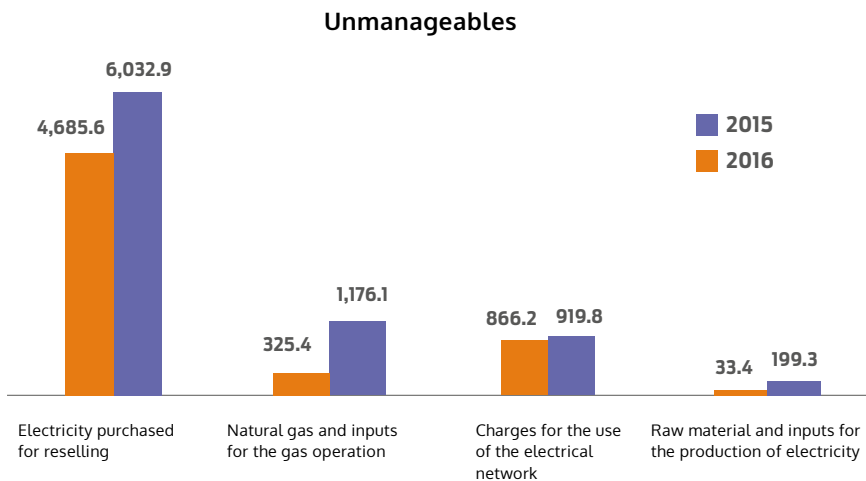


- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Intellectual Capital
- Social and Relationship Capital
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Net Operating Capital
- Operating Costs and Expenses
- EBITDA
- Financial Results
- Value Added
- Indebtedness
- Net Profit
- Consumer Default
- Investment Program
- Relationship with Shareholders and Investors
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact

- An increase of BRL 51.7 million in **Revenue from Telecommunications**, mainly due to the increase in the number of customers, especially in the retail market, with the Copel Fibra product.
- Decrease of BRL 54.5 million in **Revenue from Distribution of Piped Gas**, due to the non-activation of UEG Araucária and the market retraction compared with the previous year.
- Negative result of BRL 1,079.7 in the **Result of the financial assets and liabilities in the sector** in 2016, while in 2015 the result was positive, at BRL 858.2 million.
- A reduction of BRL 28.0 million in **Other Operating Revenues**, reflecting the lower variation in the fair value of the indemnifying assets of the concession in the amount of approximately BRL 85.0 million, offset by the increase in revenues from services rendered, revenues from leases, and renting equipment and structures, and fines applied to customers who migrated from the captive market to the free market.

- Decrease of BRL 1,347.3 million in **Electricity Purchased for Resale**, mainly due to the lower LDP in the period and the impact of the GSF - Generation Scaling Factor (risk of water shortage).
- Reduction of BRL 850.7 million in **Natural gas** and gas operation inputs reflecting the non-activation of UEG Araucária in 2016.
- Decrease of BRL 53.5 million in **Charges for the Use of the Electricity Grid** mainly due to lower costs of Charges on System Services - ESS, offset by the increase of the Charge on Reserve Energy - EER.

## Operating Costs and Expenses



- Increase of BRL 135.6 million in **Personnel and Directors**, mainly reflecting the salary adjustment of 9.9% in October 2015 and 9.15% in October 2016, according to the collective bargaining agreement, and the variation of BRL 38.8 million of provision for compensation for voluntary resignations and pensions.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Net Operating Capital

Operating Costs and Expenses

EBITDA

Financial Results

Value Added

Indebtedness

Net Profit

Consumer Default

Investment Program

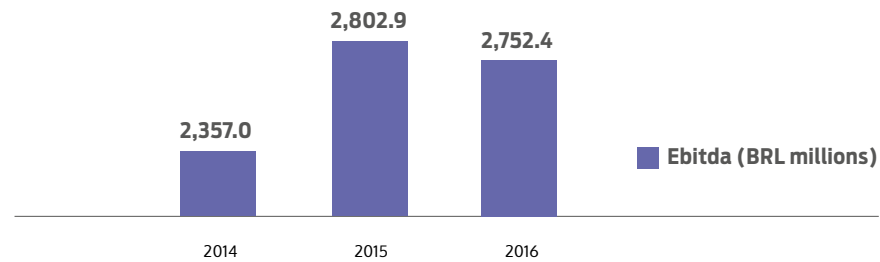
Relationship with Shareholders and Investors

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact

- Increase in **Construction Cost**, from BRL 1,251.0 million in 2015 to BRL 1,280.7 million in 2016.
- Increase of BRL 557.9 million in Estimated Losses, Provisions and Reversals mainly due to: provision for estimated losses for doubtful accounts, in the amount of BRL 46.9 million; reversal for litigation in the amount of BRL 69.9 million - considering the reversal of BRL 193.4 million in the Cofins proceedings; and estimated losses for impairment of assets in the amount of BRL 647.6 million.

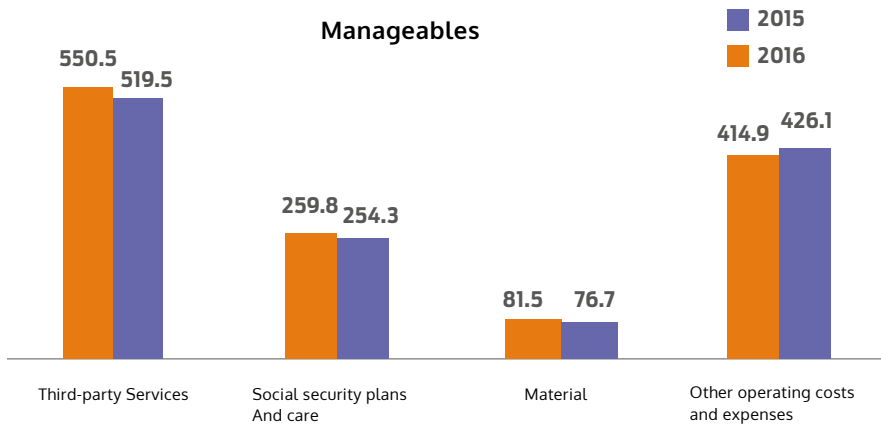


## Financial Result

The financial result decreased BRL 237.1 million due to a 16.5% increase in financial revenues, mainly due to the late payment charges of energy bills and higher income from financial investments, and a 33.1% increase in financial expenses mainly due to higher monetary value, exchange rate, and debt charges.

## Value Added

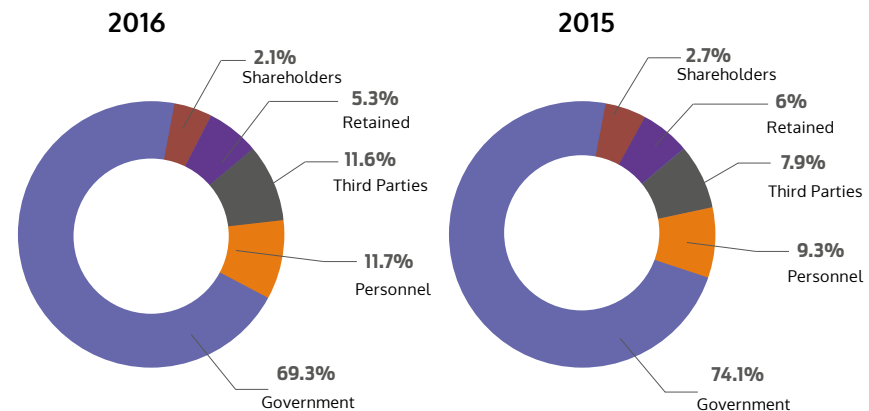
In the 2016 period, Copel recorded BRL 12,746.6 million in Total Value Added. This total is 11.8% lower than the previous year. The variation is mainly due to the decrease in sector charges in 2016. The full statement can be seen on Financial Statements.



- Increase of BRL 31.0 million in **third-party services**, mainly due to the readjustment of contracts for inflation.
- Increase of BRL 5.4 million in Social Security and assistance plans resulting from the effects of the actuarial evaluation, calculated by the contracted actuary.
- Reduction of BRL 11.3 million in other **costs and operating expenses** mainly due to the change in the method of evaluating Copel's investment in Sanepar, which was evaluated at fair value, while in 2015 it was accounted for by the equity method.

## EBITDA

The Company's EBITDA in 2016 was BRL 2,752.4 million, a decrease of BRL 50.5 million compared with 2015, representing a reduction of 1.8%.



About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Net Operating Capital

Operating Costs and Expenses

EBITDA

Financial Results

Value Added

Indebtedness

Net Profit

Consumer Default

Investment Program

Relationship with Shareholders and Investors

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



## Indebtedness

The Company finances liquidity and capital need with resources from operations and external financing, aiming to expand and modernize businesses associated with generation, transmission, marketing, and distribution of electricity, as well as telecommunications.

It is important to point out that the Company seeks to invest in corporate interest, to use credit lines available in the market, that make sense in Copel's capital structure, regarding financial leverage concerning the return from projects. We point out that our perspectives for financing, as well as cash availability, will be sufficient to meet the needs of the investment plan for the fiscal period.

Payments in the year totaled BRL 1,918.4 million, of which BRL 1,012.2 million was principal and BRL 906.1 million from charges.

## Net profit

In 2016, net profit assigned to shareholders of the holding company was BRL 958.7 million, 19.6% less than the amount obtained in the previous period, of BRL 1.192,7 million.

## Consumer Default

Copel has been calculating, since 2003, the default rate for the product "energy supply," using a methodology that considers consumers to be in default in case of a debt past due for more than 15 days up to 360 days, in compliance with the term of the due date notice (Aneel Resolution No. 414/2010), and the recognition of loss of past due debits is excluded.

In December 2016, consumer default for Copel Distribuição was BRL 267.3 million, equivalent to 1.61% of its revenues, whereas in 2015, default reached BRL 272.8 million, or 1.81% of revenues.

Although the amount of estimated losses for doubtful accounts (PECLD) in 2016 is significant, actions to combat delinquency have provided significant gains in short-term delinquency indicators, presented by the Abradee<sup>5</sup> and Corporate<sup>6</sup> default rates, obtaining a reduction in delinquency for both compared with 2015.

According to the Abradee criterion, delinquency reduced by 14.5% and according to Corporate, by 4.7%. The reduced delinquency indicators is due to the Company's action plan to combat the PECLD, with measures that have resulted in reduced default indicators.

Index (%)	2016	2015	Variation
Abradee Default	2.18	2.55	-14.51
Company Default	1.61	1.81	-11.05

## Investment Program

The investment program for 2016 was approved on 12/09/2015 by the 151st Ordinary Meeting of the Board of Directors of Copel Holding. The investments made and projected for 2016 are as follows:

<sup>5</sup> Delinquency Index Abradee criterion:  $i = \frac{\sum \text{Default (1 to 90 days)}}{\text{Invoicing 12 months}}$

<sup>6</sup> Delinquency Index Corporate criterion:  $i = \frac{\sum \text{Energy default (16 to 360 days)}}{\text{Invoicing 12 months}}$

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Net Operating Capital

Operating Costs and Expenses

EBITDA

Financial Results

Value Added

Indebtedness

Net Profit

Consumer Default

Investment Program

Relationship with Shareholders and Investors

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



Companies (BRL million)	Realized 2016	Realized 2015	Variation % 2016-2014	Planned 2017
Generation and Transmission	1,879.2	1,373.3	36.8	570.3
Distribution	777.1	656.4	18.4	629.6
Telecommunications	193.8	105.4	83.9	164.3
Wind Farm Projects <sup>(1)</sup>	722.2	229.3	245.2	638.6
Others <sup>(2)</sup>	3.1	20.4	-	32.1
<b>Total</b>	<b>3,575.4</b>	<b>2,364.7</b>	<b>51.2</b>	<b>2,034.9</b>

<sup>(1)</sup> Includes Brisa Potiguar, Cutia Empreendimentos Eólicos, and São Bento Energia.

<sup>(2)</sup> Includes Holding, Copel Renováveis, Copel Comercialização, among others.

## Relationship with shareholders and investors

At the end of 2016, a total of 25,742 shareholders participated in Copel's capital stock, corresponding to BRL 7,910.0 million, represented by 273,655,000 shares, with no par value.

### Distribution of dividends and interest on shareholders' equity

In accordance with Law 9,249/1995, Copel adopts, as a policy, the distribution of interest on capital in replacement of dividends, in whole or in part.

Pursuant to the by-laws, the amount of dividends distributed is at least 25% of adjusted net income, in accordance with article 202 and its paragraphs of Law 6,404/1976.

### Tag Along

Copel guarantees tag along rights for its minority common shares, assuring its holders the minimum price of 80% of the amount paid for shares in the controlling block.

## Markets in which Copel's shares are traded

Copel opened its capital stock on the market in April 1994, on the São Paulo Stock Exchange (BM&FBOVESPA) and became the first company in the Brazilian electricity sector listed on the New York Stock Exchange (NYSE) in July 1997. Since June 2002, the company has also been present in the European Economic Community with its entry into Latibex - the Latin American arm of the Madrid Stock Exchange. On May 7, 2008, the shares were traded at Corporate Governance Level 1 of the São Paulo Stock Exchange. Since 2005, Copel's shares have been included in the ISE - Corporate Sustainability Index of BM&FBOVESPA. In 2016, for the second consecutive year, it became part of the sustainability index of Morgan Stanley Capital International - MSCI, a global leader in the composition of financial indexes, and was also selected to be part of the portfolio of the FTSE4Good Emerging Index, an index linked to FTSE 100, of the London Stock Exchange. The seals of MSCI ESG, FTSE4Good and ISE are awarded to companies that show excellent performance in the social, environmental and corporate governance areas.



About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Net Operating Capital

Operating Costs and Expenses

EBITDA

Financial Results

Value Added

Indebtedness

Net Profit

Consumer Default

Investment Program

Relationship with Shareholders and Investors

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



## 12. SOCIAL AUDIT

## SOCIAL AUDIT

December 31, 2016 and 2015  
(Amounts expressed in BRL thousands, except when stated otherwise)  
G4-9

1 - CALCULATION BASE		2016	2015		
EN 32	Net revenue (NR)	13,101,753	14,945,844		
2 - INTERNAL SOCIAL INDICATORS		% Over NR	% Over NR		
EN 33.2	Management remuneration	20,885	0.2	19,194	0.1
	Employee remuneration	920,726	7.0	842,948	5.6
	Food and meals (meal allowances and others)	131,629	1.0	119,410	0.8
	Mandatory payroll taxes and benefits	307,057	2.3	271,225	1.8
	Pension Plan	76,583	0.6	68,091	0.5
	Health (assistance plan)	205,458	1.6	205,291	1.4
	Training and professional development	10,705	0.1	10,600	0.1
EN 33.2	Profit sharing	64,814	0.5	78,462	0.5
	Employee compensation and severance pay	47,005	0.4	6,905	-
(1)	ther benefits	16,336	0.1	16,119	0.1
	<b>TOTAL</b>	<b>1,801,198</b>	<b>13.7</b>	<b>1,638,245</b>	<b>11.0</b>
3 - EXTERNAL SOCIAL INDICATORS		% Over NR	% Over NR		
	Culture	11,672	0.1	7,568	0.1
	Health and sanitation	637	-	3,121	-
	Sports	712	-	1,801	-
	Others	62,318	0.5	99,710	0.7
	Research & Development	38,005	0.3	37,840	0.3
	Energy Efficiency Program	11,459	0.1	38,666	0.3
	Morar Bem Program	5,142	-	12,769	0.1
	Morar Bem Program	2,447	-	3,833	-
	Others	5,265	-	6,602	-
	<b>Total contributions to society</b>	<b>75,339</b>	<b>0.6</b>	<b>112,200</b>	<b>0.8</b>
	Taxes (excluding payroll taxes)	8,591,151	65.6	10,495,595	70.2

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



<b>Total</b>	<b>8,666,490</b>	<b>66.1</b>	<b>10,607,795</b>	<b>71.0</b>
<b>4 - ENVIRONMENTAL INDICATORS</b>		<b>% Over NR</b>		<b>% Over NR</b>
Investments related to the company's operations	299,893	2.3	492,277	3.3
Investments in programs and/or external projects	703	-	856	-
<b>Total</b>	<b>300,597</b>	<b>2.3</b>	<b>493,133</b>	<b>3.3</b>
(2) Number of environmental sanctions	1		1	
Amount of environmental sanctions (BRL thousand)	19		132	
<b>Environmental Goals</b>	<b>2016</b>		<b>Goals 2017</b>	
	( ) does not have goals		( ) does not have goals	
Regarding the establishment of annual goals to minimize waste, overall consumption in production/operation, and increase efficiency in the use of natural resources, the Company:	( ) fulfills 0 to 50%		( ) fulfills 0 to 50%	
	( ) fulfills 51% to 75%		( ) fulfills 51% to 75%	
	(x) fulfills 76% to 100%		(x) fulfills 76% to 100%	

EN - Explanatory Note

<b>5 - WORKFORCE INDICATORS (INCLUDING SUBSIDIARIES)</b>			<b>2016</b>			<b>2015</b>
Number of employees at the end of the year			8,716			8,813
Number of hires during the year			97			234
<b>Employee schooling</b>	Men	Women	<b>Total</b>	Men	Women	<b>Total</b>
Total Higher and postgraduate	3,098	1,320	4,418	2,993	1,289	4,282
Total Secondary	3,500	629	4,129	3,673	670	4,343
Total Primary	61	8	169	181	7	188
<b>Employee Age Group</b>						
From 18 to 30 (exclusive)			878			1,100
From 30 to 45 (exclusive)			4,290			4,257
From 45 to 60 (exclusive)			3,432			3,371
60 or older			116			85
<b>Women working in the company</b>			1,957			1,966
<b>% of women in management positions:</b>						
in relation to the total number of women			5.7			5.4
in relation to the total number of managers			20.1			19.9
Blacks working in the company			970			981
<b>% of blacks in management positions</b>						

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



	in relation to the total number of blacks	3.6	3.3
	in relation to the total number of managers	6.3	6.0
	<b>Employees with special needs</b>	<b>223</b>	<b>207</b>
	<b>Dependents</b>	<b>14,711</b>	<b>15,580</b>
(3)	<b>Outsourced</b>	<b>5,670</b>	<b>6,457</b>
(4)	<b>Apprentice(s)</b>	<b>227</b>	<b>252</b>
(4)	<b>Intern(s)</b>	<b>292</b>	<b>333</b>
	<b>Number of labor suits in course at the end of the year</b>	<b>4,476</b>	<b>4,795</b>
	<b>Number of labor suits terminated in the period</b>	<b>1,128</b>	<b>1,011</b>

**6 - RELEVANT INFORMATION ON CORPORATE CITIZENSHIP**

**2016**

**2015**

	<b>Ratio of highest to lowest remuneration in the company</b>	<b>19</b>	<b>19</b>
(5)	<b>Total number of work-related accidents</b> (includes accidents involving contractors)	<b>132</b>	<b>125</b>
	<b>Total number of consumer complaints and grievances:</b>		
	in the company	43,453	43,360
(6)	at second level	3,738	998
	in court	3,644	2,649
	<b>% of complaints addressed or solved</b>		
	in the company	99.0%	99.3%
(6)	at second level	92.4%	94.5%
	in court	15.0%	17.1%

	2016	GOALS 2017
The company's social and environmental projects were defined by	<b>Board and management</b>	<b>Board and management</b>
Workplace safety and sanitary standards were defined by	<b>All + Cipa</b>	<b>All + Cipa</b>
Regarding freedom of association, right to collective bargaining and internal worker representation, the company	<b>Encourages and follows ILO</b>	<b>Encourages and follows ILO</b>
Private pension plan covers	<b>All</b>	<b>All</b>
Profit sharing program covers	<b>All</b>	<b>All</b>
In selecting suppliers, the same ethical, social responsibility and environmental standards adopted by the company	<b>are required</b>	<b>will be required</b>

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact

Regarding employee participation in volunteer work, the company

**organizes and encourages**

**will organize and encourage**

**7- GENERATION AND DISTRIBUTION OF WEALTH**

**2016**

**2015**

**Total value added for distribution**

**12,746,577**

**14,456,447**

**Distribution of Value Added (DVA)**

Third parties

11.6%

7.9%

Personnel

11.7%

9.3%

Government

69.3%

74.1%

Shareholders

2.1%

4.9%

Retained

5.3%

11.8%

**8 - OTHER INFORMATION**

• After 2010, the Instituto Brasileiro de Análises Sociais e Econômicas - Ibase has no longer prescribed its standard model for Social Audit, understanding that this tool and methodology are already broadly disseminated among companies, consulting companies and institutes that promote corporate social responsibility in Brazil. For this reason, Copel, which had been using this model since 1999, decided, based on Ibase recommendation, to improve its Social Audit Statement, also addressing information requested in NBCT 15 aiming to ensure transparency of its information.

• The explanatory notes - ENs are an integral part of the Financial Statements and contain additional social and environmental information not covered in this Social Audit.

• This Social Audit contains data related to Copel holding, wholly-owned subsidiaries, associated companies and consortiums due to the consolidation of their results, unless indicated otherwise.

(1) The item Other Benefits is composed of: Complementary Illness Assistance, Extended Maternity Assistance, Insurance, Surplus Transport Allowance and Assistance for Permanent Injury, Accidental Death, Daycare Assistance, Education, Culture and Occupational Health and Safety Assistance.

(2) This information refers to social and environmental fines and notifications for Copel holding and its wholly-owned subsidiaries: Copel Distribuição S.A., Copel Geração e Transmissão S.A., Copel Telecomunicações S.A., Copel Comercialização S.A. and Copel Renováveis S.A. The original amounts are disclosed; these may be altered in accordance with the administrative defense presented to the environmental body. The amounts of the sanctions are proportional to Copel's interest in the projects. Amounts related to Terms of Commitment - TCs and Terms of Conduct Adjustment - TACs are classified as external social or environmental, depending on the specific nature of each.

(3) This number corresponds to the total number of contractors hired in the year regardless of the number of hours worked. It does not represent the number of outsourced work positions. Neither does it cover the contractors engaged in the implementation of the work of Copel Geração e Transmissão and subsidiaries (Plants, Transmission Lines and Substations) or those engaged in the expansion of the Copel Telecom system.

(4) Not part of the staff.

(5) Calculated through the methodology used in the GRI Sustainability Report G4 - indicator LA6.

(6) Includes the complaints in PROCON, Ombudsman's Office, Consumer.gov, ANEEL and ANATEL deemed founded.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



This is  
Priscilla Lima  
da Silva

This is  
Everton Farias Dias

## 13. GRI CONTENT INDEX

GRI Content Index // Audit Report

# 13. GRI Content Index

G4-32



The following table presents the indicators of the GRI guidelines reported in this publication and the identification of their location throughout the contents of the Report or their direct response.  
Key: ✓ Indicators with external assurance

Indicator	Details or reference page			Global Compact																																																																																																																				
<b>Strategy and Analysis</b>																																																																																																																								
✓ G4-1 Message from the president	7, 9			All																																																																																																																				
✓ G4-2 Description of key impacts, risks, and opportunities	7, 9, 15, 16, 21																																																																																																																							
<b>Organizational Profile</b>																																																																																																																								
✓ G4-3 Name of the organization	12																																																																																																																							
✓ G4-4 Primary brands, products, and/or services	12																																																																																																																							
✓ G4-5 Location of organization's headquarters	12																																																																																																																							
✓ G4-6 Countries where the organization operates	12																																																																																																																							
✓ G4-7 Nature of ownership and legal form	12																																																																																																																							
✓ G4-8 Markets served	12																																																																																																																							
✓ G4-9 Scale of the organization	12, 30, 75																																																																																																																							
✓ G4-10 Employee profile	30			6																																																																																																																				
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Southeast	14	-	14																																																																																																																					
Midwest	55	5	60																																																																																																																					
Northeast	8	1	9																																																																																																																					
North	-	-	-																																																																																																																					
	Male	Female	Total																																																																																																																					
4 workdays	36	31	67																																																																																																																					
6 workdays	186	331	517																																																																																																																					
8 workdays	6,409	1,538	7,947																																																																																																																					
✓ G4-11 Percentage of employees covered by collective bargaining agreements	23 The Company has a relationship with 19 unions representing the various classes of workers and, throughout the year, holds meetings to discuss matters of mutual interest. On the base date (October), this relationship intensifies when unions and Copel discuss the demands to reach the Collective Labor Agreement (ACT). Compliance with the clauses of the ACTs mitigates possible problems involving unions and employees. In addition, dismissals for just cause are preceded by a summary administrative proceeding, regulated by an internal administrative norm, which guarantees the employee the right to defense.			1,2,3																																																																																																																				
✓ G4-12 Description of the organization's supply chain	44			All																																																																																																																				

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Audit Report

Annex - Incorporation of the Principles of the Global Compact





GRI Content Index



✓	G4-13 Significant changes regarding size, structure, ownership, and supply chain	64	
✓	G4-14 Description of how the organization applies the precautionary	21	
✓	G4-15 Externally developed social charters, principles, or other initiatives	4, 26, 52, 95	ALL
✓	G4-16 Memberships of associations and organizations	26, 95	ALL
<b>Identified Material Aspects and Boundaries</b>			
✓	G4-17: All entities included in the organization's consolidated financial statements	4, 14	
✓	G4-18 Process for defining the report content	5	
✓	G4-19 Material aspects identified in the process for defining report content	6	
✓	G4-20 Aspect boundary, within the organization, of each material aspect	All relevant and strategic aspects are material within Copel and for all of its businesses.	
✓	G4-21 Aspect boundary, outside the organization, of each material aspect		

Capitals used in our businesses	Strategic and relevant aspects for the success of our business in the medium and long term	Relevant Indicators	Relevance to stakeholders
Human capital	Governance, Ethics and Compliance	HR1, EN29, S03, S04, S05, S06, S07, S08, HR1, HR8, PR9	All Copel stakeholders
	Human Capital Management	LA1, LA2, LA9, LA10, LA11, EU14, EU15	Employees and contractors
	Occupational Health and Safety	LA6, EU8, EU24, EU25, LA6	Employees, contractors and regulatory agencies
Intellectual Capital	Culture of Innovation	EU 18	All Copel stakeholders
	Risk and Crisis Management	G4-2	All Copel stakeholders
Social and Relationship Capital	Customer and Consumer Relationship	EU3, EU7, EU27, PR5, SO11	Clients and consumers
	Supplier Management	EC9, EN32, EN33, LA1, LA14, SO9, SO10, HR10, HR11	All Copel stakeholders
	Relationship with the Community	EC7, SO1, SO2, EU19, EU20, EU22	All Copel stakeholders
Natural Capital	Climate Change	EC2, EN15, EN16, EN17, EN18, EN19	All Copel stakeholders
	Operational Excellence and Eco-efficiency	EN3, EN6, EN8, EN9, EN21, EN22, EN23	All Copel stakeholders
	Ecosystems	EN11, EN12, EN13, EU13	All Copel stakeholders
Infrastructure Capital	Energy Planning and New Assets	G48, EU1, EU2, EU6, EU10, EU12, EU28, EU29, EU30	All Copel stakeholders
	Economic and Financial Performance	G49, EC1	All Copel stakeholders, more specifically governments and partners
Financial Capital	Regulatory Affairs Management	G42	Regulatory agencies, customers and consumers
	Access to Capital	EC7	Customers and consumers

	G4-22 Restatements of information provided in previous reports	4 Restatements in the information are provided throughout the report, together with the context of the change	
✓	G4-23 Significant changes from previous reporting periods in the scope and aspect boundaries	4, 6	

- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Intellectual Capital
- Social and Relationship Capital
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Audit Report
- Annex - Incorporation of the Principles of the Global Compact



GRI Content Index



Stakeholder engagement			
✓	G4-24 List of stakeholder groups engaged by the organization	4, 5	All
✓	G4-25 Basis for identification and selection of stakeholders with whom the company engages	4, 6	
✓	G4-26 Approach to stakeholder engagement	4, 6	
✓	G4-27 Key topics and concerns that have been raised during the engagement, by stakeholder group	5 Concerns raised during previous cycle engagements are listed on page 3 of the 2015 Report, available <a href="#">online</a> .	
✓	G4-28 Reporting period	4	
✓	G4-29 Date of most recent previous report	4	
✓	G4-30 Reporting cycle	4	
✓	G4-31 Contact point for questions regarding the report or its contents	6	
✓	G4-32 'In accordance' option and location of the GRI Content Index	4, 80 a 91	
✓	G4-33 Policy and current practices with regard to seeking external assurance for the report	4, 92	10
Governance			
✓	G4-34 Governance structure of the organization and its composition	19	
✓	G4-35 Process for delegating authority from the highest governance body for economic, environmental, and social topics	18, 25	
✓	G4-36 Process to appointed an executive-level position or positions with responsibility for economic, environmental and social topics, and whether such post holders report directly to the highest governance body	18, 25	All
✓	G4-37 Processes for consultation between stakeholders and the highest governance body on economic, environmental and social topics	5 The Board of Directors consults stakeholders directly and indirectly through various representatives, focusing on economic, environmental, and social issues, and delegating consultations to the Company's departments and receiving consolidated feedback. Copel's Business Development Department is responsible for analyzing business opportunities, as well as social and environmental risk assessment in the phase before project implementation. The results of the assessments are presented for approval at meetings with the Executive Board and the Board of Directors.	All
✓	G4-38 Composition of the highest governance body and its committees	19, 20	
✓	G4-39 Chair of the highest governance body	20	
✓	G4-40 Selection criteria and nomination processes for the highest governance body and its committees	20, 21 More information is available <a href="#">online</a> .	
✓	G4-41 Processes to ensure conflicts of interest are avoided and managed	Those elected to the Company's Board of Directors sign a statement of independence, which contains a clause on issues concerning conflict of interest.	10
✓	G4-42 Roles of the highest governance body and senior executives in the development of policies and goals to manage impacts	18, 19 The Board of Directors directs, approves and revises the annual plan for business processes and management of the Company.	All

- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Intellectual Capital
- Social and Relationship Capital
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Audit Report
- Annex - Incorporation of the Principles of the Global Compact



✓	G4-43 Measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental and social topics	22 In 2016, Copel Board members participated in the Training Program for Board Members, provided by Fundação Dom Cabral, where the current trends of Corporate Governance, importance of stakeholder engagement, understanding of the main financial statements and their economic and financial analysis, legal risks, and the correlation between transparency and accountability and the Company's reputation were discussed, with an analysis of various case studies. Also discussed was the modern concept of corporate responsibility that includes continuity of the organizations and the creation of job opportunities, training of the workforce, stimulation of scientific development, guarantee of human rights, freedom of association and fair trade, among other forms of creating wealth for society.	ALL
✓	G4-44 Process for delegating authority from the highest governance body for economic, environmental, and social topics	22	ALL
✓	G4-45 Responsibility for the implementation of economic, environmental and social policies	18, 21, 25	
✓	G4-46 Role of governance in reviewing the effectiveness of the organization's risk management processes for economic, environmental and social aspects	21	
✓	G4-47 Frequency of the highest governance body's review of impacts, risks, and opportunities	20	
✓	G4-48 Formal approval of the organization's sustainability report	On 03/28/2017, the Board of Directors (CAD) approved the presentation of relevant and strategic aspects, described in the Report and defined regarding business risks and impacts for society, the strategic communication materials of the Report for various stakeholders, publicly assumed sustainability commitments, as well as reported sustainability performance values and expected results.	
✓	G4-49 Process used for communicating critical concerns to the highest governance body	21	10
✓	G4-50 Nature and total number of critical concerns that were communicated to the highest governance body and solutions adopted	21	
✓	G4-51 Report the remuneration policies for the highest governance body	21	
✓	G4-52 Process for determining remuneration	22	
✓	G4-53 Participation of stakeholders concerning remuneration	Stakeholders do not participate in the company's remuneration process.	
✓	G4-54 Ratio between the highest salary and the overall average of the organization	The ratio of the total remuneration of the highest paid individual to the total annual average remuneration of all employees is 7.33. Remuneration data includes non-variable base remuneration and does not include benefits and variable pay (e.g. profit sharing and bonuses).	
✓	G4-55 Ratio between the increase in the highest salary and the average increase of the organization	31 The increase in total annual remuneration of the highest-paid individual amounts to 0.86 times the average increase of the total annual remuneration of other employees. Percentage increase in the total annual average remuneration of all employees of the organization is 10.62%. Percentage increase in remuneration of the highest paid individual of the organization is 9.15%. Remuneration data includes non-variable base remuneration and does not include benefits and variable pay (e.g. profit sharing and bonuses).	
<b>Ethics and Integrity</b>			
✓	G4-56 Organization's values, principles, standards and norms of behavior	13, 23, 24	ALL
✓	G4-57 Internal and external mechanisms to provide guidance on ethical and lawful behavior	24	10
✓	G4-58 Internal and external mechanisms adopted by the organization to communicate concerns about behaviors that are unethical or incompatible with legislation	24	10

- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Intellectual Capital
- Social and Relationship Capital
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Audit Report
- Annex - Incorporation of the Principles of the Global Compact

Indicator	Details or reference page	Global Compact
<b>Economic Aspect</b>		
<b>Economic Performance</b>		
✓ G4-EC1 Direct economic value generated and distributed	32, 49, 69 a 73	1, 2, 7, 8, 9
✓ G4-EC2 Financial implications and other risks and opportunities for the organization's activities due to climate change	52	1, 2, 7, 8, 9
<b>Market Presence</b>		
G4-EC5 Variation of the ratio between the lowest wage and the local minimum wage	Variation between the lowest wage and the minimum wage: 1.97 Variation between the lowest wage and the minimum wage - Men: 1.97 Variation between the lowest wage and the minimum wage - Women: 2.13 National minimum wage on 12/31/2015: BRL 880.00	1, 2, 6
✓ 4-EC7 Development and impact of infrastructure investments and services provided for public benefit	47 In addition to the investments included in the report, Copel Geração e Transmissão invested another 2.13 million in social projects. This data was not available during the reporting period, which is why it could not be ensured.	1, 2, 7, 8, 9
G4-EC8 Significant indirect economic impacts, including the extent of impacts	43, 45	1, 2, 7, 8, 9
<b>Procurement Practices</b>		
✓ G4-EC9 Policy, practices, and proportion of spending on locally-based suppliers	44	1, 2, 7, 8, 9
<b>Environmental Aspect</b>		
<b>Energy</b>		
✓ G4-EN3 Energy consumption within the organization	56	7, 8
<b>Water</b>		
✓ G4-EN8 Total water withdrawal by source	55	7, 8
✓ G4-EN9 Water sources significantly affected by withdrawal of water	55	8
<b>Biodiversity</b>		
✓ G4-EN11 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	<b>Copel Distribuição</b> has 8,208.4 km of transmission lines with voltages ranging from 69 to 500kV. Of this total, only 82.146 km in full Protection conservation units, according to the National System of Protected Areas (SNUC), only 0.96% – of its total extension. <b>Copel Geração e Transmissão</b> has 27,277 km of high voltage distribution lines in Fully Protected Areas in the State of Paraná, according to SNUC. <b>Copel Renováveis</b> does not have its own, leased or managed areas in Fully Protected Areas, according to SNUC.	8
✓ G4-EN12 Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	58	8
✓ G4-EN13 Habitats protected or restored	59, 60	8

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Audit Report

Annex - Incorporation of the Principles of the Global Compact



G4-EN14 Total number of IUCN red list species and in other conservation lists with habitats in areas affected by operations of the organization

8

**Copel Geração e Transmissão:** The most recent information presented refers mainly to the wildlife and flora data affected by the most important Generation project, which is in the final phase of implementation at the moment, which is the Colíder Plant.

**Copel Distribuição:** The main species found in forest suppression inventories is *Araucaria angustifolia* (paraná), considered critically endangered on the IUCN red list. Among the species listed by the IUCN were: *Cedrella fissilis* (cedar) - endangered and *Ocotea puberula* (canela-guaicá) - of I concern. Also, *Dicksonia sellowiana* (xaxim) is considered endangered on national and state lists. Aiming to reduce the suppression of vegetation when implementing distribution lines, the Internal Program to Minimize Impacts on the forest cover is executed.

**Copel Renováveis S.A.:** Of the species of vascular plants surveyed in the present studies carried out in the Copel Renováveis projects, five appear on some of the consulted endangered species lists. The species *Griffinia gardneriana* (Herb.) Ravenna appears on Ministry of the Environment (MMA) Ordinance No. 443/2014 as "endangered" (EN). *Tacinga inamoena* (K.Schum.) NPTaylor & Stuppy, *Cereus jamacaru* DC and *Pilosocereus catingicola* (Gürke) Byles & Rowley, belonging to the family Cactaceae, are listed in Appendix II of the CITES list, which is also considered "LC" by IUCN for the State of Rio Grande do Norte. The species *Catasetum* sp., listed in Appendix II (species not necessarily endangered, but whose marketing must be controlled to avoid exploitation incompatible with its survival) was also identified on the CITES list.

ENDANGERED SPECIES

Critically endangered	Endangered	Vulnerable	Near threatened	Least concern
3	12	28	1	21

Emissions

G4-EN15 Direct greenhouse gas (GHG) emissions (Scope 1)	53	7,8															
G4-EN16 Indirect greenhouse gas (GHG) emissions from the acquisition of energy (Scope 2)	53	7,8															
G4-EN17 Other indirect greenhouse gas (GHG) emissions (Scope 3)	53	7,8															
G4-EN18 Intensity of greenhouse gas (GHG) emissions	Intensity of emissions (ton of CO <sub>2</sub> eq scope 1 and 2) by Net Operating Revenue reached in BRL thousand: 0.041.																
G4-EN19 Reduction of greenhouse gas (GHG) emissions	53	7,8,9															
G4-EN20 Emissions of ozone-depleting substances (ODS)	COPEL does not maintain production, import or export activities of ODS.																
✓ G4-EN21 NOx, SOx and other significant air emissions	<table border="1"> <thead> <tr> <th>Air Emissions</th> <th>2016 (t)</th> </tr> </thead> <tbody> <tr> <td>NOx</td> <td>709</td> </tr> <tr> <td>SOx</td> <td>2764</td> </tr> <tr> <td>Emission of Persistent Organic Pollutants (POP)</td> <td>0</td> </tr> <tr> <td>Emission of Volatile Organic Compounds (VOC)</td> <td>0.20</td> </tr> <tr> <td>Emission of Hazardous Air Pollutants (HAP)</td> <td>0</td> </tr> <tr> <td>Emission of Particulate Matter (PM)</td> <td>709</td> </tr> </tbody> </table>		Air Emissions	2016 (t)	NOx	709	SOx	2764	Emission of Persistent Organic Pollutants (POP)	0	Emission of Volatile Organic Compounds (VOC)	0.20	Emission of Hazardous Air Pollutants (HAP)	0	Emission of Particulate Matter (PM)	709	7,8
	Air Emissions	2016 (t)															
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	Emission of Volatile Organic Compounds (VOC)	0.20															
	Emission of Hazardous Air Pollutants (HAP)	0															
Emission of Particulate Matter (PM)	709																

Effluents and Waste

✓ G4-EN22 Total water discharge by quality and destination	In 2016, Copel's administrative facilities, in the State of Paraná, discharged 119,788.92 m <sup>3</sup> of sanitary wastewater* in collecting public networks or in controlled septic tanks. *Generation of sanitary wastewater calculated according to NBR 7229, coefficient of return water-sewer = 0.8.	8
✓ G4-EN23 Total weight of waste by type and disposal method	57	8

Compliance

✓ G4-EN29 Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	In the case of <b>Copel Geração e Transmissão</b> , there was a Terms of Adjustment of Conduct (TAC), which covers two judicial proceedings, in which six court deposits totaling BRL 1,200,000.00 were made. There were no sanctions.	8
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About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

➤ GRI Content Index

Audit Report

Annex - Incorporation of the Principles of the Global Compact

Suppliers																																																																																																							
✓	G4-EN32 Percentage of new suppliers that were screened using environmental criteria	44 For legislation-related issues as well as due to the fact that Copel is a mixed economy company, the bidding processes follow the applicable legislation, therefore not allowing for the selection of suppliers based on environmental criteria.	8																																																																																																				
✓	G4-EN33 Significant actual and potential negative environmental impacts in the supply chain and actions taken	At Copel, there is currently no mapping of significant negative environmental impacts in the supply chain.	8																																																																																																				
Social Aspect																																																																																																							
Labor practices and decent work																																																																																																							
Employment																																																																																																							
✓	G4-LA1 Total number and rates of new employee hires and employee turnover	30	6																																																																																																				
		<table border="1"> <thead> <tr> <th>New Hires</th> <th>2014</th> <th>2015</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td><b>Total</b></td> <td>211</td> <td>225</td> <td>95</td> </tr> <tr> <td>Male</td> <td>131</td> <td>144</td> <td>70</td> </tr> <tr> <td>Female</td> <td>80</td> <td>81</td> <td>25</td> </tr> <tr> <th colspan="4">New hires by age group and location</th> </tr> <tr> <td>Under 30</td> <td>112</td> <td>114</td> <td>47</td> </tr> <tr> <td>30 to 50</td> <td>93</td> <td>99</td> <td>45</td> </tr> <tr> <td>Over 50</td> <td>6</td> <td>4</td> <td>3</td> </tr> <tr> <td>Southern Region</td> <td>208</td> <td>222</td> <td>90</td> </tr> <tr> <td>Southeast</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Midwest</td> <td>3</td> <td>3</td> <td>3</td> </tr> <tr> <td>Northeast</td> <td>0</td> <td>0</td> <td>2</td> </tr> <tr> <td>North</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table>	New Hires	2014	2015	2016	<b>Total</b>	211	225	95	Male	131	144	70	Female	80	81	25	New hires by age group and location				Under 30	112	114	47	30 to 50	93	99	45	Over 50	6	4	3	Southern Region	208	222	90	Southeast	0	0	0	Midwest	3	3	3	Northeast	0	0	2	North	0	0	0	<table border="1"> <thead> <tr> <th>Turnover rate</th> <th>2014</th> <th>2015</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td><b>Overall (%)</b></td> <td>0</td> <td>2.42</td> <td>1.7</td> </tr> <tr> <td>Male (%)</td> <td>2.51</td> <td>2.17</td> <td>1.38</td> </tr> <tr> <td>Female (%)</td> <td>3.82</td> <td>3.31</td> <td>2.78</td> </tr> <tr> <td>Under 30</td> <td>7.83</td> <td>0</td> <td>3.25</td> </tr> <tr> <td>30 to 50</td> <td>1.85</td> <td>0</td> <td>0.94</td> </tr> <tr> <td>Over 50</td> <td>2.1</td> <td>0</td> <td>3.31</td> </tr> <tr> <td>Southern Region</td> <td>2.44</td> <td>0</td> <td>1.65</td> </tr> <tr> <td>Southeast</td> <td>0</td> <td>0</td> <td>5.56</td> </tr> <tr> <td>Midwest</td> <td>4.76</td> <td>0</td> <td>3.97</td> </tr> <tr> <td>Northeast</td> <td>0</td> <td>0</td> <td>20</td> </tr> <tr> <td>North</td> <td>0</td> <td>0</td> <td>0</td> </tr> </tbody> </table>	Turnover rate	2014	2015	2016	<b>Overall (%)</b>	0	2.42	1.7	Male (%)	2.51	2.17	1.38	Female (%)	3.82	3.31	2.78	Under 30	7.83	0	3.25	30 to 50	1.85	0	0.94	Over 50	2.1	0	3.31	Southern Region	2.44	0	1.65	Southeast	0	0	5.56	Midwest	4.76	0	3.97	Northeast	0	0	20	North	0	0	0
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✓	G4-LA2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	32 Copel offers a package of <b>benefits that contribute to the well-being of all employees</b> : Food Aid, Snack Aid, Daycare Assistance, Extended Maternity Leave, Extended Paternity Leave, Profit Sharing, Advance of the 13th Salary, Education Aid, Foreign Language Training, Advance on Vacation Bonus, Vacation Allowance, Flexible Hours, Assistance to People with Disabilities, Assistance to employees with dependents with Disabilities, Professional Rehabilitation and Readjustment Program, Award for Traffic Safety, Complementing Disability Insurance, Chemical Dependency Program, Vaccination. <b>Quality of Life Benefits</b> - Internal Games, SESI Games, Pre Retirement program, Health and Energy Space, Copel Choir, Hours during work days for volunteer work. <b>Benefits offered through the Copel Foundation</b> - Private Pension Plan, Peculio Plan, Medical, Hospital, Dental, and Pharmaceutical Assistance Plan, and Loans with interest rates lower than those practiced by the market.	1,2,6																																																																																																				
	G4-LA3 Return to work and retention rates after parental leave	In all, maternity and paternity leave in the period, respectively, 112 and 283, and 98.21% returned after taking a maternity leave: 110 and 100% - after taking a paternity leave: 283	6																																																																																																				
Occupational Health and Safety																																																																																																							
✓	G4-LA6 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities	35																																																																																																					

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Audit Report

Annex - Incorporation of the Principles of the Global Compact

Training and Education			
✓	G4-LA9 Average number of training hours per year by employee	32	6
✓	G4-LA10 Programs for skills management and lifelong learning	33	6
✓	G4-LA11 Percentage of employees regularly receiving performance reviews	32	6

Diversity and Equal Opportunity			
✓	G4-LA12 Composition of governance bodies and breakdown of employees by employee category, by gender, age group, minority group, and other indicators of diversity		6

	2014	2015	2016
<b>Profile of individuals who are part of the governance bodies (%)</b>			
Men	96	97	95
Women	4	3	5
Under 30	0	13	0
30 to 50	28	13	20
Over 50	50	50	80
Blacks / mixed	4	3	0

	2014	2015	2016
<b>By Category (%)</b>			
Operational	1.63	1.58	1.44
Technical Prof. High School Degree	23.98	24.03	23.9
Prof. High School Degree	57.08	57.15	56.8
Prof. University Degree	17.32	17.25	17.8

\* Values are not informed

	2014	2015	2016
<b>Profile of Copel employees (%)</b>			
Men	78.2	77.87	77.73
Women	21.8	22.13	22.27
Under 30	*	*	10.05
30 to 50	*	*	67.78
Over 50	*	*	22.15
People with disabilities or special needs	2.2	2.36	2.58
Blacks / mixed	11.6	11.34	11.33

Supplier Assessment for Labor Practices			
✓	G4-LA14 Percentage of new suppliers that were screened using labor practices criteria	44 For legislation-related issues as well as due to the fact that Copel is a mixed economy company, the bidding processes follow the applicable legislation, therefore not allowing for the selection of suppliers based on environmental criteria.	1,2,7,8
✓	G4-LA15 Significant actual and potential negative impacts for labor practices in the supply chain	Currently, Copel does not have programs in place for mapping negative impacts related to labor practices in the value chain.	1,2,7,8

### Human Resources

### Investments

✓	G4-HR1 Total number and percentage of significant investment agreements and contracts that include human rights clauses.	44 Neither Copel Renováveis nor Copel Geração have management over the indicator yet.	2
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### Indigenous Rights

✓	G4-HR8 Total number of incidents of violations involving rights of Indigenous people and actions taken	In 2016, there were no cases of violation of the rights of Indigenous and traditional people.	1
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Supplier Assessment for Human Rights		
✓ G4-HR10 Percentage of new suppliers that were screened using human rights criteria	44 For legislation-related issues as well as due to the fact that Copel is a mixed economy company, the bidding processes follow the applicable legislation, therefore not allowing for the selection of suppliers based on environmental criteria.	1,2
✓ G4-HR11 Significant actual and potential negative human rights impacts in the supply chain and actions taken	Currently, Copel doesn't have programs of mapping of negative impacts related to human rights in supply chain.	1,2
Society		
Local Communities		
✓ G4-SO1 Percentage of operations with local community engagement, impact assessments, and local development programs	47	1,2,7,8
✓ G4-SO2 Operations with significant actual and potential negative impacts on local communities	46	1,2,7,8
Anti-corruption		
✓ 4-SO3 Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	24	10
✓ G4-SO4 Communication and training on anti-corruption policies and procedures	23, 24	10
✓ G4-SO5 Confirmed incidents of corruption and actions taken	23	10
Public Policies		
✓ G4-SO6 Total value of political contributions by country and recipient/beneficiary	The 2016 elections did not include financial donations from Copel. Given its quasi-public composition, the Company is legally constrained to make this type of contribution.	10
Anti-competitive Behavior		
✓ G4-SO7 Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	Copel does not have pending or closed lawsuits.	10
Compliance		
✓ G4-SO8 Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	In 2016, there was a fine of BRL 491,187.70 at Copel Telecomunicações. In addition, the amount of BRL 1,321,243.63 was paid by Copel Geração e Transmissão. There were no non-monetary sanctions or lawsuits brought through arbitration mechanisms.	
Supplier Assessment for Impacts on Society		
✓ G4-SO9 Percentage of new suppliers that were screened using criteria for impacts on society	44 For legislation-related issues as well as due to the fact that Copel is a mixed economy company, the bidding processes follow the applicable legislation, therefore not allowing for the selection of suppliers based on environmental criteria.	1,2,7,8, 10
G4-SO10 Significant actual and potential negative impacts on society in the supply chain and actions taken	44 At Copel, there is currently no mapping of significant negative impacts on the supply chain in society.	1,2,7,8, 10
Environmental Grievance Mechanisms Related to Impacts on Society		
G4-SO11 Number of grievances related to impacts on society filed, addressed, and resolved through formal grievance mechanisms	42 At Copel, there is currently no systemic process for recording and managing complaints and claims specifically related to impacts on society.	
Product Responsibility		
Product and Service Labeling		
✓ G4-PR5 Results of surveys measuring customer satisfaction	41, 42	
Compliance		
✓ G4-PR9 Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	In 2016, there was no case of non-compliance associated with quality in Tele Service (INS, Iab and ICO Indices), Quality in Distribution of Services - DIC, FIC, and DIMIC or Supply Voltage Levels.	

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Audit Report

Annex - Incorporation of the Principles of the Global Compact



## Sector Supplement

Indicator	Details or reference page	Global Compact
<b>Organizational Profile</b>		
✓ G4-EU1 Installed capacity, broken down by primary energy source and regulatory regime	60	
✓ G4-EU2 - Net energy output, by primary energy source and regulatory regime	60, 65	
✓ G4-EU3 Number of residential, industrial, and trade accounts	41	
G4-EU4 Extension of transmission and distribution lines, aerial and underground, broken down by regulatory system	64	
<b>Management of Demand for Electric Power</b>		
✓ G4-DMA EU7 Management programs for demand, including residential, trade, institutional, and industrial	43	
<b>Research &amp; Development</b>		
✓ G4-DMA EU8 R&D activity and expenditure aimed at providing more reliable electricity and promoting sustainable development	37	1, 7, 8
<b>Breakdown of investment in R&amp;D - Copel Distribuição:</b>		<b>2016</b>
Project Management	871,407.97	
Alternative sources for power generation	340,792.86	
Metering, billing, and fighting commercial losses	584,740.44	
Environment	3,038,763.98	
Operation of Electric Power Systems	2,891,060.93	
Planning Electric Power Systems	940,682.01	
Other projects	934,524.12	
Supervision, Control, and Protection of Electric Power Systems	4,496,446.91	
Safety	3,606,331.53	
<b>Total</b>	<b>17,704,750.75</b>	
<b>Breakdown of investment in R&amp;D - Copel Geração e Transmissão:</b>		<b>2016</b>
Energy Efficiency	1,065,709.43	
Alternative sources for power generation	2,335,641.84	
Management of Watersheds and Reservoirs	106,191.53	
Environment	2,848,883.92	
Operation of Electric Power Systems	2,316,348.71	
Planning Electric Power Systems	1,118,679.04	
Quality and Reliability of Electric Power Services	3,900.80	
Supervision, Control, and Protection of Electric Power Systems	2,427,165.11	
Safety	3,074,958.76	
<b>Total</b>	<b>15,297,479.14</b>	
<b>Availability and Reliability</b>		
✓ G4-DMA EU6 Management approach to ensure short- and long-term electricity availability and reliability	63	

The Operation and Maintenance (O&M) processes for Copel Geração have a management model supported by Reliability techniques. The Operation and Maintenance Based on Reliability (O&MBC) is a structured process that aims, through the analysis of cause and effect, to define the ideal policies for failure management to prevent or limit the consequences of functional failures and their relationships (health, environment, safety and costs), when applied to any physical asset, considering their operational context.

In addition to this structured procedure, a set of O&M process support tools such as Meeting to Analyze Occurrence of Failures in Generating Units (ANAOCO) and Support App Portal (OMNI/GMG) is applied. The activities are related

to maintenance planning, team management, material management, equipment registration, event registration, management of occurrence analysis, and calculation of equipment performance indicators.

The ONS annually publishes the Annual Performance Report (RAD), where the results of all centrally dispatched plants are compiled by ONS. In this report, the results of the generation agents are individually compared to the average of the other agents. These reports show that the performance of Copel Geração e Transmissão's plants, in addition to the plants where the company provides operating and maintenance services, is above the performance of other plants centrally dispatched by ONS.

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Audit Report

Annex - Incorporation of the Principles of the Global Compact



Availability and Reliability		
✓	G4-EU10 Planned capacity against projected electricity demand over the short- and long terms	Generation expansion planning is conducted by the Energy Research Company - EPE, considering the entire load of the National Interconnected System – SIN. In 2016, the amount was 771MW.
System Efficiency		
✓	G4-EU12 Transmission and distribution losses as a percentage of total energy (%)	66
Biodiversity		
✓	G4-EU13 Biodiversity of offset habitats compared to the biodiversity of the affected areas	Copel mitigates impacts on ecosystems through compensation, but at the moment does not make the comparison between the affected and compensated habitats.
		7,8
Labor Practices and Employment		
✓	G4-DMA EU14 Programs and processes that ensure the availability of skilled labor	32, 34
		1,2,5
	G4-EU15 Percentage of employees with a right to retirement in the next 5 to 10 years, broken down by functional category and region	There are 1,073 (12.56% of total) of employees subject to retirement between 2016 and 2021, and 2,183 (25.6%) - between 2016 e 2026.
		1,2,5
✓	G4-EU18 Percentage of contractor and subcontractor employees that have undergone relevant health and safety training	In 2016, a total of 2,642 outsourced and subcontracted employees of <b>Copel Geração e Transmissão</b> were subjected to health and safety training. Due to the great turnover of the employees hired, and the characteristics of the contracts (on demand, for example), there is no way to tell what percentage of contractors were trained. The company adopts, as a rule, safety integration training for all its contractors. At Copel Distribuição, this figure totaled 5,367 outsourced and subcontracted employees, representing 100%. In the case of the <b>Holding Company Copel Renováveis, and Copel Comercialização</b> , there were 160 workers.
		1,2,5
Local Communities		
✓	G4-DMA EU19 Stakeholder participation in the decision making processes related to energy planning and infrastructure development	
		7,8

Description of the **roles of the main stakeholders** in the Company's decision-making processes:

**Copel Holding:** schedules and approves all of Copel's investment decisions.

**Government of the State of Paraná:** controls the common shares and maintains administrative control of Copel Holding, is involved in all strategic decisions of Copel and its subsidiaries.

**Ministry of Mines and Energy (MME):** acts directly and indirectly (through its affiliated companies) in the long term investment decision making process. Agencies linked to the MME:

- **National Electricity Agency (ANEEL)** - normalizes and supervises all services provided by Copel Distribuição. It has the role of adjusting and reconciling the interests of society as a whole and the energy distribution companies;

- **Energy Research Company (EPE)** - plans transmission lines, in line with the needs for Copel Distribuição;

- **Operator of the National Integrated Grid (ONS)** - operates the national integrated grid and detects problems and appoints solutions for the network of Distribution Companies.

**Consumer Council:** Represents the various classes of consumers of electricity in all levels of planning.

**Organized civil society:** Is represented by governmental and non-governmental bodies for discussions on infrastructure projects, representations, or organized trade unions.

**Municipal Government** - a stakeholder in all decision-making processes in infrastructure projects.

**Environmental agencies and intervenors:** analyze and approve environmental and archaeological licensing of Copel Distribuição's main infrastructure works.

**Copel's Business Development Office** is responsible for the analysis of business opportunities and submits to approval by the Executive Board and the Board of Directors, responsible for approving strategic decisions.

Participation of stakeholders occurs in various ways, according to the phase of each project.

**In the case of Implementation of infrastructure projects:**

- the **community** is consulted directly through public hearings conducted by the licensing body and indirectly through permits/licenses/no opposition; is involved throughout the social and environmental licensing process;

- **stakeholders:** involved through the social and environmental programs defined during the licensing process.

In the case of acquisitions of assets, completion of acquisition of any asset depends on approval of regulatory agencies, such as ANEEL, CADE - Administrative Council for Economic Defense, and Financing Agencies, in addition to the necessary internal approval (Executive Board and Board of Directors), and the entire process is monitored by the Court of Auditors of the State.

In the case of preparation of projects for participation of energy auctions, several agencies participate in the process, where the environmental agency (IAP / Departments of the Environment/IBAMA) is a licensing agency and several others as intervening agencies (FUNAI, Fundação Palmares, Agência Nacional de Águas - ANA, INCRA, IPHAN, Instituto das Águas do Paraná); Federal and State Prosecutors, Local Universities and Municipal and State governments also participate in the process.

The areas coordinating and executing the project are structured to provide information and details on all resources involved and ensure the participation of stakeholders, including vulnerable stakeholders, pursuant to the environmental legislation, the needs for public hearings in licensing processes, informative technical meetings and obtaining consent of the municipalities and intervening agencies.

This detailing allows for decision-making on the implementation or not of the business, considering the social and environmental viability, availability of environmental resources and legal consents for the projects.

✓	G4-DMA EU20 Approach to managing the impacts from displacements	45 In the year 2016, two families were displaced, totaling 4 people.
✓	G4-EU22 Number of people physically or economically displaced or compensated, broken down by type of project	45, 47

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Audit Report

Annex - Incorporation of the Principles of the Global Compact









About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Audit Report

Annex - Incorporation of the Principles of the Global Compact

## Deloitte.

### EU-15 Sector Indicator

EU-15 sector indicator refers to the percentage of employees who are eligible to retire within the next five and ten years. The calculation of this indicator considers the worker contribution period, but the databases used show inconsistencies in the contribution period of the employees' previous jobs. Consequently, we were unable, through other assurance procedures, to conclude on the EU-15 sector indicator reported in the 2016 Sustainability Report.

### Qualified Conclusion

Based on the procedures described herein, except for the possible effects of the matters described in the "Basis for Qualified Conclusion on the Compilation of Information Related to GRI Indicators" section, nothing has come to our attention that causes us to believe that the information related to the GRI Indicators, included in the 2016 Sustainability Report, was not compiled, in all material respects, in accordance with Global Reporting Initiative (GRI) guidelines, G4 version.

### Other Matters

#### Scope of Assurance

The criterion to define the scope of assurance consisted of the selection of the indicators directly associated with the material aspects reported by the Company during the planning stage of the work, also excluding: (a) the indicators associated with the inventory of greenhouse gas (GHG) and its byproducts emissions (G4-EN15, G4-EN16, G4-EN17, G4-EN18, G4-EN19, G4-EN20 and G4-EN21), as well as the indicator SO10, which, as informed by Management, is not managed for reporting purposes; (b) the social balance data and information contained in Chapter 12 of the Company's 2016 Sustainability Report; and (c) the progress and status of the initiatives and projects/commitments listed in Annex 14 of the Company's 2016 Sustainability Report.

#### Guidelines and Specifications

In accordance with the guidelines of the Global Reporting Initiative (GRI) in its G4 version, the Company declares that it is in accordance with the "Core/Essential" specifications in its Sustainability Report for the year ended December 31, 2016, which reports the key performance indicators and supplementary indicators of the energy sector.

The accompanying limited assurance report has been translated into English for the convenience of readers outside Brazil.

Curitiba, July 20, 2017

DELOITTE BRASIL  
Auditores Independentes Ltda.

Fernando de Souza Leite  
Engagement Partner



Employees  
of Copel

## 14. ANNEX - INCORPORATION OF THE PRINCIPLES OF THE GLOBAL COMPACT AND SDGS





# 14. Annex - Incorporation of the Principles of the Global Compact and SDGs

G4-15, G4-16, G4-EU23

The Company ratifies its commitment to the United Nations Global Compact and the Sustainable Development Goals and presents as an Annex its Communication on Progress (COP), where it specifies the initiatives developed to implement the principles of the Global Compact and the SDGs in its operations. Throughout the publication of which this annex is a part, we also present the results of these initiatives and the progress of its commitments in 2016, which can be located in the GRI indicators reported by Copel.

## Principles of the Global Compact

## The Global Goals for Sustainable Development

-  **RESPECT** and support the internationally recognized human rights in its area of influence

---

-  **ENSURE** the company's non-participation in violation of human rights

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-  **SUPPORT** freedom of association and recognize the right to collective bargaining

---

-  **ELIMINATE** all forms of forced or compulsory labor

---

-  **ERADICATE** effectively all forms of child labor from its production chain

---

-  **STIMULATE** practices that eliminate any kind of discrimination in employment

---

-  **ASSUME** a responsible and proactive preventive approach to environmental challenges

---

-  **DEVELOP** initiatives and practices to promote and disseminate social and environmental responsibility

---

-  **ENCOURAGE** the development and diffusion of environmentally responsible technologies

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-  **FIGHT** corruption in all its forms, including extortion and bribery



- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Intellectual Capital
- Social and Relationship Capital
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact



PROJECTS / PROGRAMS / MANAGEMENT SYSTEMS / PARTICIPATIONS AND POLICIES	PRINCIPLES AND OBJECTIVES RESPONDED		DATE
	GLOBAL COMPACT	SDG	START / FINISH
<b>Policies and Management Systems</b>			
Adherence to voluntary commitments in an effort to promote sustainability, ethical conduct and best practices in corporate governance: <b>Global Compact; ODS National Movement We Can Paraná; Business Contribution for the Promotion of a Green and Inclusive Economy; 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).</b>	1 to 10	16, 17	Various / Indeterminate
<b>Management to Sustainability in the Supply Chain</b> - aims to contribute to the development of suppliers, establishing parameters linked to sustainability, proposing actions that promote and strengthen best practices throughout the supply chain.	1 to 10	16, 17	2008 / Indeterminate
<b>Our Energy Program</b> - ties together obtaining new opportunities in relation to career development, remuneration, and personal development to performance.	6	16	2013 / Indeterminate
<b>Generation by renewable sources</b> – compliance with the strategic and sustainability guidelines established for the generation business, Copel Renováveis has been researching and prospecting new businesses related to these energy sources.	7, 8, 9	7, 17	Indeterminate
<b>Ethical Guidance Council</b> – analyzes and provides guidance on processes related to ethical conduct in the Company.	1 to 10	5, 8, 16, 17	2003 / Indeterminate
<b>Committee for the Analysis of Reports on Psychological Harassment</b> – aims to assess reports on psychological harassment in labor relations within the Company.	1 to 10	5, 8, 16, 17	2009 / Indeterminate
<b>Integrity Program and Compliance Portal</b> – a set of activities that ensure compliance with internal and external rules and regulations to which the company is subject and a platform for disseminating the Company's commitments to transparency and the fight against corruption.	10	16	2015 / Indeterminate
<b>Transparency Portal</b> - of the Company and link to the Transparency Portal - In this environment, information is found on the structure of the government, revenues, expenses, bids, contracts, assets, remuneration of the Executive Branch employees. This tool for communicating with society enables monitoring and controlling the use of public resources. Publicizing the acts of the Public Administration complies with Federal Law No. 12,527/2011, which ensures the right of access to information for citizens, and State Decree No. 10,285/2014.	10	16	2014 / Indeterminate
<b>Diversity Program:</b> Implementation of the Action Plan and certification for the 5th Edition of the Pro-gender and Race Equity Program of the Department of Policies for Women.	1 to 10	4	2014 / Indeterminate
<b>Internal Social and Environmental Committees – CISAS</b> – Act as multipliers of sustainability concepts, enabling the identification of problem situations in the social and environmental aspect, strengthening the relationship with stakeholders.	9, 10	13, 16, 17	2012 / Indeterminate
<b>Copel's Corporate University – UniCopel</b> – Implementation of Educational Planning and management of the Leadership Development Programs, Postgraduate, Master's and Doctoral degrees, and Languages.x	1, 2, 7, 8, 9	13, 16, 17	2007 / Indeterminate
<b>Corporate Management Program on Climate Change:</b> Aims to discuss and deliberate actions associated with the study of the effects of climate change, implementation of Copel's Climate Change policy, and voluntary commitments undertaken.	1, 2, 7, 8, 9	6, 7, 15	2011 / Indeterminate
<b>Integrated Management of Water and Soil</b> - partnership between Copel, Sanepar and the Secretaries of State, aimed at creation of synergy between the actions conducted in hydrological micro-basins and at promotion of water quality and availability improvement through the improvement of use, management and conservation of soil, water and forests.	1, 2, 7, 8, 9	6, 15	2010 / Indeterminate
<b>Support for Public Policies and Management Improvement</b>			
Participation in the <b>Brazilian Committee of the Global Compact</b> and the <b>ODS National Movement We Can Paraná.</b>	1 to 10	16, 17	2016 / Indeterminate
Member of the <b>Brazilian GHG Protocol Program:</b> as a founding member, Copel conducts and publishes annually the accounting report of greenhouse gas (GHG) emissions.	1, 2, 7, 8, 9	13	2008 / Indeterminate
Participation in the <b>Entrepreneurship Initiative Trends in Ecosystem Services - TeSE</b> - initiative of the Center for Sustainability Studies of the FGV (Gvces) - aims to incorporate the concepts of valuing Ecosystem Services in business, as well as developing methodology.	7, 8, 9	16	2015 / Indeterminate
Participation in organizations in the electrical industry that discuss and promote <b>energy efficiency</b> and environmental improvements: Brazilian Assoc. of Electric Utilities, Energy Planning Company, Independent Energy Producers Assoc., Brazilian Assoc. of Power Generation Companies, Brazilian Assoc. of Power Distribution Companies, Brazilian Assoc. of Large Power Distribution Companies, Brazilian Committee of Large Dams, Regional Engineering, Architecture and Agronomy Council in Paraná, FUNCOGE.	1 to 10	6, 7, 15	Various / Indeterminate
Participation in associations that discuss and promote <b>environmental improvements:</b> Forum Paraná Agenda 21, Federation of Industries of Paraná, Interinstitutional Commission of Environmental Education of the National Program of Environmental Education, Watersheds Committees of the State of Paraná, Cigré Environment Committee, Regional Engineering Council, Architecture and Agronomy of the State of Paraná, Garbage and Citizenship PR Forum, Forum on Climate Change of the State of Paraná, Environmental Committees of the Public Ministry of Paraná.	7,8,9	6, 15	Various / Indeterminate

- About the Report
- Message from the President
- Industry Context
- About Copel
- Governance and Sustainability
- Human Capital
- Intellectual Capital
- Social and Relationship Capital
- Natural Capital
- Infrastructure Capital
- Financial Capital
- Social Audit
- GRI Content Index
- Annex - Incorporation of the Principles of the Global Compact





Annex - Incorporation of the Principles of the Global Compact and SDGs



Participation in the <b>Corporate Citizenship Council of the State of Paraná - CPCE</b> , for joint promotion of social responsibility in the State of Paraná.	1 to 10	16, 17	2005 / Indeterminate
Voluntary participation in the <b>Competitive Paraná Movement</b> and in examining panels of awards: National Quality, MPE Brasil, and The Management Quality of the State of Paraná.	1 to 10	16, 17	2000 / Indeterminate
<b>Integrated Management of Water and Soil</b> - in partnership between Copel, Sanepar, and State Departments, to create synergy between actions carried out in watersheds, to promote the improvement of the quality and availability of water by perfecting the use, management, and proper conservation of soil, water, and forests.	1, 2, 7, 8, 9	6, 15	2010 / Indeterminate
<b>Programs, Projects, and Social and Environmental Initiatives</b>			
<b>Program to collect donations to charities and social service institutions</b> , non-profit and of collective interest, through the energy bill.	1 to 10	1	1999 / Indeterminate
Annual donation, through tax incentives, to <b>Fund for the Rights of Children and Adolescents – FIA, Rouanet Act, Elderly Act, Incentive to Sports Act, PROFICE, PRONON and PRONAS.</b>	1, 2, 5	1	2006 / Indeterminate
<b>Corporate Volunteer Program - EletriCidadania</b> : the program allows employees to use up to 4 hours/month for performing volunteer work.	1, 2, 4, 5, 7, 8	5,17	2001 / Indeterminate
<b>Choir</b> : promotes employee integration, the quality of life at work, the development of culture and music education, as well as the appreciation of Copel's brand in the community.	6	3	2010 / Indeterminate
<b>Support room for breast pumping and reduced working day</b> : a comfortable and cozy place where mothers may withdraw and store breastmilk to be offered to their children in a timely manner.	1, 2, 6	3	2016 / Indeterminate
<b>Program Cultivating Energy</b> : works to implement community gardens in the safety sections of Copel's power networks, in partnership with municipal administrations and associations of residents.	1, 7, 8, 9	2, 10	2009 / Indeterminate
<b>Corporate Accessibility Program</b> : aims to adapt the Company in accessibility issues.	1, 2, 6	8, 9, 11, 16, 17	2007 / Indeterminate
<b>Eco-Efficiency Program</b> : Works to concentrate the various eco-efficiency initiatives developed by Copel into one program that operates as a hub, interconnecting them, strengthening them, potentializing them, and enabling new forms of operation.	7, 8, 9	6, 8, 11, 12, 13	2014 / Indeterminate
<b>Education for Sustainability Program</b> : works to train and develop professionals, formal and informal leaders of Copel, in sustainability-related issues.	1 a 10	4	1998 / Indeterminate
<b>Copel Sustainability Seminar</b> : The initiative aims to disseminate social and environmental projects and practices. The Seminar was reformulated and extended to other cities in the state of Paraná, to the cities of Londrina, Cascavel, and Segredo, under the name of <b>Sustainability Dialogues</b> .	1 a 10	4	2009 / Indeterminate
<b>Susie Pontarolli Sustainability Trophy</b> - aims to recognize and support initiatives aimed at contributing to the promotion of sustainable development and improvement in the quality of life.	1 a 10	4	2012 / Indeterminate
<b>Luz Fraterna Program</b> : Program of the Government of the State of Paraná that performs payment of consumer bills registered on the Social Electricity Rate, provided that consumption does not exceed 120 kWh.	1, 2, 4, 5, 10	1, 7, 11	2003 / Indeterminate
<b>Program Morar Bem (Live Well) Paraná</b> : 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	2003 / Indeterminate
<b>Rural Nighttime Rate Program</b> : incentive to increased agricultural production, to poultry and pig farmers, through discount prices for consumer units classified as rural, served in low voltage.	1, 2, 4, 5, 8	11	2007 / Indeterminate
<b>Nighttime Irrigation Program</b> : incentive to use of irrigation to increase agricultural and poultry production and improve quality of life in rural areas. Subsidized rates and equipment to rural consumers.	1, 2, 8	11	2003 / Indeterminate
<b>Energy Efficiency Program</b> : Geared toward the efficient use of electricity in residential, industrial, trade, and public school installations located in Copel's concession area.	1, 2, 8	7	2000 / Indeterminate
<b>Paraná Cidadão (Paraná Citizen) Program</b> : a program promoted by the Special Department for Community Relations, with the objective of offering free services that promote citizenship and social inclusion. Copel participates by providing customer service and guidelines for safe and efficient use of electric energy.	1,2,4,5,6,10	1, 7, 9	2003 / Indeterminate
<b>Paraná Digital Program</b> : digital inclusion in public education, through the connection of State schools to the Internet. In partnership with the State Government/SEED, we take the Internet to schools, with priority to localities with low HDI. Today, there are 2,210 State schools served by Paraná Digital.	1, 2, 4, 5, 6, 10	1, 9, 11	2003 / Indeterminate
<b>Connected Paraná Program</b> : the initiative provides access to the Internet in fiber optics at affordable prices and at 1 Mbps speed, according to the State Broadband Plan.	1, 2, 4, 5, 6, 10	1, 9, 11	2010 / Indeterminate
<b>State Broadband Plan - PEEL</b> : aims to disseminate affordable Internet access to all municipalities in Paraná - sell communication services to providers and municipalities that join the plan and that, on the other hand assume the commitment of providing affordable Internet service.	1, 2, 4, 5, 6, 10	1, 9, 11	2010 / Indeterminate
<b>Social Electricity Rate</b> : Established through Law No 10,438/2002, discounts are offered on electric energy consumption up to 220 kWh, to families registered in the Single Register of Social Programs from the Federal Government, provided the other criteria laid out in ANEEL Resolution No. 414/2010 are observed.	1, 2, 4, 5, 6, 10	1, 7, 11	2002 / Indeterminate

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



## Annex - Incorporation of the Principles of the Global Compact and SDGs



<b>Mais que Energia (More than Energy) Project:</b> Implementation, expansion and consolidation of social investment projects and programs for the community. In 2015, the funds were geared toward supporting institutions and schools that assist the deaf and/or deaf and blind.	1, 2	1, 7, 11	2014 / Indeterminate
<b>Smart Grid Project:</b> 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; reading is carried out every hour enabling error detection, power outage, and reading for billing without deployment of crews.	1, 2, 7, 8, 9	17	2015 / Indeterminate
<b>Telemetry:</b> enables the automated collection of data in real time (on time), optimizing the process for more precise collection, handling, and availability of data, including data for customers, via the Internet.	8, 9	7,9,13	2010 / Indeterminate
<b>Distributed Generation:</b> type of energy generation that differs from centralized, usually of greater size and greater environmental impact, because it occurs with or close to consumers.	7, 8, 9	7,9,12,13	2004 / Indeterminate
<b>Illuminating Generations Project:</b> Lectures for Fourth-grade students from public schools, of informative and preventive nature regarding the conscious and safe use of electricity, use of natural resources (energy and water) and correct disposal of waste.	1,2	4	1970 / Indeterminate
<b>Program Mais Clic Rural:</b> Improving the quality of electric power supply in rural areas, with a focus on farming activities integrated with production processes sensitive to interruptions.	1, 2, 7, 8, 9	7, 11	2015 / Indeterminate
<b>Solidarity Invoice:</b> Incentive to customers who opt for receiving the invoice by email; at each registration, Copel donates BRL 1.00 to the APAE institutions in the State of Paraná.	1, 2	11	2015 / Indeterminate
<b>Waste Sorting:</b> program is conducted in partnership with associations and material recycling cooperatives and works to contribute with income generation and improvement in working conditions for pickers.	7, 8, 9	1, 10, 11	2009 / Indeterminate
<b>PrevenCão:</b> Awareness of the population about the importance of caring for pets to prevent accidents.	7, 8, 10	4	2015 / Indeterminate
<b>Program for Integrated Actions for Development and Citizenship - UPS Citizenship:</b> integrated actions for urban development and social promotion, and recovery of citizenship are carried out in the areas of installation of the Safe Paraná units (UPS). The initiative is developed in partnership with agencies and entities of the Federal, State, and Municipal administration, and civil society, contributing to improve public safety and local social and economic development.	7, 8, 9	7, 11, 17	2013 / Indeterminate
<b>Corporate Waste Management Program:</b> Aims to reduce, reuse, measure, and monitor solid waste generated by the Company.	7, 8, 9	8, 11, 12	2006 / Indeterminate
<b>Program for Monitoring and Repopulation of Fish Fauna -</b> works to monitor and repopulate the Company's reservoirs and rivers where Copel's projects have some influence.	7, 8, 9	15	1993 / Indeterminate
<b>Experimental Station for Ichthyological Studies:</b> Study and reproduce species suitable for repopulation of rivers and reservoirs in Paraná.	7, 8, 9	15	1992 / Indeterminate
<b>Riparian Forests Program:</b> Aims to recover natural environments surrounding the reservoirs of power plants and other areas of interest to the Company.	7, 8, 9	15	2006 / Indeterminate
<b>Urban Forests Program:</b> Since 2007, Copel has supported municipal governments in planning afforestation of public roads, contributing to environmental improvement and reduction of energy supply interruptions caused by the conflict between vegetation and electrical systems.	7, 8, 9	11, 15, 17	2008 / Indeterminate
<b>Control of invasive and/or exotic species:</b> Monitoring and control of invasive and/or exotic species of wildlife and flora.	7, 8, 9	15	2000 / Indeterminate
<b>Recovery of degraded areas:</b> Monitoring and recovery of degraded areas.	7, 8, 9	15	1999 / Indeterminate
<b>Forest Gardens:</b> its objective is the production of seedlings suitable for application in other Company programs.	7, 8, 9	15	1973 / Indeterminate
<b>Botanical Garden:</b> aims to conserve and research plant species and to house collections of exotic ornamental plants.	7, 8, 9	15	2010 / Indeterminate
<b>Iguaçu Regional Museum:</b> presents the social, cultural and environmental characteristics of the populations who have occupied the banks of the Iguaçu River. It holds the collection from the Archaeological Rescue programs and from the Cultural and Scientific Exploitation Memory of Flora and Wildlife in the implementation of the Ney Braga Hydroelectric Power Plant.	7, 8, 9	4, 11	2000 / Indeterminate
<b>Ecosystem services:</b> direct and indirect contributions of ecosystems to the economy and well-being of humanity.	7, 8, 9	6, 8, 11, 15	2015 / Indeterminate
<b>Life Cycle Analysis:</b> A tool that quantifies the environmental impacts of a given product or service. Composed of categories such as: greenhouse gas emission (GHG), acidification, eutrophication, toxicity, consumption of natural resources, and depletion of the ozone layer.	7, 8, 9	7, 8, 12	2015 / Indeterminate
<b>Reverse Logistics:</b> plan, recommend, and structure the actions related to the aspect, within the scope of the Corporate Waste Management Program.	7, 8, 9	12	2014 / Indeterminate

About the Report

Message from the President

Industry Context

About Copel

Governance and Sustainability

Human Capital

Intellectual Capital

Social and Relationship Capital

Natural Capital

Infrastructure Capital

Financial Capital

Social Audit

GRI Content Index

Annex - Incorporation of the Principles of the Global Compact



## Credits

### Coordination

Governance, Risk and Compliance Office  
Coordination of Corporate Sustainability and Governance

### GRI Consulting, validation of materiality and texts

Keyassociados

### Graphic Project

Vivas Comunicação