

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Our company, with more than 100 years of experience, has a history of leadership in the Brazilian power sector, contributing to the country's economic progress and to the well-being of millions of citizens. Our business is diversified, covering all segments: generation, transmission, distribution, and solutions for customers.

We rank among the 20 largest companies in Brazil in terms of net revenue. Our ability to execute and manage energy assets was further strengthened by State Grid Corporation of China's (SGCC) arrival in Brazil. The Chinese group, the world's largest electric energy company, is our majority shareholder and is the driver behind the integration of the most advanced technologies in the electric sector, which boosts the operational efficiency of all businesses.

Our companies are:

i) Generation: In 2019, the generation segment were strengthened through the integration of CPFL Renováveis, the country's largest renewable energy generator, into our asset portfolio. Thanks to this operation, our installed capacity totals 4.3 GW in assets spread out across four of the country's five regions, making us the third-largest privately held company in terms of generation and the Brazilian leader in renewable energy. In 2019, we generated 13.1 TWh, which represents an increase of 19.5% from the previous year. Of this total, 98.3% came from renewable sources. Our companies are:

- CPFL Geração: owns three Small Hydroelectric Power Plants (SHPPs), two thermoelectric plants – Termoparaíba and Termonordeste (EPASA) – and a generator complex with eight hydroelectric power plants (HPPs).

- CPFL Centrais Geradoras: owns six hydroelectric generating plants (HGPs)

- CPFL Renováveis: generates energy from renewable sources, such as Small Hydroelectric Power Plants (SHPPs), wind farms, thermal biomass plants (TBPs) and solar power plants. Comprises 94 plants in operation and 5 under construction.

ii) Transmission: Our activities in the transmission sector seek to take advantage of synergies between generation and distribution assets, with a focus on diversifying our portfolio through opportunities in niche businesses. In the state of São Paulo, two business units already operate power transmission systems: CPFL Transmissão Piracicaba and CPFL Transmissão Morro Agudo. In 2019, we began the process of implementing three projects that were auctioned off by the National Electricity Regulatory Agency (ANEEL) at the end of the previous year:

- Construction of the Maracanaú II substation in the state of Ceará;

- CPFL Transmissão Sul I (Lot 5), which includes improvements in the Itá substation and 320 kilometers of transmission lines;

- CPFL Transmissão Sul II (Lot 11), with the construction of two new substations and 85 kilometers of transmission lines, working in the states of Santa Catarina and Rio Grande do Sul.

iii) Distribution: we are the second largest company in the electricity distribution segment in terms of the amount of energy sold, with a 14% share of the national market. Our four companies covers 687 municipalities and serves 9.8 million customers. In 2019, we distributed 68.1 TWh of energy, up 1.3% from the previous year. During the same period, our customer base increased by 1.8%. Our companies are:

- CPFL Paulista: operates 234 municipalities in the countryside of São Paulo State, serving 4.58 million customers.

- CPFL Piratinga: distributes energy to 27 municipalities in the countryside and coast of São Paulo State, serving 1.79 million customers.

- CPFL Santa Cruz: serves 45 municipalities, 39 of them located in São Paulo state, three in Paraná and three in Minas Gerais. It has 466,000 customers.

- RGE: serves 381 municipalities and 2.92 million clients in Rio Grande do Sul state.

iv) Solutions: in line with the evolution of the energy sector and customer needs, in 2018 we launched CPFL Soluções, our newest brand. With operations throughout the country, it has a portfolio of integrated solutions in energy management and trading, energy efficiency, distributed generation, energy infrastructure and consulting services.

Sustainability is a central element for our business model and, therefore, it is part of our corporate strategy and incorporated into our decision-making process. In 2019, we developed our Sustainability Plan, which systematizes actions and objectives for the next five years under the scope of sustainability management. Thus, we consolidated the work we have carried out since 2014 with the creation of the Sustainability Platform, which monitors the company's performance through indicators and strategic themes and reinforces our alignment with the United Nations' Sustainable Development Goals (SDGs) and its 2030 Agenda.

As a result of this work, in 2019, CPFL Energia was named the best company in the power sector in Exame magazine's Sustainability Guide, with special mention of our community relations programs.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2019	December 31 2019	Yes	1 year

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Brazil

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

BRL

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Equity share

C-EU0.7

(C-EU0.7) Which part of the electric utilities value chain does your organization operate in? Select all that apply.

Row 1

Electric utilities value chain

Electricity generation
Transmission
Distribution

Other divisions

Smart grids / demand response
Battery storage
Micro grids

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Director on board	The Board of Directors (BD) is responsible for the strategic business direction, including Sustainability and Climate change issues, and for the decisions that have the greatest impact on our stakeholders. The business directions includes: - Innovate and use new technologies to increase operational efficiency, digitize and customize customer service and relationships - Implement a smarter network, automating and modernizing assets to increase reliability and quality of service - Act quickly and carefully in all interventions in the electrical system to reduce SAIDI and SAIFI - Enable growth in renewable energy, also looking for acquisition opportunities - Develop new services and business models in line with market demands, as distributed energy - Continue to invest in technologies to add value to the business and allow technological advances in our search for greater operational efficiency, such as the modernization of our power plants and the implementation of digital systems to monitor dams and other assets - Accelerate the process of innovation and development of new low carbon technologies - Customer focus with outstanding service by segmentation and development of partnerships to provide complete energy solutions - Efficiency and quality to increase the competitiveness of our integrated solutions, seeking innovations in processes and technologies - Growth through the implementation of new market business models - Incorporate sustainability, in all its dimensions, into strategy and decision-making. Our Board of Directors constituted five committees with officially designated responsibilities to advise it on matters related to management of the business: Strategy and Processes Management Committee, Human Resources Management Committee, Related Parties Committee, Risks Management Committee and Budget and Corporate Finance Committee. The Strategy and Processes Management Committee advises the Board of Directors with subjects related to: > Strategic plan development and updates; > Follow-up of projects included in the Strategic Plan; > New Businesses; > Operational strategy of electric energy commercialization by the traders; > Supervision of the Sustainability and Ethics system; > Improvement of management of business processes.
Chief Executive Officer (CEO)	The Chief Executive Officer is also responsible for the definition and the implementation of the business strategy and directions, as described above. Directs and leads sustainability issues, and also defines and ensures compliance with principles and legal norms related to the topic.
Chief Sustainability Officer (CSO)	CPFL has a Vice Presidency of Legal and Institutional Relations that is responsible for the Institutional Relations and Sustainability Department and who analyses and advises on sustainability matters, including Climate Change Strategy at the Board of Executive Officers or Board of Directors level, as well as defining and ensuring compliance with the legal principles and standards. The VP is responsible for the implementation and monitoring the Sustainability Plan and Platform 2020-2024, which includes indicators and commitments related to climate change issues, as well as the strategy on climate change, consolidated in four main fronts: 1. Management of GHG Emissions: Evaluation of scopes 1, 2, and 3; and Analysis of Emission reduction measures 2. Climate risks and opportunities: Identification of risks and opportunities; Creation of mitigation plans; and carbon pricing strategy and implementation 3. Innovation: Focus on the development of low carbon products; and Innovative solutions for our operations 4. Engagement and disclosure: engagement with peers, academia and associations.
Chief Operating Officer (COO)	COO - Regulated Operations This Vice-presidency is responsible for the four distributors (CPFL Paulista, CPFL Piratininga, CPFL Santa Cruz and RGE). The area is responsible for planning and implementing adaptation projects to improve our distribution network looking for more resilience. The main responsibility for climate-related issues are: - Innovate and use new technologies to increase operational efficiency, digitize and customize customer service and relationships - Implement a smarter network, automating and modernizing assets to increase reliability and quality of service - Act quickly and carefully in all interventions in the electrical system to reduce SAIDI and SAIF.
Chief Operating Officer (COO)	COO - Market Operations This Vice-presidency is responsible for the generation (CPFL Geração and CPFL Renováveis) and energy solutions (CPFL Soluções) segments. In the generation sector, the area have moved forward with CPFL low-carbon strategy, with growth in generation from clean sources and seeks to leverage the growth capacity through the acquisition of new greenfield projects, ensuring the commitment to decarbonizing the energy matrix. With CPFL Soluções, the area supports strategies around trading (mainly incentivized energy sales in the free market), distributed generation, improving efficiency, infrastructure services, and various other solutions to take advantage of opportunities that have arisen as a result of the energy sector's development.
Board-level committee	CPFL has a Strategy and Processes Management Committee, who advises the Board of Directors with subjects related to: > Strategic plan development and updates; > Follow-up of projects included in the Strategic Plan; > New Businesses; > Operational strategy of electric energy commercialization by the traders; > Supervision of the Sustainability and Ethics system; > Improvement of management of business processes. Regarding sustainability issues, the main responsibilities are the monitoring of the Sustainability Plan and Platform 2020-2024, and the Climate Change Strategy and actions fronts, addressing the matters to the Board of Directors quarterly.
Other, please specify (Sustainability Committee)	The Sustainability Committee monitors de Sustainability Plan and the Sustainability Platform on a quarterly basis, evaluates and recommends the inclusion of social environmental criteria and guidelines in decision-making processes, proposes the development of new projects, and monitors trends and critical themes, evaluating external scenarios and how they can generate opportunities for the company.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – all meetings	<p>Reviewing and guiding strategy</p> <p>Reviewing and guiding major plans of action</p> <p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding annual budgets</p> <p>Reviewing and guiding business plans</p> <p>Setting performance objectives</p> <p>Monitoring implementation and performance of objectives</p> <p>Overseeing major capital expenditures, acquisitions and divestitures</p> <p>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</p>	<Not Applicable>	<p>Sustainability is a central element for our business model and, therefore, it is part of our corporate strategy and incorporated into our decision-making process. It adds value to the company providing a long-term vision and identifying new products and opportunities for growth. In 2019, the Board of Directors asked the Board of Executive Officers to define the Sustainability Plan, which guides business development and investments in a way that is aligned with our values and with global trends to promote sustainable development. Presented in 2019, the Plan establishes guidelines so that we can “provide sustainable, affordable and reliable energy at all times, making people’s lives safer, healthier, and more prosperous in the regions where we operate.” Our corporate objective is to power the transition to a more sustainable and smart way of providing and using energy, maximizing our positive impacts in the community and value chain. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 commitments to growth across the value chain. To establish the commitments, we also evaluated the connection of our businesses to the SDGs. The construction of the Sustainability Plan took place through a collaborative process between the different areas of the company. At the end of 2019, the result was presented to the Board of Directors, and its execution is already underway. The Sustainability Plan is being monitored through our Sustainability Platform, a management tool created in 2014 and updated annually, which establishes indicators and targets for the protection, optimization and creation of value in our businesses, taking into account economic, social, and environmental impacts and risks. The Sustainability Platform consists in 13 levers for sustainable value, which are divided into 60 indicators. Success in achieving established objectives for the indicators is reflected in the variable remuneration paid to company executives. The indicators are monthly evaluated by the Institutional Relations and Sustainability Board. Changes in performance are monitored by the Sustainability Committee and communicated to the Board of Executive Officers; the Strategy and Processes Management Committee; and to the Board of Directors. When there are deviations from these established goals, we draw up action plans to be executed by the operational areas. It is important to point that we have incorporated climate change issues into the Sustainability Plan and Platform 2020-2014. Because of the relevance of the theme to the company, we developed a specific strategy to act on four main fronts: 1. Management of GHG emissions; 2. Climate opportunities and risks management; 3. Innovation; 4. Engagement and disclosure. The strategy follows the same Governance mechanisms established to the Sustainability Plan and Platform.</p>

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Chief Sustainability Officer (CSO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
President	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other, please specify (Strategy and Processes Management Committee)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Sustainability committee	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Environment/ Sustainability manager	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

CPFL has identified climate change as one of the highest priorities according to the research we made to construct the Sustainability Plan and to the materiality matrix, periodically reviewed to meet the demands of our stakeholders and used to guide and to improve our sustainability strategy.

Our management follows guidelines established by the Sustainability Policy, in effect since 2015 and applicable to CPFL Energia and to the units of the segments in which we operate.

Therefore, our sustainability governance structure is managed by our Board of Directors (BD), which is responsible for deliberating on the Company's social, environmental and economic issues and guiding the actions of the Executive Officers, who are fully responsible for each subject.

The BD monitors these issues through our Sustainability Plan and Sustainability Platform. The process of delegation and assigning responsibilities, as well as our sustainable governance, involve the following bodies (all of them includes specific points related to climate related issues):

- Board of Directors: approves the Sustainability Policy and monitors Sustainability Plan actions and commitments, and all the indicators monitored by the Sustainability Platform. Observe aspects relates to economic, social, regulatory and environmental impacts and corporate governance directives.
- Strategy and Management Process Committee: accompanies the Sustainability Plan and Platform, and other initiatives related to the topic, taking matters to the Board of Directors for deliberation.
- Board of Executive Officers: manages and guides sustainability matters, defining and ensuring compliance with principles and legal standards.
- Vice Presidency of Legal and Institutional Relations: analyses and advises on sustainability matters at the Board of Executive Officers or Board of Directors level, as well as defining and ensuring compliance with the legal principles and standards. He is responsible for the monitoring the Sustainability Plan 2020-2024, which includes the strategy and commitments related to climate change issues.
- Sustainability Committee: monitors de Sustainability Plan and the Sustainability Platform, evaluates and recommends the inclusion of social environmental criteria and guidelines in decision-making processes, proposes the development of new projects, and monitors trends and critical themes, evaluating external scenarios and how they can generate opportunities. The Committee is composed by 12 directors from different vice-presidencies and by the Vice Presidency of Legal and Institutional Relations (Committee's president), and advises decisions that will be taken to the Executive Board and Board of Directors.
- Institutional Relations and Sustainability Department: proposes strategies and ensures the implementation of the Sustainability Platform in our business, delivering results in the short and long-term. In order to deal with a complex scenario of climate change, we have structured a model that establishes four fronts of action, as listed below:
 1. Management of GHG emissions: assessment of scope 1, 2 and 3 emissions and analysis of GHG reduction measures
 2. Climate opportunities and risks management: Identification of risks and opportunities, adaptation plans and analyses of carbon pricing scenarios and regulation
 3. Innovation: development of innovative solutions for our operation and low carbon products (e.g. energy efficiency products, distributed energy)
 4. Engagement with associations, peers, public institutions, academy, etc. and report our initiatives

The Sustainability Plan is being monitored through our Sustainability Platform, a management tool created in 2014 and updated annually, which establishes indicators and targets for the protection, optimization and creation of value in our businesses, taking into account economic, social, and environmental impacts and risks.

The Sustainability Platform consists in 13 levers for sustainable value, which are divided into more than 60 indicators. Success in achieving established objectives for the indicators is reflected in the variable remuneration paid to company executives.

It is also important to point that we have incorporated climate change issues into the Sustainability Plan and Platform. In 2019, this management system was driven by following commitments:

- Keep at least 95% from renewable sources in our generation portfolio until 2024
- Achieve a 10% reduction in our carbon intensity by 2024
- Communicate the steps we are taking to adapt to climate change
- Invest R\$ 45 million in the development of electrical mobility technology until 2024
- Offer to our clients low carbon solutions for their energy transition
- Invest R\$ 150 million in Energy Efficiency actions in Public Hospitals between 2020 and 2022
- Invest R\$ 200 million in Energy Efficiency actions toward low income communities until 2024

The governance structure and responsibilities can be seen in our 2019 Annual Report (page 32).

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	The Sustainability Plan is being monitored through our Sustainability Platform, a management tool created in 2014 and updated annually, which establishes indicators and targets for the protection, optimization and creation of value in our businesses, taking into account economic, social, and environmental impacts and risks. The Sustainability Platform consists in 13 levers for sustainable value, which are divided into more than 60 indicators (economic, environmental and social) that protect, optimize and create value through short- and medium term goals. Success in achieving established objectives for the indicators is reflected in the variable remuneration paid to company executives.

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Chief Executive Officer (CEO)	Monetary reward	Other (please specify) (Emissions reduction targets, growth in renewable energy)	The CEO has targets related to climate change issues: a) Increase the competitiveness of integrated solutions (CPFL Soluções), seeking innovations in processes and technologies aligned to low carbon economy b) Growth through the implementation of new market business models, as services related to energy efficiency, innovation and distributed generation. c) Growth through renewable energy generation (acquisition and Greenfield projects) d) Act quickly and carefully in all interventions in the electrical system to reduce SAIDI (System Average Interruption Duration Index) and SAIFI (System Average Interruption Frequency Index) (most power outages are caused by trees, windstorms, and lightning, which can damage installations that carry and distribute energy, the SAIDI and SAIFI indicators are directly related to climate change) e) Take steps to combat losses (results in significant scope 2 emissions) and default to ensure business sustainability f) Implement a smarter network, automating and modernizing assets to increase reliability and quality of service
Chief Operating Officer (COO)	Monetary reward	Efficiency target	The COO - Regulated Operations has targets related to climate change issues: a) Take steps to combat losses and default to ensure business sustainability (results in significant scope 2 emissions) b) Implement digital operations, through dispatch automation and ADMS (results in fleet and operation emissions reductions) c) Implement a smarter, network, automating and modernizing assets to increase reliability and quality of service (results in fleet and operation emissions reductions).
Chief Operating Officer (COO)	Monetary reward	Efficiency target	The Chief Operating Officer (Market Operations Vice-President) has targets related to climate change issues: a) Increase the competitiveness of integrated solutions (CPFL Soluções), seeking innovations in processes and technologies aligned to low carbon economy b) Growth through the implementation of new market business models, as services related to energy efficiency, innovation and distributed generation. c) Growth through renewable energy generation (acquisition and Greenfield projects) d) Sustainability Plan 2020-2024 targets: Keep at least 95% from renewable sources in our generation portfolio until 2024 and Offer to our clients low carbon solutions for their energy transition (energy seals, carbon credits, etc.).
Chief Sustainability Officer (CSO)	Monetary reward	Emissions reduction project	The CSO has targets related to climate change issues. The company has the ambition to growth through renewable energy generation (acquisition and Greenfield projects) and the commitment to keep at least 95% from renewable sources in our generation portfolio until 2024. To achieve these, one of CSO's goals is to obtain environmental licenses for the construction and connection of new renewable energy assets to the grid.
Other, please specify (Director of Sustainability and Institutional Relations)	Monetary reward	Other (please specify) (Emissions reduction project; Emissions reduction target; Energy reduction project; Energy reduction target; Environmental criteria included in purchases; Supply chain engagement)	Such as the CSO, the Director of Environment and Sustainability has some targets with monetary reward related to climate change issues: a) Implementation of the Sustainability Plan actions planned for 2020, which incorporates the theme of climate change: • Keep at least 95% from renewable sources in our generation portfolio until 2024 • Achieve a 10% reduction in our carbon intensity by 2024 • Communicate the steps we are taking to adapt to climate change • Invest R\$ 45 million in the development of electrical mobility technology until 2024 • Offer to our clients low carbon solutions for their energy transition • Invest R\$ 150 million in Energy Efficiency actions in Public Hospitals between 2020 and 2022 • Invest R\$ 200 million in Energy Efficiency actions toward low income communities until 2024 • Integrate sustainability aspects in the monitoring process for 100% of our critical suppliers until 2024 b) Presentation to the Board of Directors opportunities to grow in renewable energy (M&A and Greenfield projects). This is also related to the commitment of keeping at least 95% from renewable sources in our generation portfolio until 2024 c) To be included in the portfolio of the Corporate Sustainability Index (ISE). The index contains a questionnaire about climate change issues, which influences the score.
Environment/Sustainability manager	Monetary reward	Other (please specify) (Emissions reduction project; Emissions reduction target; Energy reduction project; Energy reduction target; Environmental criteria included in purchases; Supply chain engagement)	The Sustainability manager has targets with monetary reward related to climate change issues: a) As the Environmental and Sustainability Director, the manager has the target related to the Sustainability Plan actions implementation, which incorporates the theme of climate change: • Keep at least 95% from renewable sources in our generation portfolio until 2024 • Achieve a 10% reduction in our carbon intensity by 2024 • Communicate the steps we are taking to adapt to climate change • Invest R\$ 45 million in the development of electrical mobility technology until 2024 • Offer to our clients low carbon solutions for their energy transition • Invest R\$ 150 million in Energy Efficiency actions in Public Hospitals between 2020 and 2022 • Invest R\$ 200 million in Energy Efficiency actions toward low income communities until 2024 • Integrate sustainability aspects in the monitoring process for 100% of our critical suppliers until 2024 b) To be included in the portfolio of the Corporate Sustainability Index (ISE). The index contains a questionnaire about climate change issues, which influences the score. c) Carbon portfolio renewal: this target consists on exploration of opportunities related to carbon market and GHG emissions management that contribute to the company's better performance in the new economy. d) Incorporation of Sustainability criteria for critic suppliers' qualification routines. The qualification includes climate change issues.
Other, please specify (Energy efficiency manager)	Monetary reward	Efficiency target	The Energy Efficiency Manager has two commitments in the Sustainability Plan 2020-2024 related to climate change issues: a) Invest R\$ 150 million in Energy Efficiency actions in Public Hospitals between 2020 and 2022: Launched in 2019, the CPFL nos Hospitais ("CPFL in Hospitals") Program integrates energy efficiency initiatives and private social investment to drive improvements in the service provided by public health institutions, which are essential for the local population's quality of life. Using resources from the Energy Efficiency Program, the program will benefit 200 hospitals by installing solar panels and replacing existing lightbulbs with more energy-efficient LED lights, along with other efficient technologies. The expectation is that these actions will allow health institutions to save approximately R\$ 18 million a year by reducing their energy bills, an amount sufficient to pay for the medical care of 75,000 additional patients a year. In the long run, represented by the 20-year lifetime of solar panels, savings from lower energy bills could help provide treatment to more than 1.5 million people. The program also provides environmental benefits from prioritizing renewable energy produced from a solar source, not emitting GHG emissions. b) Invest R\$ 200 million in Energy Efficiency actions toward low-income communities until 2024: also using resources from the Energy Efficiency Program, we offer solutions to reduce energy consumption replacing of obsolete equipment to another more efficient technologies, in low-income communities, and we promote education initiatives, aimed at combating waste and promoting the safe use of energy. In this way, both goals aim to contribute to the awareness and change of people's behavior aligned to the low-carbon economy.
Other, please specify (Energy efficiency manager)	Monetary reward	Please select	The energy efficiency Manager has two goals: a) Investment in energy efficiency actions The Energy Efficiency Program (ANEEL – Regulatory Agent) seek opportunities and offer solutions to reduce energy consumption replacing of obsolete equipment to another more efficient technologies, in homes and businesses, including industries, hospitals, public agencies and others, and promoting education initiatives, aimed at combating waste and promoting the safe use of energy. In this way, this goal aims to contribute to the awareness and change of people's behavior aligned to the low-carbon economy. b) Energy saved in Energy Efficiency Projects This goal has such as value driver the Corporate Development, Growth na Innovation
All employees	Monetary reward	Efficiency target	The indicators related to the quality of electricity supply, SAIDI (System Average Interruption Duration Index) and SAIFI (System Average Interruption Frequency Index) are linked to the variable compensation of all Company employees. Since most power outages are caused by trees, windstorms, and lightning, which can damage installations that carry and distribute energy, the SAIDI and SAIFI indicators are directly related to climate change and the actions to improve them are related to climate change adaptation initiatives.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	1	We consider short term the aspects that happens in the year and that will affect current operations and yearly budget. This timeframe is in line with the annual review period of the Strategic Plan and Sustainability Plan. It also includes the result of the company's performance measurements and goals, which impact the variable remuneration program.
Medium-term	1	5	We consider medium-term the time-horizon adopted by the Strategic Plan and the Sustainability Plan. Both plans detail our objectives, actions, enablers and 5-year goals to be achieved by all the segments in which we operate.
Long-term	5	20	We consider long-term the aspects that will impact the future of our business and will guarantee the continuity of our operations.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

One common metric established by CPFL is evaluate each risks according to is potential impacts for the business unit in terms of % of EBITDA.

So, for example, if the impact is smaller than 1% of EBITDA, low risk. If the impact is between 1 and 2% of EBITDA, medium risk and, above this range, high.

It is important to mention that for each business unit, CPFL has different levels of acceptable risks, according to the participation of this segment in the group's portfolio.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term

Medium-term

Long-term

Description of process

Climate-related risks and opportunities management are fully integrated into the Risk Management process and CPFL's Strategic and Sustainability Plan 2020-2024. CPFL has a Corporate Risk Management Policy, approved by the Board of Directors, that provides models, indicators, and limits for risk exposure, and these are approved by the highest governance body, as well as laying out in detail the treatment and reports required should these thresholds be surpassed. The Policy also lays out the roles and responsibilities of each level of the corporate risk management structure. The approach when developing this management is based on four pillars - planning, execution, verification, and action. The indicators and limits are continuously evaluated and, when necessary, the Board of Executive Officers proposes changes and submits them to the Board of Directors for deliberation. 1. Planning: Identification and prioritization of strategic risks, based on opinions by Senior Management and Strategic Planning 2. Execution: Development of risk models and/ or indicators and definition of viable limits, which are approved by the Board of Directors 3. Verification: Management of limits through continuous monitoring of exposure 4. Action: Development and implementation of mitigation plans to keep exposure to possible risks within established limits, as well as reporting to interested parties in a timely manner The corporate risk map consolidates the main trends affecting our business and the main strategic risks to which CPFL Energia companies are exposed, organized into the following categories: Financial, Operational, Legal, Energy Market, Sector Regulation, Environmental, and Reputational. We also identify and assess climate risks through the process of reviewing and updating the Sustainability Plan and Platform. We follow the same process established by the Corporate Risk Management Policy and during the planning phase, we study the main trends, risks and opportunities in Sustainability (among them the Climate Change theme) and for the Energy Sector. Based on this, we establish indicators, limits and targets to be monitored periodically, as well as we establish Action Plans. In order to deal with such a complex scenario, we have structured a management model that establishes four fronts of action (see more information in Annual Report). 1. GHG management emissions and mitigation initiatives 2. Management of climate-related risks and opportunities 3. Innovation 4. Engagement and disclosure In 2019, this management system was driven by commitments made in our Sustainability Plan: i. Keep at least 95% from renewable sources in our generation portfolio until 2024 ii. Achieve a 10% reduction in our carbon intensity by 2024 iii. Communicate the steps we are taking to adapt to climate change iv. Offer to our clients low carbon solutions for their energy transition On the Management of climate-related risks and opportunities, we conduct studies on our negative (vulnerabilities) and positive impacts regarding climate change. The studies are always based on global models such as the IPCC's Assessment Reports and on local findings and focus on understanding risks and opportunities, especially those with the highest potential to create a significant change in our business operations, revenues or expenses in company and/or asset level. The scope of the assessment includes all the segments we act: generation, transmission, distribution and solutions. The main risks and opportunities identified are divided into the following categories: physical, regulatory and by other parameters (reputational, market, etc.) Some of them are reported in questions 2.3 and 2.4. In 2020, we are aligning these categories with the categorization used by TCFD, an initiative of which we are signatories. For each risk we encounter, we seek to develop adaptation measures to be implemented, ensuring our operation in the long term. Regarding the opportunities, we seek to develop new business model to offer the best products and solutions for our clients energy transition. All these issues and commitments in the Sustainability Plan 2020-2024 are mapped and evaluated every two months by the Sustainability Committee and quarterly by the Executive Board, Strategy and Processes Management Committee and Board of Directors.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Following ratification of the Paris Agreement in 2016, Brazil undertook, through the NDC, to reduce its greenhouse gas emissions by 37% below 2005 levels by 2025, with a subsequent indicative contribution of 43% reduction in greenhouse gas emissions by 2030. Specific goals for the energy sector make up: (a) Expand the use of renewable sources in addition to hydropower in the total energy matrix to a share of 28 to 33% by 2030; (b) Expand domestic use of non-fossil energy sources by increasing the share of renewable energy (in addition to hydropower) in electricity supply to at least 23% by 2030, including by increasing the share of wind, biomass and solar; (c) Achieve 10% efficiency gains in the electricity sector by 2030. Thus, Brazil's goals can be deployed for companies, requiring emissions' reduction. This represents a risk for the thermal plant of our portfolio, even though we have a predominantly renewable generation, since the generation dispatch of this plant is controlled by ONS. We seek to implement measures to mitigate this impact by seeking opportunities to expand power generation from low carbon renewable sources and by implementing energy efficiency actions. In our Sustainability Plan we have a goal to keep at least 95% from renewable sources in our generation portfolio until 2024. In this way, we constantly evaluate this risk and the impacts that can be caused to our operation and financial results.
Emerging regulation	Relevant, always included	CPFL has a renewable matrix of energy sources (in 2019, 98.3% of the energy generation came from clean sources), but also operate an oil thermal plant. For this composition, we are assessing the risks and opportunities of carbon pricing for the Brazilian Power Sector and by segment (Generation, Distribution, Commercialization and Services). As the generation dispatch is not under our control, we are closely following developments and results of PMR Brazil's project proposals on taxation and emissions trading that may directly impact our thermal generation. In addition, with the expectation that global agreements on GHG emissions will become mandatory from 2020, we have participated since 2016 in the Emissions Trading System developed by the FGV's Center for Sustainability Studies, which consists of a simulation of the cap-and-trade system. The regulatory context of the different markets where we operate are closely analysed by a dedicated corporate department, the Environmental and Sustainability Department. Together with the Energy Planning Department, we quantify the potential impacts on the company of changes to the different regulatory contexts, according to different scenarios. The regulatory agenda related with climate is a priority concern and is part of several analysis namely, investment analysis, budget and business plan.
Technology	Relevant, always included	The Brazilian power sector is undergoing transformations that will increasingly give the customer an unprecedented role in this business ecosystem. The greater demand for energy generated from renewable sources, the incorporation of new distribution technologies, and new models for self-production of energy are some of the factors that are leading to the redesign of our business model, increasingly focused on customers, on digitalization of processes and services, and on operational efficiency. These trends herald a sector that is undergoing a profound and unprecedented transformation, which requires that power companies be able to generate value in a decentralized, decarbonized, digitalized, and increasingly democratized model. If we do not keep up with these changes, we may be left behind, creating risks to the continuity of our operation. To avoid this risk and be a pioneer, for us innovation is the lever that boosts our connection to the energy sector's modernization trends, allowing us to anticipate opportunities and create solutions that increase our operational efficiency and customer satisfaction. We believe that innovation culture must be continuously strengthened among our employees through training, proposal of new ideas, and openness to experimentation. We have an exclusive area dedicated to technological innovation, which works on two project fronts: - Structuring Projects: focus on long-term projects that look at the future of the Electric sector, considering its main trends in technologies and business models focused on the low-carbon economy. On this front, among the projects in progress throughout the year, we can mention: Electric Mobility, Solar Roofs, Consumer Disaggregation, Storage. - Projects of Operational Excellence: focused on excellence in service delivery and focused on day-to-day activities, improving the company's resilience. On this front, among the projects in progress throughout the year, we can mention: mechanical pruning, Self-healing system, Ultrasound for inspection of wooden posts, Self-propelled post. Despite our energy matrix is already majority renewable, we continually strive to improve our operating efficiency for renewable generation technologies.
Legal	Relevant, always included	Climate-related legal risks, as penalties, compensations and agreements can arise from non-compliance with associated laws and regulation, or future compliance costs, for example, decommissioning of thermal power plants. We analyse the possibility of having this risk and the alternatives to mitigate it, since in Brazil there is no specific applicable legislation yet.
Market	Relevant, always included	We are exposed to market risk related to climate issues. Our operations can be impacted by volatility in generation volumes of renewables (especially hydro and wind), and in energy consumption, including energy efficiency. Some examples are: - Changes in climate patterns can compromise the power generation capacity, forcing generators to buy a more expensive energy in the market to meet the contracts signed with their buyer; - Reduction in electricity demand brought upon by new distributed energy and energy efficiency regulations and public policy targets. The market risks are closely analysed by a dedicated corporate department, which includes Strategy and Risks Departments.
Reputation	Relevant, always included	The energy sector, including electric utilities, is in the front of several debates, due to transformations that will increasingly give the customer an unprecedented role in this business ecosystem. We are exposed to reputational risk, both directly and indirectly. Just in the distribution sector, we have more than 9.8 million of clients, whose can be affected by extreme events, such as a power outage. Reputational risks are included in our corporate risk map, which is closely monitored by the Risk Department and by the Executive Officers and Board of Directors.
Acute physical	Relevant, always included	The intensification of extreme events (e.g. more severe or more frequent floods, extreme winds, draughts, rise in temperature), foreseen by IPCC scenarios, could affect CPFL's energy generation production as well as distribution. Drop in generation, damage to assets in operation (plants in operation, overhead lines, poles and substations) and power supply interruption can cause a negative financial impact. These kind of risks are assessed by our Energy Planning Department, Operation Department, Risks Department as well as Strategic Department. Prevention and adaptation measures are implemented. Some examples are: construction of a more reliable and secure network, with significant investments in expansion, automation, modernization and innovation of equipment; management of urban afforestation by replacing large trees with species that are better adapted to urban environments; generation portfolio diversification, in terms of location and energy sources, and so on.
Chronic physical	Relevant, always included	Changes in climate patterns, as reduction in total and seasonal availability of water; changes that affect the intensity, duration, direction and speed of winds, the incidence of solar radiation and also changes in the distribution of land suitable for agricultural cultivation and crop productivity for biomass can seriously compromise our energy generation, that is 98.3% from renewable sources, and our financial results. These kind of risks are assessed by our Energy Planning Department, Operation Department, Risks Department as well as Strategic Department. One of the adaptation measures adopted to guarantee generation is the diversification of the generation portfolio, both in relation to the energy sources and to the installed geographic locations. We also have developed an asset maintenance and operation plan that seeks to maximize operational efficiency - ensuring that assets add as much renewable energy as possible to the national energy matrix.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms
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Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

CPFL Energia installed capacity totals 4.3 gigawatts (GW) in assets spread out across four of the country's five regions, making us the third-largest privately held company in terms of generation and the Brazilian leader in renewable energy. In 2019, we generated 13.1 terawatt-hours (TWh), which represents an increase of 19.5% from the previous year. Despite the predominantly clean matrix, 1.7% of our generation comes from thermal sources (EPASA), an asset that we have 53.3% of stake. In a scenario of a carbon tax regulation, EPASA's operation will be negatively impacted, with an increase in operating costs.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

810000

Potential financial impact figure – maximum (currency)

8000000

Explanation of financial impact figure

In case of a carbon tax, the only CPFL's generation asset that could be impacted is EPASA, in which we have a 53.3% shareholding. Its operation occurs when there is a dispatch order by ONS (National System Operator), so it varies from one year to the next. Thus, to calculate the potential financial impact of a carbon tax, we use the value of USD 1 to 10 / tCO₂e per year, considering the exchange rate of R\$5.00.

Cost of response to risk

360000

Description of response and explanation of cost calculation

CPFL developed in 2019 a Sustainability Plan, which guides business development and investments in line with the company values and global trends to promote sustainable development. The corporate objective is to power the transition to a more sustainable and smart way of providing and using energy, maximizing our positive impacts in the community and value chain. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 commitments to contribute to economic, social, and environmental growth across the value chain. Among them, two commitments are related to emissions: a) Keep at least 95% from renewable sources in our generation portfolio until 2024; b) Reduce in 10% our carbon intensity indicator until 2024. We manage it by preparing our GHG Inventory, which allows us to know all emissions and calculate our indicators, such as the risk of having a carbon taxation (considering the price of USD 1 - 10 / tonCO₂e). These indicators are part of the Sustainability Platform, our management tool related to the Strategic and Sustainability Plan. They are monitored on a monthly basis and have a quarterly report to the Board of Directors. To calculate the cost of response, we consider the annual cost to elaborate and audit GHG inventory, as well as the cost with the specific organizational structure, fully dedicated to this management (two employees).

Comment

The financial impact figure will only exist if Brazil implements a carbon tax. However, the management cost is permanent, since CPFL believes that identifying the processes associated with GHG emissions, through the GHG inventory, is the first step in allowing us to plan our long-term performance and mitigate impacts related to this aspect.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical	Changes in precipitation patterns and extreme variability in weather patterns
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Primary potential financial impact

Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Structural decrease in hydro generation productivity. IPCC (Intergovernmental Panel on Climate Change) long-term scenarios forecast a relevant decrease in average annual precipitation in South America. An increase in temperature will as well impact the water competitive uses. Hydro generation is an important source of value for CPFL Energia (49% of CPFL energy production). Because of this, one of the main risks for energy generators related to climate change issues is related to the Generation Scaling Factor (GSF). In a scenario of an unfavourable hydrological regime (due to significant changes in precipitation patterns), hydroelectric plants are obliged to buy energy from other sources (for example, thermal) to honour their contracts, which can generate additional costs for the entire system. We renegotiated this risk for most of our plants, but we are still exposed for some assets.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

50000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

GENERATION SCALING FACTOR (GSF) is the ratio between Total generation/ Physical guarantee for all the hydro plants in the MRE. If the ratio is less than "1", all of the companies are obligated to buy energy in the spot market to cover their gaps. The MRE is a financial mechanism for sharing the financial risks associated with the operation of the National Interconnected System (SIN). It covers all the hydroelectric power plants subject to centralized orders from the National System Operator (ONS). In operating terms, the MRE ensures that, in the CCEE accounting process, all participating plants receive their levels of physical guarantee, irrespective of how much electricity they actually generate, provided that the total generation in the MRE is not lower than the total physical guarantee of the SIN. The system involves reallocating surpluses from generators that produce more than their physical guarantees to those that produce less.

Cost of response to risk

3900000

Description of response and explanation of cost calculation

The MRE is a financial mechanism for sharing financial risks of hydroelectric power plants associated with the operation of the National Interconnected System (SIN). Provisional Measure No. 688/2015 took into account the low level of rainfall in the country since the end of 2012, allowed the renegotiation of hydrological risk in electricity generation and its transfer to the consumer through the payment of a risk premium. For CPFL companies, the risk assumed (payed) totaled R\$ 3.9 MM in 2019. Besides this, CPFL manages this risk also through a diversified generation portfolio in terms of technologies, energy sources (hydro, wind, biomass and solar) and geographies. Geographic diversification significantly reduces the risk, as structural reduction in precipitation is not likely to occur in all geographies and with same magnitude.

Comment

Major risk mitigation process is CPFL's diversification strategy for renewable generation portfolio growth and continued search for efficiency gains. The company, leader in its segment in Brazil, mapped out a pipeline of new businesses capable of adding 2.9 GW to installed capacity, amid a highly pulverized sector with opportunities for acquisitions and development of Greenfield projects. For the period of 2020-2024 CPFL will invest R\$ 1.158 billion dedicated to the generation segment.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical	Changes in precipitation patterns and extreme variability in weather patterns
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Primary potential financial impact

Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Structural changes in climate patterns, IPCC (Intergovernmental Panel on Climate Change) long-term scenarios forecast relevant changes in climate patterns, such as changes in rainfall regime, wind intensity, solar incidence and land distribution for cultivation and agricultural productivity. These factors can impact our generation by hydro, wind, solar and biomass sources, respectively. Some examples are listed: a reduction in precipitation may affect our plants' availability for generating electricity, in addition to causing conflicts over the use of water for other purposes. Changes that affect the intensity, duration, direction and speed of winds can make generation in wind complexes more unstable. Changes in precipitation and temperature patterns impacts cloud formation and can reduce the incidence of solar radiation, compromising the generation capacity of solar assets. Renewable generation is an important source of value for CPFL, corresponding to approximately 98.3% of our energy generation. The change in the wind regime is already a reality and has an impact on the generation of company revenues. In 2019, generation decreased 4.6% (-191.5 GWh) in relation to 2018. Despite the improvement in the availability of the farms in 2019, the lower incidence of winds in Ceará and Rio Grande do Norte caused a reduction in generation between the years compared.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

70000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

In 2019, wind generation decreased 4.6% (-191.5 GWh) in relation to 2018. Despite the improvement in the availability of the farms in 2019, the lower incidence of winds in Ceará and Rio Grande do Norte caused a reduction in generation between the years compared. Note that the first quarter of 2019 saw the worst wind performance in the last 6 years of measurements at the wind farms of CPFL Renováveis located in Northeastern Brazil, chiefly due to a combination of climatic phenomena typical to summer and the movement of the Intertropical Convergence Zone over the Northeastern and Northern coast. This atmospheric condition persisted in the second quarter, reducing the wind speed over the region until mid-May. In the third quarter of 2019, atmospheric conditions began to return to normal, favoring a gradual return, especially in Ceará,

where atmospheric conditions contributed to a strengthening of the breeze effects on the state coast, favoring more than expected wind in the region. On the other hand, Rio Grande do Norte continued to suffer from the action of short-lived atmospheric systems, which affected the best wind performance observed in the region. In 2019, the net revenue of CPFL Renováveis decreased compared to 2018 and one of the factors related to this is the lower generation of wind complexes (-R\$ 70 million).

Cost of response to risk

1158000000

Description of response and explanation of cost calculation

CPFL manages this risk through a diversified generation portfolio in terms of technologies, energy sources (hidro, wind, biomass and solar), geographies and continued search for efficiency gains. Geographic diversification significantly reduces the risk, as structural reduction in precipitation is not likely to occur in all geographies and with same magnitude. The company seeks to grow. They mapped out a pipeline of new businesses capable of adding 2.9 GW to installed capacity, amid a highly pulverized sector with opportunities for acquisitions and development of Greenfield projects. In addition to the development of new projects, CPFL Renováveis is developing an asset maintenance and operation plan that seeks to maximize operational efficiency - ensuring that assets add as much renewable energy as possible to the national energy matrix. In the past four years, the company has executed its Avançar (Advance) Plan, which includes a series of initiatives to improve plant operations, standardize processes, train employees, and implement new technological tools. Management of these assets is carried out at the Integrated Operation Center (COI), located in the municipality of Jundiaí, São Paulo. In 2019, this structure was reinforced with the creation of the Asset Monitoring Center, an advanced engineering unit that monitors the main pieces of equipment through sensors installed at the generation units, which communicate remotely with the operating systems. This solution allows CPFL Renováveis to take proactive steps to ensure the plants' availability and reliability. Our expanding use of data analysis tools and machine learning enables us to identify possible failures and create more assertive preventive maintenance plans, reducing costs and decreasing downtime. The company is also handling operations in house, generating gains from greater control over assets and better performance evaluation. For the period of 2020-2024, the capex for the generation segment is R\$ 1,158 million.

Comment

Major risk mitigation process is CPFL's diversification strategy for renewable generation portfolio growth and continued search for efficiency gains. The company, leader in its segment in Brazil, mapped out a pipeline of new businesses capable of adding 2.9 GW to installed capacity, amid a highly pulverized sector with opportunities for acquisitions and development of Greenfield projects. For the period of 2020-2024, CPFL will invest R\$ 1,158 million dedicated to the generation segment.

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Increased severity and frequency of extreme weather events such as cyclones and floods
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Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Precipitation extremes, floods, wildfires and landslides – frequently associated also with extreme winds – can have a negative impact in several CPFL business activities, in particular electricity distribution, resulting in damage to assets in operation, causing a series of impacts, such as interruption in energy supply, mainly due to the contact of the vegetation with the electrical networks ("interruption cause-tree"). These interruptions can worsen two indicators that measure the quality of the service: SAIDI (duration of interruptions) and SAIFI (frequency of interruptions). In order to maintain quality in the provision of the public electricity distribution service, ANEEL requires that concessionaires maintain a standard of continuity and quality of the service. For this purpose, edits limits for these indicators. When exceeding the established limits, distributors are liable to pay fines to compensate customer service. These factors, in addition to the other costs of reconnecting and maintaining the network, lead to increased costs for the company, generating negative impacts for cash.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

25000000

Potential financial impact figure – maximum (currency)

40000000

Explanation of financial impact figure

The financial impacts are related to the cost of energy interruption due to the network's contact with vegetation. The cost considers the values to restore the power grid and the range considers an average of amounts spent per year. The values may vary according to the occurrence and intensity of climatic events, with the network reinforcement actions and afforestation programs implemented and they tend to decrease in the long term.

Cost of response to risk

2000000

Description of response and explanation of cost calculation

We have invested in mitigation and adaptation actions that minimize our exposure to risks and ensure a better level of readiness to deal with climate change. In regard to our DisCos, our vision is to promote a more reliable and secure network, with investments in expansion, automation, equipment modernization and innovation. To this end, in 2019 we invested R\$ 2 billion to improve the quality of distribution services, and over the next five years we plan to invest R\$ 11.6 billion. The focus of this action is related to the vegetation management. Since 2015, we have carried out the Arborização+ Segura project, which replaces large trees with species that are better adapted to urban environments. Each year the initiative is expanded to more cities in our concession areas through partnerships with local city governments. In the past year, the

project reached 37 municipalities in the states of São Paulo, Paraná and Rio Grande do Sul. In the past five years we invested more than R\$ 2 million in urban reforestation through the replacement of 3,400 trees and the donation of 20,000 seedlings. In addition to replacing trees, we develop environmental education campaigns in schools, guiding teachers and educators on how they can communicate with students about how to care for the plants properly. This project contributes both to expanding green coverage in urban areas and to creating a financial return for the company in terms of avoided network-maintenance costs. We also highlight projects that incorporate innovation into management solutions. This is the case of the Weather Translator System (WeTS), which cross-references data from weather forecasts with our operational impact and criticality levels, in proportion to the number of interrupted customers. The system uses advanced artificial intelligence techniques and establishes 24-hour and 72-hour scenarios for our entire concession area. Implemented in 2019 at the DisCos' Operations Centers, the initiative has helped with the planning and allocation of teams in case of storms. In 2020, WeTS will be improved thanks to a solution being developed by Pluvi.ON, startup that will use low-cost weather stations to provide data that will provide detailed information to field operations. To calculate the cost of response to the risk, we considered the investment realized in Arborização + Segura project, because the vast majority of distribution interruptions are due to the vegetation contact with the distribution networks.

Comment

For the period of 2020-2024 CPFL will invest R\$ 11.5 million in distribution segment, to continue offering services with more technology, efficiency and quality. The investments realized with the Arborização + Segura Project, together with other investments to improve the network tend to reduce the financial impact of energy interruptions.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Energy source

Primary climate-related opportunity driver

Participation in carbon market

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Compliance with regulatory requirements and the emergence of new international agreements can create opportunities for CPFL. Our operating model creates opportunities for the sale of carbon credits and renewable-energy seals. Based on this, in 2018 we structured our low carbon portfolio and created a centralized portfolio-management structure for these products. In relation to carbon credits, we have 11 projects registered under Clean Development Mechanism (CDM) and three projects aligned with Verified Carbon Standard (VCS) related to hydro and wind generation projects. We have been acting in several fronts to be prepared for the market. Therefore, the establishment of a cap-and-trade trading market in Brazil or internationally, along the lines of the CDM, for example, could lead CPFL to position itself as an important supplier of emission reduction certificates, increasing revenues for the company.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

4700000

Potential financial impact figure – maximum (currency)

47500000

Explanation of financial impact figure

The potential financial impact is related to the potential for generating carbon credits. We have 11 projects registered under the Clean Development Mechanism (CDM), with a potential to generate approximately 950 thousand of carbon credits per year. To calculate the potential of revenues, we consider a range of variation in the price of credit ranging from USD1 to USD10 / credit per year, with an exchange rate of approximately R\$ 5.00.

Cost to realize opportunity

1000000

Strategy to realize opportunity and explanation of cost calculation

In relation to carbon credits, we have 11 projects registered under Clean Development Mechanism (CDM) and three projects aligned with Verified Carbon Standard (VCS) related to hydro and wind generation projects. We have been acting in several fronts to be prepared for the market. In 2018, we organized the largest auction of carbon credits in the voluntary market (VCS) in Brazil, based on Baesa assets. Carried out on a web platform, four big players in the Brazilian, Swiss, Indian and English markets participated. We are also submitting a Ceran project to the new UN Sales Platform, Go Climate Neutral Now. In 2019, we initiated the process of renewing the carbon

credit-generation period of five CPFL Renováveis CDM projects, and in 2020, we started assessing a project that will generate new credits for trading. We also have been participating in the Emission Trading System since 2017, an initiative created by the FGV together with a group of companies, that consist of a simulation of the cap and trade system, with the idea of training the private sector to use this economic instrument so that it can provide the Brazilian government with suggestions on how to implement a similar system in Brazil. The estimated costs to realize the opportunity is related to the fees that we need to pay to the UNFCCC to issue all the carbon credits that can be originated per year.

Comment

The associated costs will exist whenever this opportunity exists. In 2019, CPFL approved a Sustainability Plan 2020-2024, which establishes guidelines so that the company can "provide sustainable, affordable and reliable energy at all times, making people's lives safer, healthier, and more prosperous in the regions where we operate." The corporate objective is to power the transition to a more sustainable and smart way of providing and using energy, maximizing their positive impacts in the community and value chain. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. One of them is related to this opportunity: Offer to our clients low carbon solutions for their energy transition (as IRECs, carbon credits, energy efficient actions, etc.).

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Returns on investment in low-emission technology

Company-specific description

Our business model has great potential to contribute to a cleaner energy matrix and one that is less dependent on fossil fuels. One commitment we make in our Sustainability Plan is ensuring that through 2024 at least 95% of our generation portfolio continues to consist of renewable sources. CPFL has a key competitive advantage in seizing renewables growth opportunities, given its large experience and pipeline of projects. Our installed capacity totals 4.3 gigawatts (GW) in assets spread out across four of the country's five regions, making us the third-largest privately held company in terms of generation and the Brazilian leader in renewable energy. In 2019, we generated 13.1 terawatt-hours (TWh), which represents an increase of 19.5% from the previous year. Of this total, approximately 98.3% came from renewable sources. The company plans to grow in this segment. Our Strategic Plan 2020-2024 includes the directive: "Growth: develop projects that help us grow, while also looking for acquisition opportunities".

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

45000000

Potential financial impact figure – maximum (currency)

55000000

Explanation of financial impact figure

The potential financial impact figure is related to the gross revenue that we expect to have annually when Cherobim SHPP and Gameleiras Wind Complex start the operation. The potential gross revenue was estimated based on a lot of assumptions, such as: auction price in which each project has been sold, installed capacity multiplied and capacity factor.

Cost to realize opportunity

600000000

Strategy to realize opportunity and explanation of cost calculation

To grow in renewable energy generation, in 2019, we realized the integration of CPFL Renováveis into our business structure. This is strategic, as is the consequent capture of synergies that leverage our investment capacity in this segment. The company, the leader in its segment in Brazil, mapped out a pipeline of new businesses capable of adding 2.9 GW to installed capacity, amid a highly pulverized sector with opportunities for acquisitions and development of Greenfield projects. Part of this growth is already underway, with the construction of two projects that were successfully bid on in 2018: SHPP Cherobim (+ 28 MW) and the Gameleiras Wind Complex (+ 81.7 MW), comprising four wind farms. In 2019, we obtained the installation license for the two new plants and complied with the projected timeline. Our expectation is that we will be able to begin operations at the Wind Complex ahead of schedule, a relevant strategy to ensure its economic competitiveness and return on investment. The cost to response to the opportunity is R\$ 600 million for the period of 2020-2024, and it is associate to the investments that we are going to do to construct these two assets (Capex).

Comment

In 2019, CPFL approved a Sustainability Plan 2020-2024, which establishes guidelines so that the company can "provide sustainable, affordable and reliable energy at all times, making people's lives safer, healthier, and more prosperous in the regions where we operate." The corporate objective is to power the transition to a more sustainable and smart way of providing and using energy, maximizing their positive impacts in the community and value chain. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. Two of them are related to this opportunity: Keep at least 95% from renewable sources in our generation portfolio until 2024 and reduce in 10% our carbon intensity indicator until 2024.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Business opportunity in a scenario of a low carbon economy transition and with changes in consumption patterns and customers habits. Electricity will be crucial to decarbonise the world economy and the sector is set to undergo a major transformation towards renewables, decentralized generation and smart consumption. This structural change in energy production and consumption patterns brings about new growth opportunities for CPFL, especially in energy services, renewable distributed generation and electric mobility. To meet these new consumers' different energy demands, we have launched a new brand – CPFL Soluções, a unique platform that offers integrated solutions that generate value and increase customer competitiveness, taking advantage of all opportunities offered in the new energy market and considering all the experience we have in the sector. In our Strategic Plan 2020-24, there is also directive for this segment: "Growth through the implementation of new market business models".

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

237900000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

CPFL Soluções has been achieving positive results with the delivery of projects serving more than two thousands of customers across the country in several segments. In 2019, the EBITDA achieved R\$239.9 million, growing 6% in relation to 2019.

Cost to realize opportunity

233000000

Strategy to realize opportunity and explanation of cost calculation

CPFL Soluções, our new brand, is a unique platform that offers integrated solutions that generate value and increase customer competitiveness, taking advantage of all opportunities offered in the new energy market. The portfolio includes: - Energy Management: Complete consultancy so that customers can better manage their energy, with greater savings and predictability in their bills - Free Energy Market: Freedom to choose the energy supplier and negotiate prices, quantities, energy sources and commercial conditions - Distributed Generation: Self-production of energy from renewable sources - Energy Efficiency: Solutions to improve energy productivity and reduce costs and environmental impacts - Energy Services and Infrastructure: Diagnose, provide solutions, and execute electrical installation projects: construction, operation, maintenance, and retrofit In 2019, the unit achieved positive results with the delivery of projects serving customers across the country in segments including data centres, pulp and paper, automobiles, and wind power generation, among others. The cost to respond to the opportunity is R\$ 233 million for the period of 2020-2024, and it is associate to the investments that we are going to do to expand and improve our energy solutions (Capex).

Comment

In 2019, CPFL approved a Sustainability Plan 2020-2024, which establishes guidelines so that the company can "provide sustainable, affordable and reliable energy at all times, making people's lives safer, healthier, and more prosperous in the regions where we operate." The corporate objective is to power the transition to a more sustainable and smart way of providing and using energy, maximizing their positive impacts in the community and value chain. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. One of them is related to this opportunity: Offer to our clients low carbon solutions for their energy transition (as IRECs, carbon credits, energy efficient solutions, distributed energy solutions, etc.).

Identifier

Opp4

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Markets

Primary climate-related opportunity driver

Access to new markets

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

IPCC (Intergovernmental Panel on Climate Change) long-term scenarios forecast a relevant increase in temperature. This scenario will lead changes in consumption patterns, such as increased use of ventilation and cooling systems, resulting in increased demand for energy. The results suggest that residential electricity demand in Brazil may increase in response to the projected rise in temperature. Considering that we are the second largest company in the electricity distribution segment in Brazil in terms of the amount of energy sold, with a 14% share of the national market, this opportunity could bring a substantial increase in the Company's revenue. Our four

companies operate in the states of São Paulo, Rio Grande do Sul, Minas Gerais and Paraná, with a concession area that covers 687 municipalities and serves approximately 9.8 million customers. In 2019, we distributed approximately 68.1 TWh of energy in our concession areas, up 1.3% from the previous year. During the same period, our customer base increased by 1.8%.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

3000000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The 2030 PDE (Ten-Year Energy Expansion Plan) estimates a potential load increase of 3.7% from 2030. If EPE's energy consumption growth forecasts are realized, there would be a potential revenue increase for distributors of around R\$ 3 billion.

Cost to realize opportunity

11600000000

Strategy to realize opportunity and explanation of cost calculation

Our strategic vision is to promote the construction of a more reliable and secure network, with significant investments in expansion, automation, modernization of equipment, and innovation to generate more efficient consumption of energy resources. To this end, in 2019 we invested R\$ 2 billion to improve the quality of distribution services for customers, and over the next five years we plan to invest R\$ 11.6 billion on projects that will improve the attendance and the quality of services provided to customers in our concession area (this is the cost to realize the opportunity). One of the main fronts on which we are working to offer an increasingly reliable network and to continuously improve our operations with technology and innovation is the ADMS Program (Advanced Distribution Management Systems). The implementation of the new platform at the DisCos' Integrated Operation Centers in São Paulo and Rio Grande do Sul has been underway since 2018 and is expected to be completed by 2022, with total investment of R\$ 47 million. This solution will improve the quality of our distribution networks' operations. The high degree of process digitalization and automation, integrating different operating systems, creates opportunities for our specialists to expand data analysis in order to identify and propose structural improvements, while autonomous mechanisms organize the various tasks to ensure energy supply and meet customer demands. Together with the ADMS, we carried out several other strategic planning projects to transform our operations. Since 2018, CPFL Santa Cruz has been running a pilot project to install smart meters throughout the municipality of Jaguariúna (São Paulo), with a population of approximately 51,000 inhabitants. As of last year, about 20,300 new pieces of equipment had been swapped out, and by August 2020 this phase of the project will be completed, with a total of 22,700 meters installed. One of the main advantages smart meters offer our customers is the possibility of monitoring energy consumption through applications that indicate the days and times when there is greater consumption. With this information, consumers can adapt their daily habits to secure more efficiency and savings. In 2019, we launched a beta version of a tool with this functionality for user tests and evaluations.

Comment

In 2019, CPFL approved a Sustainability Plan 2020-2024, which establishes guidelines so that the company can "provide sustainable, affordable and reliable energy at all times, making people's lives safer, healthier, and more prosperous in the regions where we operate." The corporate objective is to power the transition to a more sustainable and smart way of providing and using energy, maximizing their positive impacts in the community and value chain. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. Some of them are related to this opportunity: Reach 100% of Group A clients with telemetering until 2020 and Invest R\$ 350 million in distribution network automation until 2024.

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative and quantitative

C3.1b

(C3.1b) Provide details of your organization’s use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
RCP 2.6 RCP 4.5 RCP 6 RCP 8.5 Other, please specify (SRES)	The IPCC AR4 scenarios (RCPs 2.6, 4.5; 6.0; 8.5) are used to analyse the impacts of climate change on our operations and the alternative paths for the energy sector. In line with these scenarios, we studied market trends in eighteen themes such as: decarbonization of the energy matrix, adaptation to climate change, carbon pricing, decentralized energy generation, smart grid, electrification, electricity mobility, energy efficiency, biodiversity, water management, impacts on the community, circular economy, digitalization, sustainable supply, employee development, diversity, health and safety and ethics and transparency. With the construction of the 2020-24 Sustainability Plan, it became more tangible to measure investments and financial impacts in scenarios of increased frequency of extreme weather events and possible interference in our energy generation and distribution operations. With our state-of-the-art asset management structure, we achieved an average availability of 96.1% for all generation assets in 2019, in line with our performance in the previous year. The maintenance of this high index is the result of our efforts aimed at efficiency and optimization of operations, mainly in monitoring, maintenance and operation. Some initiatives that stand out include the Integrated Operation Center (COI) and predictive technology projects, with machine learning tools that help in the early identification of any equipment susceptible to failures.
Other, please specify (IPCC Special Report Global Warming of 1.5 °C)	This Special Report shows the potential synergies and trade-offs between the sectorial portfolio of climate change mitigation options and the Sustainable Development Goals (SDGs). The SDGs serve as an analytical framework for assessing the different dimensions of sustainable development, which extend beyond the 2030 SDG target timeframe. Information on the net impacts of mitigation on sustainable development at 1.5 ° C is only available for a limited number of SDGs and mitigation options due to a limited number of studies that have assessed the benefits of the impacts of climate change avoided. 1.5 ° C pathways for the SDGs and the co-effects of adaptation for mitigation and the SDGs. Two mitigation options are very important for our low carbon plan: a) Energy supply with a focus on renewable energy. b) The energy demand sector comprises behavioural responses, fuel changes and efficiency options in the transport, industry and construction sectors. All of these scenarios are the basis for CPFL’s strategic growth plan. In 2019 we approved the 2020-2024 Sustainability Plan whose driver is provide sustainable, accessible and reliable energy to all walks of life, and enhance a safer, healthier and prosperous life of people in regions where we operate. Our commitments are divided into three pillars: Sustainable energy, Smart solutions and Shared value. Of the 15 commitments, the ones that have the highest correlation with the studied scenarios are: - Keep at least 95% from renewable sources in our generation portfolio until 2024 - Reduce in 10% our carbon intensity indicator until 2024 - Invest R\$ 350 million in distribution network automation until 2024 - Invest R\$ 45 million in the development of electrical mobility technology until 2024 - Offer to our clients low carbon solutions for their energy transition For more information, see our Annual Report at: http://www.relatorioanualcpfl.com.br/en/index.html
IEA Sustainable development scenario	The IEA scenarios point to a renewable matrix energy transition. In the last year, our performance in the generation segment was strengthened with the integration of CPFL Renováveis, the largest generator of renewable energy in the country, to our portfolio of assets. It is allowing us to take advantage of synergies, reduce costs, and boost efficiency, fostering continuity of our investments in renewable generation projects. Thanks to this operation, our installed capacity now totals 4.3 gigawatts (GW) in assets spread out across four of the country’s five regions, making us the third-largest privately held company in terms of generation and the Brazilian leader in renewable energy. In 2019, we generated 13.1 terawatt-hours (TWh), which represents an increase of 19.5% from the previous year. Of this total, approximately 98.3% came from renewable sources. Our strategic agenda is based on organic growth with a focus on renewables. We have three public commitments from 2020-2024 Sustainability Plan that are highly synergistic with IEA scenarios: - Keep at least 95% from renewable sources in our generation portfolio until 2024 - Reduce in 10% our carbon intensity indicator until 2024 - Offer to our clients low carbon solutions for their energy transition Other initiatives that support CPFL’s low carbon strategies are services with integrated solutions in energy management, energy efficiency, distributed generation according to CPFL Soluções.
Nationally determined contributions (NDCs)	Brazil committed to reduce greenhouse gas emissions by 37% below 2005 levels in 2025. For the energy sector, particularly, the target is to achieve 45% of renewables in the energy mix by 2030, including: - Expanding the use of renewable energy sources other than hydropower in the total energy mix to between 28% and 33% by 2030; - Expanding the use of non-fossil fuel energy sources domestically, increasing the share of renewables (other than hydropower) in the power supply to at least 23% by 2030, including by raising the share of wind, biomass and solar; - Achieving 10% efficiency gains in the electricity sector by 2030. Our strategic agenda is based on organic growth with a focus on renewables. We have some public commitments from 2020-2024 Sustainability Plan that are highly synergistic with Brazil’s NDC: - Keep at least 95% from renewable sources in our generation portfolio until 2024 - Reduce in 10% our carbon intensity indicator until 2024 - Reach 100% of Group A clients with telemetering until 2020 - Invest R\$ 350 million in distribution network automation until 2024 - Invest R\$ 45 million in the development of electrical mobility technology until 2024 - Offer to our clients low carbon solutions for their energy transition Our objective is power the transition to a more sustainable and smart way of providing and using energy, maximizing our positive impacts in the community and value chain.
Other, please specify (National Institute for Space Research (INPE))	The National Institute of Space Research (INPE) coordinated the construction of models of regional climate scenarios, evaluating the different scenarios proposed by the global coupled models of IPCC AR4, regionalization considered the high-resolution Eta numerical model in South America. It produced scenarios of impacts of climate change in various socio-economic sectors (agriculture, energy, water resources, etc.), indicating vulnerability to risks in the form of probability. Available projections are about precipitation anomalies and temperatures for the periods 2010- 2040, 2041-2070 and 2071-2100 (More information at: http://pnud.cptec.inpe.br/index.html). We used the temperature anomaly projection for the 2010-2040 cycle to guide discussions on portfolio diversification in renewable energy generation and to help preparing our network more robust to withstand weather conditions. Our strategic agenda is based on organic growth with a focus on renewables. We have some public commitments from 2020-2024 Sustainability Plan that are highly synergistic with INPE scenarios: - Keep at least 95% from renewable sources in our generation portfolio until 2024 - Reduce in 10% our carbon intensity indicator until 2024 - Reach 100% of Group A clients with telemetering until 2020 - Invest R\$ 350 million in distribution network automation until 2024 - Invest R\$ 45 million in the development of electrical mobility technology until 2024 - Offer to our clients low carbon solutions for their energy transition Our objective is power the transition to a more sustainable and smart way of providing and using energy, maximizing our positive impacts in the community and value chain.

C3.1d

(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Risks and opportunities related to the growing demand from customers for products and services with a low carbon footprint have influenced our product-related strategy and product portfolio. In 2018, we launched CPFL Soluções, CPFL Energia's newest brand. With operations throughout the country, it has a portfolio of integrated solutions in energy management and trading, energy efficiency, distributed generation, energy infrastructure, and consulting services. The company has a go to market strategy to serve energy solutions to consumers. In 2019, the unit achieved positive results with the delivery of projects serving customers across the country in segments including data centers, pulp and paper, automobiles, and wind power generation, among others. We have the ambition to grow even more on this front in the coming years. Still in line with this scenario, it is also worth highlighting our strategy of growing in renewable generation. In this regard, our Executive Board opted for the strategic decision to carry out integration of CPFL Renováveis into our business structure is strategic, as is the consequent capture of synergies that leverage our investment capacity in this segment. The company, the leader in its segment in Brazil, mapped out a pipeline of new businesses capable of adding 2.9 GW to installed capacity, amid a highly pulverized sector with opportunities for acquisitions and development of greenfield projects. Part of this growth is already underway, with the construction of two projects that were successfully bid on in 2018: SHPP Cherobim (+ 28 MW) and the Gameleiras Wind Complex (+ 81.7 MW), comprising four wind farms.
Supply chain and/or value chain	Yes	We have developed and are implementing a strategic supply chain plan, with long-term projects and objectives to improve the management of our supply chain in the logistics, sales, qualification and supplier development sectors. As renewable energy is one focus of our growth strategy, one highlight of our supplier management strategy concerns the Gameleira Wind Complex, which is being built by CPFL Renováveis in Rio Grande do Norte. The project includes the installation of the largest wind turbines ever (in terms of size and power) in our operations. The contracting strategy – based on building solid partnerships with suppliers – allowed us to overcome logistical challenges, maximizing actions and investments in favour of sustainable development. We also have developed a structured model to assess and monitor our suppliers' performance. Starting with the process of registering suppliers on our database, we evaluate companies' financial aspects, technical performance, security, legal and documentary compliance, as well as their ethical alignment with our values. When suppliers are hired, we assess whether they are highly critical to operations or if they offer reputational risks for the company. Companies that fall under these conditions are classified as strategic and are included in our performance qualification platform - Supply Base Management (SBM). With this tool, we can monitor companies' operational performance monthly across six main criteria - technical, documentary, legal, security, financial, and ethical. Based on this analysis we come up with an evaluation grade, which directs partners to develop improvement plans and also supports future selection and hiring processes. In order to reinforce our supplier development strategy and guarantee a performance with low operational risks due to issues such as climate change, we assume in our 2020-2024 Sustainability Plan the commitment to integrate sustainability aspects in the monitoring process for 100% of our critical suppliers until 2024.
Investment in R&D	Yes	Innovation is a lever for business growth and diversification of our portfolio. Our projects increase operational efficiency and identify long-term opportunities. Thus, over the last years, we have directed our investments to develop low carbon products and technologies, as well as adaptation solutions: • Solar Roofing Project: We studied the possible impacts of the massive entry of solar photovoltaic generation into the distribution network. The study provided a real laboratory, with 231 installed systems, that enabled the comparison of network conditions before and after the entry of the distributed generation. • Living Lab: Barão Geraldo is a neighbourhood in Campinas – where about 50,000 people live. We chose this region to create one of the largest living laboratories for testing new technologies in the sector. This is a real platform to build bridges to a future of renewable energy and less carbon intensity.. The technologies studied are electric mobility, solar energy, energy storage, smart consumption and smart campus. • Electric mobility projects: One of the biggest opportunities in our sector is in electric mobility. This vision guided our creation of the Emotive program, an R&D initiative that during a five-year period has evaluated possible business models for battery recharging and customer service. In 2020, our strategic vision will include continued work on the topic. Our Sustainability Plan includes investment of R\$ 45 million in the development of technologies for electric mobility through 2024, in fronts: creation of an Electric Mobility Services Platform; Develop a new charging station concept; Electrification of 100% of CPFL Piratininga's operational fleet in Indaiatuba city; and reutilization of used electric-vehicle batteries (Second life) • Weather Translator System (WeTS) and pluviON: adaptation projects, which cross-references data from weather forecasts with our operational impact and criticality levels, in proportion to the number of interrupted customers. The system uses advanced artificial intelligence techniques and establishes 24-hour and 72-hour scenarios for our entire concession area. The initiative has helped with the planning and allocation of teams in case of storms. In 2020, WeTS will be improved thanks to a solution being developed by Pluvi.ON, a startup that usea low-cost weather stations to provide data.
Operations	Yes	Extreme weather events can affect our operation, causing increased operating costs, as well as reputational impacts for our distributors due to interruptions in energy supply services. As a result, our strategic vision is to promote the construction of a more reliable and secure network, with investments in expansion, automation, modernization of equipment, and innovation. To this end, in 2019 we invested R\$ 2 billion and over the next five years we plan to invest R\$ 11.6 billion in our concession area. One of the main fronts on which we are working to offer an increasingly reliable network and to continuously improve our operations with technology and innovation is the ADMS Program (Advanced Distribution Management Systems). The implementation of the new platform at the DisCos' Integrated Operation Centers has been underway since 2018 and is expected to be completed by 2022, with total investment of R\$ 47 million. With the completion of the ADMS, we will transform the way we manage and act on our networks. We will make progress on self-healing actions, in locating interruptions and dispatching of maintenance teams, in the identification of technical losses, and other activities that we carry out daily to maximize operational quality. On the engineering front, our investments are directed towards the installation of more intelligent and remote-controlled equipment. Automatic reclosers, capable of resuming operation automatically when there are improper interventions in the network, are an example of this progress. In 2019, we reached 11,400 reclosers connected to our network. One of the commitments we assume in our Sustainability Plan is to invest a total of R\$ 350 million in network automation by 2024. This will allow us to achieve significant reductions in supply interruptions and in dispatching teams on maintenance calls, reducing environmental impacts of vehicle use and fuel consumption. Other impact is related to carbon pricing, which can also increase operational costs. This has led our Board's strategic decision to commit to keep at least 95% from renewable sources in our generation portfolio until 2024 in our Sustainability Plan. Today we are able to generate and sell carbon credits and renewable energy seals, which allows us to choose the best options to offset our emissions, as well as generate additional revenue from these products.

C3.1e

(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Capital expenditures Acquisitions and divestments Access to capital Assets Liabilities	<p>- Capex Historically, CPFL encourages environmental and sustainability practices and makes investments to improve its operation. Over the past three years, we have invested more than R\$ 5.5 billion to promote the construction of a more reliable and secure network, with significant investments in expansion, automation, modernization of equipment, and innovation to generate more efficient consumption of energy resources. Regarding the generation segment, we have been investing in dam safety, which encompasses improvements in maintenance processes, such as the review of Emergency Action Plans (PAEs). The company considers the high magnitude of these impacts. - Acquisition Climate-related opportunities have the potential to impact CPFL's acquisitions decisions, namely hydro, wind, solar and biomass generation pipeline projects. Our Strategic Plan and Sustainability Plan, that covers a period of 5 years (2020-2024) are driven by growth in renewable generation projects, whether through acquisitions or greenfield projects. Because of this identified opportunity for expanding the portfolio in renewable generation, in 2019, we carried out a new (follow-on) public offering of shares, boosting the percentage of the company's free-floating shares in the market to 16.29%. In addition to increasing the liquidity of our shares, the operation also raised R\$ 3.7 billion, opening up opportunities to boost capitalization and investments in our business. As a result of this operation, we chose to integrate 100% of CPFL Renováveis into our portfolio. The shares that State Grid owned in the company were acquired by the holding company CPFL Energia through a purchase and sale agreement, allowing us to take advantage of synergies, reduce costs, and boost efficiency, fostering continuity of our investments in renewable generation projects. Thanks to this operation, our installed capacity now totals 4.3 gigawatts (GW) in assets spread out across four of the country's five regions, making us the third-largest privately held company in terms of generation and the Brazilian leader in renewable energy. We are leader in this segment in Brazil and already have mapped out a pipeline of new businesses capable of adding 2.9 GW to installed capacity, amid a highly pulverized sector with opportunities for acquisitions and development of greenfield projects. The magnitude of these impacts is high. - Divestment The climate-related risks also have a potential to impact CPFL's divestments. CPFL is always looking for opportunities to balance its portfolio of assets, following the goal of having at least 95% of its generation from renewable sources. - Access to capital We understand that the company is positively impacted in this aspect, since CPFL Energia participates in the ISE (Business Sustainability Index from B3), and other sustainability indices and rankings, among other platforms that actively favour reallocation of investments in the organization, since participation in these platforms demonstrates transparency and commitment on issues related to sustainability. In the last year, we launched our Sustainability Plan, (covers a period of 5 years), which reinforces our commitment to generate value for all our stakeholders in the long term. In addition, as an example of a case in this issue, it is worth noting that CPFL Renováveis has already obtained a Climate Bond Certified by the Wind Energy criteria (green bond) by the 'Climate Bonds Standard Board' (Climate Bonds Standard Board) for the issuance of debentures in the amount of R \$ 200 million. It was the first company in South America to issue a green bond with international certification and the first in the industry to issue a certified bond. The magnitude of these impacts is high. - Assets Acute physical risks, as cyclones, storms, floods, among others, can impact our assets by causing damage to facilities, both in relation to our transmission and distribution networks, as well as the generation assets. To mitigate these risks, over the past three years, we already have invested more than R\$ 5.5 billion to promote the construction of a more reliable and secure network and over the next five years we plan to invest R\$ 11.6 billion on projects. Some examples of projects are: ADMS Program (Advanced Distribution Management Systems), installation of automatic reclosers and smart meters. In the generation segment, one of our main initiatives concerns the inspection of the dams that form the reservoirs for our hydroelectric plants and SHPPs, using state-of-the-art equipment and internationally recognized methodologies to ensure the structures' reliability. Over the next five years, we plan to invest R\$ 1.158 billion. These impacts have a high magnitude. - Liabilities The mapped climate-related risks can have an indirect impact (increase/decrease) on our debt levels. However, supported by a management model that is responsive to all the economic, social and environmental aspects that impact every one of our businesses, we have achieved significant results in the last years. In 2019, the company's EBITDA reached R\$ 6.4 billion, expanding 13.4% from the previous year. We achieved record net profit of R\$ 2.7 billion. We ended 2019 with net debt of R\$ 16.4 billion, 8.4% lower than in December 2018 and our leverage, as measured by adjusted net debt over adjusted Ebitda, declined from 3.05x in December 2018 to 2.52x in December 2019. Another factor that minimizes CPFL's exposure to liabilities is related to the possibility of generating revenue through the sale of carbon credits in a cap and trade system. Because of this, the climate relates risks represents low magnitude in liabilities.</p>

C3.1f

(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

CPFL's Sustainability driver is to provide sustainable, accessible and reliable energy to all walks of life, and enhance a safer, healthier and prosperous life of people in regions where we operate. Our corporate objective is to power the transition to a more sustainable and smart way of providing and using energy, maximizing our positive impacts in the community and value chain.

Climate change generates impacts for the entire sector. Changes in rainfall patterns and other atmospheric conditions can negatively affect both hydroelectric generation and energy distribution as the result of greater risks to the network's integrity from more severe storms. However, demands to decarbonize the energy matrix creates opportunities to expand our renewable generation and to develop projects that emit less CO2 into the atmosphere.

In order to deal with such a complex scenario, we have structured a model that establishes fronts of action.

1. Management of GHG emissions:

Identifying the processes associated with the CPFL's GHG emissions is the first step in planning long-term performance and mitigating the impacts associated with this aspect. We prepare annual GHG inventory since 2007 and, based on it, we identify the processes that contribute most to GHG emissions and enable the most effective actions to reduce these emissions. In our Sustainability Plan 2020-24, we made the commitment to Reduce in 10% our carbon intensity indicator until 2024.

2. Climate risk and opportunity management:

Climate Risk and Opportunity Mapping identifies key drivers and impacts associated with business, as well as new opportunities, as explained in the part C2. Based on the risks, we also plan adaptation initiatives. In our Sustainability Plan 2020-24, we made the commitment to Publish these actions.

3. Innovation

We conducted some projects to identify the vulnerabilities of the sector as a result of climate change scenarios. In this way, we promote R&D with investments in the modernization of generation, transmission and distribution services, smart grids and low carbon technologies to minimize climatic risks.

We have invested in mitigation and adaptation actions that minimize our exposure to risks and ensure a better level of readiness to deal with the irreversible effects of climate change.

In generation, we have been investing heavily in dam safety, in addition to seeking improvements in efficiency and operational control. There are three main projects: Finite Elements (real-time monitoring system for dams); Slope Monitoring (monitor the integrity of these structures and schedule safety maintenance interventions) and Tunnel Inspection (develop an autonomous underwater vehicle to inspect the structure of adduction channels).

In DisCos, some examples: weather Translator System (WeTS), which cross-references data from weather forecasts with our operational impact and criticality levels and help with the planning and allocation of teams in case of storms. PixForce, a project that will help implement an automated vegetation inspection system in urban networks, reducing the risk of contact with the electricity grid in case of rain.

4. Market and Customer oriented activities

CPFL Energia has been studying alternatives to expand its portfolio of renewable energy, new solutions and low carbon products, as well as alternatives for climate mitigation and adaptation.

In line with the evolution of the energy sector and customer needs, we launched CPFL Soluções with operations throughout the country; it has a portfolio of integrated solutions in energy management and trading, energy efficiency, distributed generation, energy infrastructure, and consulting services.

Based on this, in our Sustainability Plan 2020-24, we made the commitment to offer to our clients low carbon solutions for their energy transition.

5. Engagement and Disclosure:

CPFL works in partnership with institutions, as well as has public commitments that reinforce its climate change strategy. Some discussion forums and initiatives are CEBDS and Brazil GHG Protocol Program. We also worked developing awareness activities for our employees and supply chain, disseminating the SGD 13, like a training and a manual to guide our suppliers in preparing GHG inventories. In addition, in 2019, the company signed the São Paulo Environmental Agreement – initiative to reduce GHG emissions and encourage sustainability actions from Government of São Paulo and CETESB.

6. Renewable energy sources

Our installed capacity totals 4.3 GW, making us the third-largest privately held company in terms of generation and the Brazilian leader in renewable energy. In 2019, we generated 13.1 TWh. Of this total, approximately 98.3% came from renewable sources. We plan to expand our operation and already have mapped out a pipeline of new businesses capable of adding 2.9 GW to installed capacity. In our Sustainability Plan 2020-24, we made the commitment keep at least 95% from renewable sources in our generation portfolio until 2024.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Both absolute and intensity targets

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Year target was set

2019

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Other, please specify (Scope 1 - Fugitives)

This target is specific to monitor Scope 1 fugitive emissions

Base year

2018

Covered emissions in base year (metric tons CO2e)

2582.8

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

1

Target year

2022

Targeted reduction from base year (%)

5

Covered emissions in target year (metric tons CO2e) [auto-calculated]

2453.66

Covered emissions in reporting year (metric tons CO2e)

848.2

% of target achieved [auto-calculated]

1343.19343348304

Target status in reporting year

Achieved

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Please explain (including target coverage)

This emission reduction target involves fugitive emissions. Although this category represents less than 1% of the total Scope 1 emissions, it is one in which our direct action can be decisive in reducing emissions. Our preventive maintenance activities on circuit breakers contributed to a significant reduction in SF6 leaks, which positively affected the CPFL Group's emissions inventory. The air conditioning units in administrative buildings also underwent preventive maintenance programs. Due the above, this target was achieved in 2019, with a 67% of reduction. It is worth remembering that 38% of Scope 1 emissions come from EPASA thermal generation, whose dispatch order for electricity generation is controlled by the National Electric System Operator. Due to this special feature, CPFL Energia has no control over when our thermoelectric plants will be activated to generate energy.

Target reference number

Abs 2

Year target was set

2019

Target coverage

Business activity

Scope(s) (or Scope 3 category)

Other, please specify (Scope 1 – mobile combustion)

This target is specific to monitor the mobile combustion emissions of the DisCos fleet, which is why it positively affects our Scope 1.

Base year

2017

Covered emissions in base year (metric tons CO2e)

20038.27

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

3

Target year

2022

Targeted reduction from base year (%)

10

Covered emissions in target year (metric tons CO2e) [auto-calculated]

18034.443

Covered emissions in reporting year (metric tons CO2e)

10888

% of target achieved [auto-calculated]

456.639719895979

Target status in reporting year

Achieved

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Please explain (including target coverage)

This emission reduction target involves mobile combustion emissions, whose supply and management policies are under our control. CPFL has a policy that regulates the use of ethanol in its fleet vehicles. Mobile combustion emissions at DisCos represented 2.64% of Scope 1 in the base year. In 2019, they fell 18%, reaching 2.56%. This reduction was due to the optimization of routes and team dispatches, as well as the transfer of 16 electric cars to the company's fleet in 2019, resulting in fuel savings of 53,000 liters. Preventive and scheduled maintenance activities also contributed to fuel savings. It is important to note that in 2019, we installed telemetry equipment in 100% of our fleet, ensuring more accurate data in accounting for emissions.

Target reference number

Abs 3

Year target was set

2019

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Other, please specify (Scope 1 – Land use)

This goal is specific to monitor the land use emissions, caused by the works and interventions necessary for the company's generation and distribution activities, with a positive impact on the total Scope 1.

Base year

2018

Covered emissions in base year (metric tons CO2e)

283946.3

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

40

Target year

2022

Targeted reduction from base year (%)

10

Covered emissions in target year (metric tons CO2e) [auto-calculated]

255551.67

Covered emissions in reporting year (metric tons CO2e)

145616

% of target achieved [auto-calculated]

487.170637546606

Target status in reporting year

Achieved

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Please explain (including target coverage)

This emission reduction target involves land use emissions, whose management policies are under our control. One of the main impacts is associated with the construction of power plants and transmission and distribution lines, which in many cases requires vegetal suppression and can change the local landscape, flora and fauna. In these processes, we carefully conduct all requirements applicable to environmental licensing, minimizing impacts and adequately compensating them. The network layout, for example, is defined considering the least possible impact on isolated forests and trees. In sections where it is not possible to change the location of the towers and wires, we raise the height of the structures to avoid interaction with the local vegetation. One important initiative we have developed in the São Paulo state is the Preserva ("Preservation") Program, an agreement with CETESB that allows us to unify the terms of an environmental recovery commitment and to carry interest. In this way, trees are planted in concentrated areas, enhancing the effect of habitat preservation and combating climate change. In addition, this enables a cost reduction of around R\$ 224,000 per year. Also worth mentioning is the Manejo Integrado de Vegetação em Linhas de Transmissão ("Integrated Management of Vegetation along Transmission Lines" - MIVE). This solution permits the replacement of trees that are incompatible with the transmission networks with shrub species that grow to smaller sizes and, at the same time, maintain the environmental quality of the areas where the assets are installed. At the distribution companies, the reduction of plant cover in cities is inherent to pruning activities that contribute to ensuring the availability of energy supply and to the population's safety. To minimize this environmental impact, we carried out Arborização + Segura, a project to substitute trees and donate seedlings to restore green areas.

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

Int 1

Year target was set

2019

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based)

CPFL's Scope 1 emissions are closely related to power generation and Scope 2 emissions are more related to energy distribution. Accordingly, this indicator allows monitoring of emissions from the main activities of the CPFL Group, correlating with our net operating revenue.

Intensity metric

Other, please specify (metrics tons CO2e per Net Operational Revenues)

Base year

2018

Intensity figure in base year (metric tons CO2e per unit of activity)

38.8

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

100

Target year

2024

Targeted reduction from base year (%)

10

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

34.92

% change anticipated in absolute Scope 1+2 emissions

30

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year (metric tons CO2e per unit of activity)

26.2

% of target achieved [auto-calculated]

324.742268041237

Target status in reporting year

Underway

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Please explain (including target coverage)

This indicator evaluates our GHG emissions in comparison to the total net revenues generated. The target takes into account 2018 as the base year to follow GHG Protocol methodology. Our Sustainability Plan commitment is to reduce in 10% our carbon intensity indicator until 2024 [tCO2 e/ net revenue]. The reduction in dispatch from EPASA (by 40%) contributed to the positive performance result in 2019 of 26.2 (about 30% reduction in this indicator).

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number

Oth 1

Year target was set

2019

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Energy productivity	Other, please specify (Keep at least 95% from renewable sources in our generation portfolio until 2024)
---------------------	---

Target denominator (intensity targets only)

<Not Applicable>

Base year

2019

Figure or percentage in base year

95

Target year

2024

Figure or percentage in target year

95

Figure or percentage in reporting year

95

% of target achieved [auto-calculated]

<Calculated field>

Target status in reporting year

Underway

Is this target part of an emissions target?

Sustainability Plan 2020-24

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

In 2019, we developed our Sustainability Plan, which systematizes actions and objectives for the next five years under the scope of sustainability management. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. This goal is part of the first pillar (Sustainable energy - Aiming for the smallest possible environmental footprint) and it is related to maintenance and growth of CPFL in energy generation through renewable sources, such as hydro, solar, wind or biomass. It also signals that we have no ambition to expand generation from thermal sources.

Target reference number

Oth 2

Year target was set

2019

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Waste management	Other, please specify (Refurbish at least 40,000 equipments (transformers, voltage regulators, reclosers etc.) until 2024)
------------------	--

Target denominator (intensity targets only)

<Not Applicable>

Base year

2019

Figure or percentage in base year

100

Target year

2024

Figure or percentage in target year

100

Figure or percentage in reporting year

100

% of target achieved [auto-calculated]

<Calculated field>

Target status in reporting year

Underway

Is this target part of an emissions target?

Sustainability Plan 2020-24

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

In 2019, we developed our Sustainability Plan, which systematizes actions and objectives for the next five years under the scope of sustainability management. To this end,

we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. This goal is part of the first pillar (Sustainable energy - Aiming for the smallest possible environmental footprint) and it is based on the principle of the circular economy and related to the reverse chain with the Equipment Reformer, a more efficient solution for the treatment of the waste generated, monthly, by our Distributors. Each month, the Reformer evaluates about 750 transformers that would be discarded and manages to rehabilitate 60% of them for reuse. For the next years, we also plan to expand this operation.

Target reference number

Oth 3

Year target was set

2019

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Waste management	Other, please specify (Ensure the destination of 100% of the main grid components to recycling or to the reverse supply chain until 2024)
------------------	---

Target denominator (intensity targets only)

<Not Applicable>

Base year

2019

Figure or percentage in base year

100

Target year

2024

Figure or percentage in target year

100

Figure or percentage in reporting year

100

% of target achieved [auto-calculated]

<Calculated field>

Target status in reporting year

Underway

Is this target part of an emissions target?

Sustainability Plan 2020-24

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

In 2019, we developed our Sustainability Plan, which systematizes actions and objectives for the next five years under the scope of sustainability management. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. This goal is part of the first pillar (Sustainable energy - Aiming for the smallest possible environmental footprint) and it is based on the principle of the circular economy and also related to the Refurbisher. The network materials, such as scrap iron, aluminum, copper, plastic and other materials, we are able to add value and sell them to licensed and approved recycling companies and groups (reverse chain).

Target reference number

Oth 4

Year target was set

2019

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Other, please specify	Other, please specify (Reach 100% of Group A clients with telemetering until 2020)
-----------------------	--

Target denominator (intensity targets only)

<Not Applicable>

Base year

2019

Figure or percentage in base year

87

Target year

2020

Figure or percentage in target year

100

Figure or percentage in reporting year

87

% of target achieved [auto-calculated]

0

Target status in reporting year

Underway

Is this target part of an emissions target?

Sustainability Plan 2020-24

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

In 2019, we developed our Sustainability Plan, which systematizes actions and objectives for the next five years under the scope of sustainability management. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. This goal is part of the second pillar (Smart Solutions - Providing the solutions for the future of energy). Telemetering is a technology that allows the meter to be read distance, using "smart meters". These devices make it possible to transmit various information without intermediaries, more quickly, with productivity gains and cost reduction with field teams. The initiative consists of replacing conventional meters for smart meters for industrial and commercial customers in the South, with the implementation of its own telecommunications network. One of the main advantages smart meters offer our customers is the possibility of monitoring energy consumption through applications that indicate the days and times when there is greater consumption. With this information, consumers can adapt their daily habits to secure more efficiency and savings. In 2019, we launched a beta version of a tool with this functionality for user tests and evaluations.

Target reference number

Oth 5

Year target was set

2019

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Other, please specify	Other, please specify (Invest R\$ 350 million in distribution network automation until 2024)
-----------------------	--

Target denominator (intensity targets only)

<Not Applicable>

Base year

2019

Figure or percentage in base year

21

Target year

2024

Figure or percentage in target year

100

Figure or percentage in reporting year

21

% of target achieved [auto-calculated]

0

Target status in reporting year

Underway

Is this target part of an emissions target?

Sustainability Plan 2020-24

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

In 2019, we developed our Sustainability Plan, which systematizes actions and objectives for the next five years under the scope of sustainability management. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. This goal is part of the second pillar (Smart Solutions - Providing the solutions for the future of energy). On the engineering front, our investments are directed towards the technological evolution of the network, with the installation of more intelligent and remote-controlled equipment. Automatic reclosers, capable of resuming operation automatically when there are improper interventions in the network, are an example of this progress. In 2019, we reached 11,400 reclosers connected to our network – 16% growth in a year-over-year comparison. These initiatives include improvements in the dispatch of teams, scheduling service orders requested by customers, and efficiency gains from the reduction of trips to handle unfounded calls, resulting in less GHG emissions.

Target reference number

Oth 6

Year target was set

2019

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Other, please specify	Other, please specify (Achieve 90% of attendance by digital channels until 2024)
-----------------------	--

Target denominator (intensity targets only)

<Not Applicable>

Base year

2019

Figure or percentage in base year

80

Target year

2024

Figure or percentage in target year

100

Figure or percentage in reporting year

80

% of target achieved [auto-calculated]

0

Target status in reporting year

Underway

Is this target part of an emissions target?

Sustainability Plan 2020-24

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

In 2019, we developed our Sustainability Plan, which systematizes actions and objectives for the next five years under the scope of sustainability management. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. This goal is part of the second pillar (Smart Solutions - Providing the solutions for the future of energy). This goal is to improve and expand the digital services offered to customers. Some examples are boosting self-service options in the smartphone application, DisCos' websites, and the totems available at brick-and-mortar agencies. In addition to making the channels more agile and intuitive, we expanded the range of services that can be requested on them. These initiatives join the digital video service that we launched in 2018, in which customers ask questions and receive guidance from a human attendant on an audio and video platform. With these online services, people can solve their doubts and problems by their own homes, reducing mobility GHG emissions.

Target reference number

Oth 7

Year target was set

2019

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Low-carbon vehicles	Other, please specify (Invest R\$ 45 million in the development of electrical mobility technology until 2024)
---------------------	---

Target denominator (intensity targets only)

<Not Applicable>

Base year

2019

Figure or percentage in base year

1

Target year

2024

Figure or percentage in target year

100

Figure or percentage in reporting year

1

% of target achieved [auto-calculated]

0

Target status in reporting year

Underway

Is this target part of an emissions target?

Sustainability Plan 2020-24

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

In 2019, we developed our Sustainability Plan, which systematizes actions and objectives for the next five years under the scope of sustainability management. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. This goal is part of the second pillar (Smart Solutions - Providing the solutions for the future of energy). One of the biggest opportunities for innovation in our sector is in electric mobility. This goal is one of the actions developed within the Program for Research and Development (R&D) of ANEEL. Among the activities planned are the development of a new concept for vehicle recharging, the electrification of our operational fleet in a specific city and the reuse of batteries, reducing considerable volumes of GHG emissions.

Target reference number

Oth 8

Year target was set

2019

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Engagement with customers	Other, please specify (Offer to our clients low carbon solutions for their energy transition)
---------------------------	---

Target denominator (intensity targets only)

<Not Applicable>

Base year

2019

Figure or percentage in base year

100

Target year

2024

Figure or percentage in target year

100

Figure or percentage in reporting year

100

% of target achieved [auto-calculated]

<Calculated field>

Target status in reporting year

Underway

Is this target part of an emissions target?

Sustainability Plan 2020-24

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

In 2019, we developed our Sustainability Plan, which systematizes actions and objectives for the next five years under the scope of sustainability management. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. This goal is part of the second pillar (Smart Solutions - Providing the solutions for the future of energy). CPFL currently offers its customers a variety of low carbon services. As an example, we can cite from the installation of photovoltaic panels, to the sale of renewable energy certificates. Our goal is to expand the products and services available for a transition to the low carbon economy in Brazil.

Target reference number

Oth 9

Year target was set

2019

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Low-carbon buildings	Other, please specify (Invest R\$ 150 million in Energy Efficiency actions in Public Hospitals between 2020 and 2022)
----------------------	---

Target denominator (intensity targets only)

<Not Applicable>

Base year

2019

Figure or percentage in base year

14

Target year

2024

Figure or percentage in target year

100

Figure or percentage in reporting year

14

% of target achieved [auto-calculated]

0

Target status in reporting year

Underway

Is this target part of an emissions target?

Sustainability Plan 2020-24

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

In 2019, we developed our Sustainability Plan, which systematizes actions and objectives for the next five years under the scope of sustainability management. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. This goal is part of the third pillar (Society Shared Value - Maximizing our positive impacts in the community and value chain). This goal involves the investments made by the program CPFL in Hospitals, launched in 2019. Using resources from the Energy Efficiency Program, between now and 2022 our four DisCos will allocate a total of R\$ 150 million to benefit around 200 hospitals by installing solar panels and replacing existing lightbulbs with more energy-efficient LED lights, along with other efficient technologies. The expectation is that these actions will allow health institutions to save approximately R\$ 18 million a year by reducing their energy bills, an amount sufficient to pay for the medical care of 75,000 additional patients a year. In the long run, represented by the 20-year lifetime of solar panels, savings from lower energy bills could help provide treatment to more than 1.5 million people. The program also provides environmental benefits from prioritizing renewable energy produced from a solar source, with no GHG emissions associated.

Target reference number

Oth 10

Year target was set

2019

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Engagement with customers	Other, please specify (Invest R\$ 200 million in Energy Efficiency actions toward low income communities until 2024)
---------------------------	--

Target denominator (intensity targets only)

<Not Applicable>

Base year

2019

Figure or percentage in base year

12

Target year

2024

Figure or percentage in target year

100

Figure or percentage in reporting year

12

% of target achieved [auto-calculated]

0

Target status in reporting year

Underway

Is this target part of an emissions target?

Sustainability Plan 2020-24

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

In 2019, we developed our Sustainability Plan, which systematizes actions and objectives for the next five years under the scope of sustainability management. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. This goal is part of the third pillar (Society Shared Value - Maximizing our positive impacts in the community and value chain). This target includes investments made with resources from ANEEL's Energy Efficiency Program, aimed at the low-income community. Some actions are: changing electrical equipment for more efficient models, installing solar heaters, changing lamps, regularizing registrations, etc. In 2019, we invested a total of R\$ 72.4 million in the Energy Efficiency Program, which adheres to ANEEL's regulatory guidelines. The projects we developed have saved approximately 40,000 MWh of energy, enough to serve around 17,000 residential customers for one year. This saved volume also represents emissions of 2,248 tons of CO2, which is equivalent to the planting of 13,400 trees.

Target reference number

Oth 11

Year target was set

2019

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: category & Metric (target numerator if reporting an intensity target)

Engagement with suppliers	Other, please specify (Integrate sustainability aspects in the monitoring process for 100% of our critical suppliers until 2024)
---------------------------	--

Target denominator (intensity targets only)

<Not Applicable>

Base year

2019

Figure or percentage in base year

30

Target year

2024

Figure or percentage in target year

100

Figure or percentage in reporting year

30

% of target achieved [auto-calculated]

0

Target status in reporting year

Underway

Is this target part of an emissions target?

Sustainability Plan 2020-24

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

In 2019, we developed our Sustainability Plan, which systematizes actions and objectives for the next five years under the scope of sustainability management. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. This goal aims to include the following evaluation criteria in the monitoring process of critical suppliers: management practices adopted, eco-efficiency of processes, consumption of water, energy and materials, management of climate change, guarantee of decent working conditions and development of communities where they operate. Adopting better practices, our suppliers can reduce their emissions and have a more perennial operation.

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	0
To be implemented*	1	1542.59
Implementation commenced*	5	28810.64
Implemented*	3	3775.45
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Other, please specify	Other, please specify (Services optimization)
-----------------------	---

Estimated annual CO2e savings (metric tonnes CO2e)

260000

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

3451000

Investment required (unit currency – as specified in C0.4)

0

Payback period

<1 year

Estimated lifetime of the initiative

1-2 years

Comment

CPFL distributor Santa Cruz has implemented the procedure of making a prior connection by phone with the client to check the service. This initiative reduced the distance traveled by 1 million km, also reduced equipment malfunctions by 40% and traffic violations by 71%. In addition to reducing GHG emissions, we also had the financial savings of fuel refueling. We are considering expanding this procedure to other distribution companies of the CPFL Energia group.

Initiative category & Initiative type

Transportation	Company fleet vehicle replacement
----------------	-----------------------------------

Estimated annual CO2e savings (metric tonnes CO2e)

720

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

241150

Investment required (unit currency – as specified in C0.4)

3520000

Payback period

4-10 years

Estimated lifetime of the initiative

6-10 years

Comment

In 2019, we transferred 16 electric cars to the company's fleet, resulted in 53,000 liters in fuel savings. We estimate 6 years for the return on investment and the useful life of electric vehicles is about 8 years, according to manufacturers' definitions. All employees can use the VE normally: when selecting the city of origin and the destination city, the fleet reservation system already indicates the availability of the trip with an electric vehicle depending on the distance and autonomy of the vehicle. On our administrative buildings and in some strategic locations, there are charging stations.

Initiative category & Initiative type

Other, please specify	Other, please specify (Digitalization)
-----------------------	--

Estimated annual CO2e savings (metric tonnes CO2e)

2795.45

Scope(s)

Scope 3

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

60000

Investment required (unit currency – as specified in C0.4)

4270460

Payback period

4-10 years

Estimated lifetime of the initiative

6-10 years

Comment

Some trends herald a sector that is undergoing a profound and unprecedented transformation, which requires that power companies be able to generate value in a decentralized, decarbonized, digitalized, and increasingly democratized model. For us at CPFL Energia, these changes are already part of our operating strategy and guide all our businesses towards this new sector landscape. The company's digitalization projects involve virtualized services, digital channels for serving the public, among others. In the first moment, we carried out the assessment of emissions avoided by the adhesion of customers to the digital account, avoiding the printing and mailing of the energy bills of the parcel that has already activated this service option.

C4.3c**(C4.3c) What methods do you use to drive investment in emissions reduction activities?**

Method	Comment
Employee engagement	CPFL Energia promotes the engagement of its employees through internal campaigns. Some examples related to climate change issues are: - Explanations about GHG Inventories; and our results to improve the quality of internal carbon footprint. - Presentation about our Performance in FGV's emissions trading projects; - Concepts and actions on the theme of renewable energy seals; - We highlight some emission reduction projects and also map CPFL's contribution to the achievement of the SDGs. - Rational use of energy and water within the Company's facilities, correlating energy efficiency with GHG emission reduction. Internal campaigns are carried through digital media in existing communication channels, such as Intranet and through the display of banners and posters at our headquarters and offices. -We provide the Global Compact platform for training, redirecting classes to the themes of Ethics, Human Rights, Climate Change and SDGs. There are more than 50 courses available to our 14,000 employees. The strategy includes the training of strategic areas: communication team, supply and R&D for sustainability and GHG emission reduction Project analysis.
Internal price on carbon	In Brazil, there is no established price for carbon. However, in 2017 we started an internal pricing project involving several areas of our Group, with the objectives of developing a study and assessing the impacts and opportunities of carbon pricing for the Brazilian Electric sector, by segment (Generation, Distribution, Marketing and Solutions).
Compliance with regulatory requirements/standards	In Brazil there is a Law (9.991/2000) establishes that power utility companies permit that holders annually apply part of their net operating revenue in Research and Development Program of the Electricity Sector, regulated by the Brazilian National Electric Energy Agency (Aneel). CPFL has a dedicated budget for R&D that is allocated to climate change issues: (1) Clean Energy; (2) Electric Mobility; (3) Storage (4) Consumption breakdown (5) Partnerships with startups. Some examples are below: 1) Clean Energy: in Solar Roofing Project we studied the possible impacts of the massive entry of solar photovoltaic generation into the distribution network. The study provided a real laboratory, with 231 installed systems, that enabled the comparison of network conditions before and after the entry of the distributed generation. 2) Electric Mobility: one of the biggest opportunities in our sector is in electric mobility. Advancements in electric engines for commercial and passenger vehicles, in addition to other types of transportation, will require the creation of a more robust, digitalized, and connected energy infrastructure. This vision guided our creation of the Emotive program, an R&D initiative that during a five-year period has evaluated possible business models for battery recharging and customer service. We will invest R\$ 45 million in the development of electrical mobility technology until 2024. 3) Energy Storage Program: consists in three projects applied to the distribution, generation and transmission businesses. The program will involve the trialing of new technologies, the evaluation of the impacts generated by battery applications, and the validation of new business models. 4) Partnerships with startups: we seek to strengthen the company's relationship with the startups ecosystem and provide a favorable environment for experimentation, prototyping, testing and iteration. CPFL Inova's startup-acceleration, our biggest initiative, helps to accelerate startups with disruptive projects targeting the electricity sector. In 2019, we carried out the project's second edition and selected 12 scale-ups, all of them connected to energy consumption, operational efficiency, digital transformation, smart cities, artificial intelligence and internet of things. More than 490 companies have signed up to participate in the selection process.
Internal finance mechanisms	Green bond is a debt security that requires the funds raised to be invested in environmentally sustainable projects. Climate Bonds Initiative is an international non-profit organization working exclusively to promote large-scale investments in the low carbon economy. CPFL Renováveis was the first Brazilian company that emitted green bonds. These mechanisms are on the company's radar for future opportunities to maintain sustainability in our operations.

C4.5**(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?**

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

CPFL Soluções is a unique platform that offers integrated solutions that generate value and increase customer competitiveness, taking advantage of all opportunities offered in the new energy market. In 2019, the unit achieved positive results with the delivery of projects serving customers across the country in segments including data centers, pulp and paper, automobiles, and wind power generation, among others. CPFL Soluções has more than 2,100 customers, and in 2019 achieved 6% growth in EBITDA. The portfolio includes: • Energy Management with a complete consultancy so that customers can better manage their energy, with greater savings and predictability in their bills; • Free Energy Market Freedom to choose the energy supplier and negotiate prices, quantities, energy sources and commercial conditions; • Distributed Generation Self-production of energy from renewable sources; • Efficiency Solutions to improve energy productivity and reduce costs and environmental impacts; • Energy Services and Infrastructure Diagnose, provide solutions, and execute electrical installation projects: construction, operation, maintenance, and retrofit.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify (Internal Classification)

% revenue from low carbon product(s) in the reporting year

100

% of total portfolio value

<Not Applicable>

Asset classes/ product types

<Not Applicable>

Comment

One of CPFL Soluções's highlighted projects in 2019 was a Construction of the Americana Solar Plant in the city of Americana, São Paulo. With 3,320 generator modules, the new plant has 1.12 MW of capacity and annual generation capacity of 1,771 MWh – enough to supply 738 houses with average consumption of 200 kWh/month during the period. This plant's operation can reduce connected customers' energy bills by up to 95% and prevent the emission of 131 tons of carbon dioxide (CO₂), the equivalent of planting around 900 trees.

Level of aggregation

Group of products

Description of product/Group of products

Our Energy Efficiency Program invested BRL 72.4 million in investments.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify (Internal Classification)

% revenue from low carbon product(s) in the reporting year

100

% of total portfolio value

<Not Applicable>

Asset classes/ product types

<Not Applicable>

Comment

In 2019, we invested R\$ 72.4 million in the Energy Efficiency Program, which adheres to ANEEL's regulatory guidelines. The projects have saved 40,000 MWh of energy, enough to serve 17,000 residential customers for one year. This saved volume also represents emissions of 2,248 tons of CO₂, which is equivalent to the planting of 13,400 trees. Among the projects developed in 2019, UTI Domiciliar ("Home ICUs") stands out. This program was an RGE initiative that donated LED lamps and helped install 55 photovoltaic systems serving low-income consumers who use essential life-saving electrical devices at home to care for critical patients. The reduction in total energy consumption can reach 125.9 MWh. Another initiative is the CPFL nas Escolas ("CPFL in Schools") project, which raises student awareness and trains them in the conscientious use of electric energy. More than 1,300 teachers and 40,000 students at 400 educational institutions will benefit from this new phase of the initiative that will be completed in 2020. We should also mention the efficiency project at the Santa Maria Air Base, where a Photovoltaic System for Power Generation is being installed, along with replacement of conventional fixtures with LED lighting. Altogether, there are three photovoltaic generation systems that add a total of 125 kWp of power, capable of generating 160 MWh/year. We also replaced 6,358 lamps with LED technology. Launched in 2019, the CPFL nos Hospitais ("CPFL in Hospitals") Program integrates energy efficiency initiatives and private social investment to drive improvements in the service provided by public health institutions, which are essential for the local population's quality of life. Using resources from the Energy Efficiency Program, between now and 2022 our four DisCos will allocate a total of R\$ 150 million to benefit around 200 hospitals by installing solar panels and replacing existing lightbulbs with more energy-efficient LED lights, along with other efficient technologies. The expectation is that these actions will allow health institutions to save R\$ 18 million a year by reducing their energy bills, an amount sufficient to pay for the medical care of 75,000 additional patients a year. In the long run, represented by the 20-year lifetime of solar panels, savings could help provide treatment to more than 1.5 million people.

C-EU4.6

(C-EU4.6) Describe your organization's efforts to reduce methane emissions from your activities.

CPFL Energia's methane emissions result from the incomplete burning of fuels in the processes of thermal generation for biomass, thermal generation for oil and mobile combustion. The total volume of CH4 emissions in our Scope 1 is 1,517.30 tons, which represents 9% of our entire Scope 1.

Although CH4 emissions are considered immaterial in electricity generation, we monitor these emissions due to the particular aspect of CH4 emissions from thermal generation. The electricity generation process that corresponds to 98.6% of the total methane emissions.

It is important to note that the generation of biomass is considered carbon neutral, since the carbon dioxide emissions come from biological material, in a natural cycle. In addition, methane emissions from the combustion of our fleet can be considered insignificant (only 1.4%).

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1 2018

Base year end

December 31 2018

Base year emissions (metric tons CO2e)

695098.6

Comment

The base year for monitoring the emission reduction target is 2018, as approved by the company's Board of Directors. For the base year definition, we have used the GHG protocol premises and methodologies. In 2019, direct emissions of CO2 equivalent (Scope 1) amounted to 425 thousand tons. Combustion Stationary was responsible for 61%, divided into thermal oil (38%) and biomass burning (23%). The emissions derived from Epasa's thermoelectric plant operation had a reduction in fuel consumption in 2019 due more increased participation of other sources in Brazilian power generation reduced the need to bring thermal plants online. This reduction was significant to reach the 2019 emissions figures. CPFL Renováveis integration resulted in an increase in biomass emissions from 8% in 2018 to 23% in 2019. Other sources included in this scope are: Land Use Change Soil [suppression of native vegetation], with 34%, Mobile Combustion [supply of vehicles and equipment] with 4.4%. Fugitive and waste emissions combined were less than 1%.

Scope 2 (location-based)

Base year start

January 1 2018

Base year end

December 31 2018

Base year emissions (metric tons CO2e)

347371.9

Comment

The base year for monitoring the emission reduction target is 2018, as approved by the company's Board of Directors. For the base year definition, we have used the GHG protocol premises and methodologies. In 2019, the Scope 2 emissions amounted to 359 thousand tons, an increase by 3.4% over the previous year. This result is directly related to the increase in the national interconnected system (SIN) emission factor and the maintenance of technical losses indicators. Also, we observed an increasing of electricity distributed by 1.25%.

Scope 2 (market-based)

Base year start

January 1 2018

Base year end

December 31 2018

Base year emissions (metric tons CO2e)

0

Comment

Not applicable

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

Brazil GHG Protocol Programme

IPCC Guidelines for National Greenhouse Gas Inventories, 2006

ISO 14064-1

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

The Greenhouse Gas Protocol Agricultural Guidance: Interpreting the Corporate Accounting and Reporting Standard for the Agricultural Sector

The Greenhouse Gas Protocol: Scope 2 Guidance

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

425354.3

Start date

January 1 2019

End date

December 31 2019

Comment

Since 2017, we have presented our inventory through the filter of shareholding structure, which allows us to proportionally account for the emissions of the generation assets in which we hold a stake (this year our share stake in CPFL Renováveis changed to 99.94%). The accounting included the stationary combustion emissions for power generation; fleet mobile combustion; land use change emissions, fugitive emissions of air conditioners and SF6 and emissions by effluents treatment. Data collection was performed in a decentralized manner and each focal point inserted the data into a software monthly. Thus, according to the GHG Protocol methodology, our Scope 1 emissions are complete and consistent. In 2019, direct emissions of CO2 equivalent (Scope 1) amounted to 425.4 thousand tons, a reduction of 39% from the previous year. Our scope 1 emissions are distributed among our power generation units (responsible for 62.29% of the emissions), our energy DisCos (responsible for 32.38% of the emissions) and in the solutions companies (with 1.82%). Combustion Stationary was responsible for 61%, divided into thermal oil (38%) and biomass burning (23%). The emissions derived from Epasa's (installed capacity 182,3 MW) thermoelectric plant had a reduction in fuel consumption in 2019 due more increased participation of other sources in Brazilian power generation. This reduction was significant to reach the 2019 emissions figures because this thermoelectric operates to meet the contingencies of the Brazilian Interconnected Electric System. It is important to note that the energy dispatch decision in Brazil is made by the National Electric System Operator (ONS) based on prospective analyses forecast of future inflows scenarios, the expected growth of energy consumption and definition of expansion schedule of new power plants. In periods of favourable hydrology and high levels of water storage in the reservoirs of the system, the decision of generation in thermal power plants is minimized, giving priority to the hydroelectric generation. In another hand, CPFL Renováveis integration resulted in an increase in biomass emissions from 8% in 2018 to 23% in 2019. Other sources included in this scope are: Land Use Change Soil [vegetation suppression], with 34%, Mobile Combustion [supply of vehicles and equipment] with 4.4%. Fugitive and waste emissions combined were less than 1%.

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

695098.6

Start date

January 1 2018

End date

December 31 2018

Comment

We consider the CPFL Group's equity interest and the accounting included the stationary combustion emissions for power generation; mobile combustion of the fleet; emissions and removals related to cutting and planting of trees, fugitive emissions of air conditioners and SF6 and emissions by treatment of effluents. The EPASA Thermoelectric Plant (installed capacity 182,3 MW) operates to meet the contingencies of the Brazilian Interconnected Electric System and, in 2018, accounted for 28% of CPFL's Scope 1 emissions. It is important to note that the energy dispatch decision in Brazil (composition of hydrothermal generation every week) is made by the National Electric System Operator (ONS) based on prospective analyses forecast of future inflows scenarios, the expected growth of energy consumption and definition of expansion schedule of new power plants. In periods of favourable hydrology and high levels of water storage in the reservoirs of the system, the decision of generation in thermal power plants is minimized, giving priority to the hydroelectric generation. Due to the above exposed, there was a 9% decrease in total Scope 1 emissions between 2017 (759,900 tCO2e) and 2018 (695,098 tCO2e). CPFL Energia has 53.34% of shareholding in EPASA and in 2018, CPFL Energia held 51.56% of equity share of CPFL Renováveis.

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We have operations where we are able to access electricity supplier emission factors or residual emissions factors, but are unable to report a Scope 2, market-based figure

Comment

We consider the CPFL Group's shareholding for our inventory (this year our share stake in CPFL Renováveis changed to 99.94%). According to the GHG Protocol methodology, the acquisition and consumption electricity used in the company's operations and the losses by transmission and distribution of energy constitutes the Scope 2 emissions accounting. Due to the characteristic of the energy transmission system in Brazil being interconnected, the emission factor is calculated and disseminated by the Ministry of Science, Technology, Innovation and Communication. This factor considers the emission of greenhouse gas for all generated energy that has entered the system, thus being a unique factor for the Brazil of which we do not have management. These results are directly related to the increase in the national interconnected system (SIN) emission factor (1.3%) and the maintenance of technical losses indicators. Our technical losses rate is 6.13% (2% less than 2018), a benchmark in Brazilian power sector. We stepped up our efforts to reduce global energy losses in our distribution network, acting from increased the number of inspections and public lighting re-registration campaigns. The market-based approach is growing and CPFL believes that this is a trend, so the company has been developing a lot of initiatives to be prepared to this new scenario. In 2018, we structured our low carbon portfolio and created a centralized portfolio management framework for carbon credits and renewable energy seals. In this way, we encourage the market-based approach by providing I-RECs to our customers.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

359285.47

Scope 2, market-based (if applicable)

<Not Applicable>

Start date

January 1 2019

End date

December 31 2019

Comment

Since 2017, we have presented our inventory in the Annual Report through the filter of shareholding structure, which allows us to proportionally account for the emissions of the generation assets in which we hold a stake (this year our share stake in CPFL Renováveis changed to 99.94%). According to the GHG Protocol methodology, the Scope 2 emissions accounting are constituted by the acquisition and consumption electricity used in the company's operations and the technical losses that occur during the transmission and distribution of energy. In 2019, we distributed 68.1 TWh (an increasing by 1.3%) for the 9.8 million customers of the 687 municipalities in our concession area. In 2019, the Scope 2 emissions amounted to 359 thousand tons, an increase by 3.4% over the previous year. Electricity consumption emissions were 7,496.44 tons of CO2 that represents 2% of total Scope 2 emissions. Technical losses emissions were 351,789.05 tons of CO2 in 2019, as the 98% of Scope 2 emissions. Our DisCos are responsible for 98.66% of scope 2 emissions. Power generation is responsible for 1.26% and services and commercialization companies are responsible for less than 1%. These results are directly related to the increase in the national interconnected system (SIN) emission factor (1.3%) and the maintenance of technical losses indicators. Our technical losses rate is 6.13% (2% less than 2018), a benchmark in Brazilian power sector. We stepped up our efforts to reduce global energy losses in our distribution network, acting from increased the number of inspections and public lighting re-registration campaigns, and intensified disconnections in irregular areas. In addition, we redoubled the fight against administrative losses of energy by adopting a system that allows us to cross-reference large volumes of information across several databases and identify possible process failures, reaching a record level of energy recovery.

Past year 1

Scope 2, location-based

347371.9

Scope 2, market-based (if applicable)

<Not Applicable>

Start date

January 1 2018

End date

December 31 2018

Comment

In 2018, we distributed 67.2 TWh of energy for the 9.6 million customers (less than in 2019) of the 687 municipalities in our concession area. Electricity consumption emissions were 3,209.4 tons of CO2, which represents 1% of total Scope 2 emissions. Technical losses emissions were 344.162,5 tons of CO2 in 2018. Our technical losses rate is 6.22% (a little bit more than in 2019), a benchmark in Brazilian power sector. In 2018, we stepped up our efforts to reduce global energy losses in our distribution network. We increased the number of inspections and public lighting re-registration campaigns, and intensified disconnections in irregular areas. However, the emission factor of the National Interconnected System - SIN has decreased by 20%, which has a direct impact on the way in which GHG emissions are accounted for. However, due to the renewable portfolio of CPFL representing 95.5% of the total energy generated, we are implicitly transmitting the environmental attribute of the renewable energy generated by the company to our customers.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

26494.3

Emissions calculation methodology

The CPFL's GHG Inventory was prepared via CLIMAS, a calculation software developed by WayCarbon, which has a database with the up to date emission factors available for each type of source (for example, the Brazilian GHG Protocol Program for Brazil, National Energy Balance; Ministry of the Environment and Ministry of Science, Technology, Innovation and Communication. When the emission factor is not available, internationally accepted references such as GHG Protocol, IPCC, EPA, and DEFRA are used. The activities data with emissions associated were inserted into the software. Then the information was converted into emissions. We used the IPCC AR4 GWP values and as a result, we have emissions by type of GHG and biogenic emissions for each activity.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

This category declined due to the emissions reclassification between 2018 and 2019. In addition, 2019 was a period without the occurrence of major works for the construction of power plants, contributing to the emissions reduction. Emissions in this category include goods and services in support of our productive activity. Calculation was performed using the Brazil GHG Protocol guidelines, with the data obtained by focal points and loaded on the WayCarbon CLIMAS software. From a parameterization of emission sources, it was possible to map the activities that fall into this category. The results presented consider the shareholdings of the CPFL group.

Capital goods

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

CPFL Energia elaborates the GHG emissions inventory by operational control and by equity share and this category is not applicable for the present results.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

CPFL is re-evaluating the boundaries of its inventory, particularly in the value chain, ie, Scope 3 emissions. This revaluation includes identifying applicable emission factors and assessing the materiality of emission source.

Upstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

CPFL is re-evaluating the boundaries of its inventory, particularly in the value chain, ie, Scope 3 emissions. This revaluation includes identifying applicable emission factors and assessing the materiality of emission source.

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

3012.4

Emissions calculation methodology

The CPFL's GHG Inventory was prepared via CLIMAS, a calculation software developed by WayCarbon, which has a database with the up to date emission factors available for each type of source (for example, the Brazilian GHG Protocol Program for Brazil, National Energy Balance; Ministry of the Environment and Ministry of Science, Technology, Innovation and Communication. When the emission factor is not available, internationally accepted references such as GHG Protocol, IPCC, EPA, and DEFRA are used. The activities data with emissions associated were inserted into the software. Then the information was converted into emission. We used the IPCC AR4 GWP values and as a result, we have emissions by type of GHG and biogenic emissions for each activity.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

We have a waste management program that identifies and classifies disposable materials in our operations. For hazardous waste (class I), we have storage and transportation standards, in addition to appropriate forms of disposal that comply with current legislation. In the energy-distribution segment, the generation and proper disposal of waste materials are critical in guaranteeing our businesses' sustainable performance. To reduce our environmental footprint, we have addressed these issues in our Sustainability Plan commitments. Our goal is to refurbish and reuse at least 40,000 pieces of equipment in the distribution networks by 2024 and to direct 100% of the main components removed from the network to recycling or reverse chain systems. To this end, and based on the principle of the circular economy, we have structured a more efficient solution to treat 640 tonnes of waste generated monthly by DisCos located in the state of São Paulo. Every month our Equipment Refurbisher evaluates approximately 765 transformers and voltage regulators that would otherwise be discarded and manages to rehabilitate 60% of them for reuse. Among the materials that need to be disposed of, copper is sent to cable factories, which recycle the material and return it to the company at a lower cost compared to new products. For other types of waste, such as utility poles and electric insulators, we are able to add value and sell them to licensed and approved recycling companies and groups. In the state of São Paulo, 100% of our waste is reused, and we are evaluating mechanisms to expand the practice to Rio Grande do Sul. In 2019, emissions decreased by 38%. Our waste is segregated and 35% that is sent to landfill, 1% for composting and 64% are oils that are sent to co-processing. Calculation was performed using the Brazil GHG Protocol guidelines, with the data obtained by focal points and loaded on the WayCarbon CLIMAS software. From a parameterization of emission sources, it was possible to map the activities that fall into this category. The results presented consider the shareholdings of the CPFL group.

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

2623.4

Emissions calculation methodology

The CPFL's GHG Inventory was prepared via CLIMAS, a calculation software developed by WayCarbon, which has a database with the up to date emission factors available for each type of source (for example, the Brazilian GHG Protocol Program for Brazil, National Energy Balance; Ministry of the Environment and Ministry of Science, Technology, Innovation and Communication. When the emission factor is not available, internationally accepted references such as GHG Protocol, IPCC, EPA, and DEFRA are used. The activities data with emissions associated were inserted into the software. Then the information was converted into emission. We used the IPCC AR4 GWP values and as a result, we have emissions by type of GHG and biogenic emissions for each activity.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

In 2019, this category increased by 41% mainly as a result of the integration with CPFL Renováveis. In this category, we accounted all employee air travels in 2019. Calculation was performed using the Brazil GHG Protocol guidelines, with the data obtained by focal points and loaded on the WayCarbon CLIMAS software. From a parameterization of emission sources, it was possible to map the activities that fall into this category. The results presented consider the shareholdings of the CPFL group.

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

686.04

Emissions calculation methodology

The CPFL's GHG Inventory was prepared via CLIMAS, a calculation software developed by WayCarbon, which has a database with the up to date emission factors available for each type of source (for example, the Brazilian GHG Protocol Program for Brazil, National Energy Balance; Ministry of the Environment and Ministry of Science, Technology, Innovation and Communication. When the emission factor is not available, internationally accepted references such as GHG Protocol, IPCC, EPA, and DEFRA are used. The activities' data with emissions associated were inserted into the software. Then the information was converted into emission. We used the IPCC AR4 GWP values and as a result, we have emissions by type of GHG and biogenic emissions for each activity.

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

The 2019 result had an increase of 14% in emissions in this category. This estimate was based on chartered bus transportation and we are studying the accounting of emissions from employees using another mode of transport. Calculation was performed using the Brazil GHG Protocol guidelines, with the data obtained by focal points and loaded on the WayCarbon CLIMAS software. From a parameterization of emission sources, it was possible to map the activities that fall into this category. The results presented consider the shareholdings of the CPFL group.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Not applicable for CPFL Energia.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

CPFL is re-evaluating the boundaries of its inventory, particularly in the value chain, ie, Scope 3 emissions. This revaluation includes identifying applicable emission factors and assessing the materiality of emission source.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Not applicable for CPFL Energia.

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Not applicable for CPFL Energia.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Not applicable for CPFL Energia.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Not applicable for CPFL Energia.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Not applicable for CPFL Energia.

Investments

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Not applicable to CPFL Energia. The emissions inventory is presented considering the group's shareholdings.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Not applicable for CPFL Energia.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

Not applicable for CPFL Energia.

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	5031588.31	Yes. Biogenic Emissions are related to carbon dioxide removed from the atmosphere during the photosynthesis and, thus, it is possible to consider these emissions as "carbon neutral". Our biogenic emissions total 5,031,588.31 tCO2, considering the CPFL Energia shareholding. This result are 80% higher than in 2018, due to the total incorporation of CPFL Renováveis in our organizational structure. Burning of biomass (bagasse from sugar cane and wood) in the CPFL Renováveis generating units represents 99.91% of this amount. The rest 0.09% is related with biofuels used in the commercial fuels that supply our fleet - in Brazil, by federal regulation, diesel is composed of 11% biodiesel and gasoline contains 27% anhydrous ethanol.

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

26.21

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

784639

Metric denominator

Other, please specify (Total net revenue (MM BRL))

Metric denominator: Unit total

29.93

Scope 2 figure used

Location-based

% change from previous year

30

Direction of change

Decreased

Reason for change

The EPASA Thermoelectric Plant (installed capacity 182.3 MW) operates to meet the contingencies of the Brazilian Interconnected Electric System and, in 2019, was responsible for 38% of CPFL's Scope 1 emissions (162,014.23 tCO2e). As of 2019, the indicators consider the integration of CPFL Renováveis into our organizational structure. Thus, the emission limits were redesigned and, although the 19.6% increase in the volume of energy generated, emissions also have a new scope. CPFL Renováveis' biomass generation (installed capacity 369.8 MW) emitted 24% (102,687.86 tCO2). It is important to note that the energy dispatch decision in Brazil (composition of hydrothermal generation every week) is made by the National Electric System Operator (ONS) based on prospective analyzes forecast of future inflows scenarios, the expected growth of energy consumption and definition of expansion schedule of new power plants. In periods of favourable hydrology and high levels of water storage in the reservoirs of the system, the decision of generation in thermal power plants is minimized, giving priority to the hydroelectric generation. Due to the above exposed, there was a 30% decrease in total Scope 1 emissions between 2018 (695,098.6 tCO2e) and 2019 (425,354.30 tCO2e). Our Scope 2 emissions increased about 3.4% (2018/2019) due the change of Interconnected System factor. The emission factor is calculated and disseminated by the Ministry of Science, Technology, Innovation and Communication and considers the emission of greenhouse gas for all generated energy that has entered the system, thus being a unique factor for the Brazil. The financial results achieved in 2019 confirm the assertiveness of our strategy and the effectiveness of the actions conducted by CPFL Energia. Our net operating revenue was 6.3% higher than in 2018, reaching R\$ 29.9 billion. Ebitda, which measures operating cash flow, advanced 13.4% to R\$ 6.394 billion, and net income totaled R\$ 2.7 billion, up 12% from the previous year. We also invested R\$ 2.25 billion in the period. Our gross operating revenue totaled R\$ 45,009 million in 2019, an increase of 5.5% over the previous year.

Intensity figure

0.06

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

784639

Metric denominator

megawatt hour generated (MWh)

Metric denominator: Unit total

13100000

Scope 2 figure used

Location-based

% change from previous year

37

Direction of change

Decreased

Reason for change

The EPASA Thermoelectric Plant (installed capacity 182.3 MW) operates to meet the contingencies of the Brazilian Interconnected Electric System and, in 2019, was

responsible for 38% of CPFL's Scope 1 emissions (162,014.23 tCO₂e). As of 2019, the indicators consider the integration of CPFL Renováveis into our organizational structure. Thus, the emission limits were redesigned and, although the 19.6% increase in the volume of energy generated, emissions also have a new scope. CPFL Renováveis' biomass generation (installed capacity 369.8 MW) emitted 24% (102,687.86 tCO₂). It is important to note that the energy dispatch decision in Brazil (composition of hydrothermal generation every week) is made by the National Electric System Operator (ONS) based on prospective analyzes forecast of future inflows scenarios, the expected growth of energy consumption and definition of expansion schedule of new power plants. In periods of favourable hydrology and high levels of water storage in the reservoirs of the system, the decision of generation in thermal power plants is minimized, giving priority to the hydroelectric generation. Due to the above exposed, there was a 30% decrease in total Scope 1 emissions between 2018 (695,098.6 tCO₂e) and 2019 (425,354.30 tCO₂e). Our Scope 2 emissions increased about 3.4% (2018/2019) due the change of Interconnected System factor. The emission factor is calculated and disseminated by the Ministry of Science, Technology, Innovation and Communication and considers the emission of greenhouse gas for all generated energy that has entered the system, thus being a unique factor for the Brazil. The financial results achieved in 2019 confirm the assertiveness of our strategy and the effectiveness of the actions conducted by CPFL Energia. Our net operating revenue was 6.3% higher than in 2018, reaching R\$ 29.9 billion. Ebitda, which measures operating cash flow, advanced 13.4% to R\$ 6.394 billion, and net income totaled R\$ 2.7 billion, up 12% from the previous year. We also invested R\$ 2.25 billion in the period. Our gross operating revenue totaled R\$ 45,009 million in 2019, an increase of 5.5% over the previous year.

Intensity figure

0.011

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO₂e)

784639

Metric denominator

megawatt hour transmitted (MWh)

Metric denominator: Unit total

68900000

Scope 2 figure used

Location-based

% change from previous year

26.6

Direction of change

Decreased

Reason for change

The EPASA Thermoelectric Plant (installed capacity 182.3 MW) operates to meet the contingencies of the Brazilian Interconnected Electric System and, in 2019, was responsible for 38% of CPFL's Scope 1 emissions (162,014.23 tCO₂e). As of 2019, the indicators consider the integration of CPFL Renováveis into our organizational structure. Thus, the emission limits were redesigned and, although the 19.6% increase in the volume of energy generated, emissions also have a new scope. CPFL Renováveis' biomass generation (installed capacity 369.8 MW) emitted 24% (102,687.86 tCO₂). It is important to note that the energy dispatch decision in Brazil (composition of hydrothermal generation every week) is made by the National Electric System Operator (ONS) based on prospective analyzes forecast of future inflows scenarios, the expected growth of energy consumption and definition of expansion schedule of new power plants. In periods of favourable hydrology and high levels of water storage in the reservoirs of the system, the decision of generation in thermal power plants is minimized, giving priority to the hydroelectric generation. Due to the above exposed, there was a 30% decrease in total Scope 1 emissions between 2018 (695,098.6 tCO₂e) and 2019 (425,354.30 tCO₂e). Our Scope 2 emissions increased about 3.4% (2018/2019) due the change of Interconnected System factor. The emission factor is calculated and disseminated by the Ministry of Science, Technology, Innovation and Communication and considers the emission of greenhouse gas for all generated energy that has entered the system, thus being a unique factor for the Brazil. The financial results achieved in 2019 confirm the assertiveness of our strategy and the effectiveness of the actions conducted by CPFL Energia. Our net operating revenue was 6.3% higher than in 2018, reaching R\$ 29.9 billion. Ebitda, which measures operating cash flow, advanced 13.4% to R\$ 6.394 billion, and net income totaled R\$ 2.7 billion, up 12% from the previous year. We also invested R\$ 2.25 billion in the period. Our gross operating revenue totaled R\$ 45,009 million in 2019, an increase of 5.5% over the previous year.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO ₂ e)	GWP Reference
CO ₂	325967.22	IPCC Fourth Assessment Report (AR4 - 100 year)
CH ₄	37932.55	IPCC Fourth Assessment Report (AR4 - 100 year)
N ₂ O	60610.22	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	48.5	IPCC Fourth Assessment Report (AR4 - 100 year)
SF ₆	795.81	IPCC Fourth Assessment Report (AR4 - 100 year)

C-EU7.1b

(C-EU7.1b) Break down your total gross global Scope 1 emissions from electric utilities value chain activities by greenhouse gas type.

	Gross Scope 1 CO2 emissions (metric tons CO2)	Gross Scope 1 methane emissions (metric tons CH4)	Gross Scope 1 SF6 emissions (metric tons SF6)	Total gross Scope 1 emissions (metric tons CO2e)	Comment
Fugitives	0	0	0.034	795.81	Fugitive emissions are less than 1% of Scope 1. Emissions from the Fugitive category were mainly derived from SF6 exhaust in the transmission and distribution systems.
Combustion (Electric utilities)	161895.7	1513.5	0	259992.55	Stationary combustion emissions are equivalent to 61.1% of our Scope 1. Power generation emissions are included in this category. We also account for N2O emissions that add up to 202.2 tonnes, completing the total volume of CO2e emissions for this category.
Combustion (Gas utilities)	0	0	0	0	Not applicable
Combustion (Other)	18451.23	3.3	0	18884.58	Mobile combustion emissions from our fleet are only 4.4% of our Scope 1. We also account for N2O emissions that add up to 1.1772 tonnes, completing the total volume of CO2e emissions for this category.
Emissions not elsewhere classified	145616.01	0	0	145616.01	Emissions from land use are accounted for and calculated according to the GHG Protocol methodology. With the maturing of data collection and calculations, land use became a significant category of emissions, reaching approximately 34.2% of Scope 1 emissions. We also calculate emissions for effluent treatment, which account for 12.57 tons of CO2e emissions.

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Brazil	425354.3

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

By facility

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Corporate	0
Distribution	152642.52
Generation	264957.8
Solutions (Services and Trading)	7753.98

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Baesa	8.47	27	51
Centrais geradoras	0	21	46
Ceran	41.96	29	51
CPFL Atende	0.1	22	49
CPFL Brasil	40.81	22	47
CPFL Eficiência Energética	11.25	22	47
CPFL Energia	0	22	47
CPFL Geração	45.64	22	47
CPFL Jaguari Geração	80.66	22	46
CPFL Paulista	28058.39	22	47
CPFL Piratininga	5396.9	22	47
CPFL Renováveis	102687.86	23	46
CPFL Santa Cruz	19141.52	22	47
CPFL Serviços	7701.58	21	46
CPFL Total	0.24	22	47
Enercan	49.06	27	51
Epasa	162014.23	7	34
Foz do Chapecó	29.92	27	53
Instituto CPFL	0	22	47
UHE Lageado	0	9	48
CPFL Pessoas	0	23	47
RGE	100045.71	29	51
CPFL Finanças	0	23	47
CPFL Infra	0	23	47
CPFL Supre	0	23	47

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C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions, metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility activities	425354.3	<Not Applicable>	In scope 1, our emissions totalled 425,354 tCO2e, a reduction of 39% from the previous year. Composed of direct emissions from our operations, this category was impacted by less demand for power generation from Epasa and by the consolidation of CPFL Renováveis data proportional to our share stake - which increased to 99.94%. The emissions derived from Epasa's (installed capacity 182,3 MW) thermoelectric plant operation had a reduction in fuel consumption in 2019 due a lower generation (dispatched only 15% of its capacity in 2019). This was the result of an increase in the participation from other sources in Brazilian energy generation matrix, reducing the need to put thermal power plants online. This reduction was significant to reach the 2019 emissions figures, because this thermoelectric plant operates to meet the contingencies of the Brazilian Interconnected Electric System. It is important to note that the energy dispatch decision in Brazil (composition of hydrothermal generation every week) is made by the National Electric System Operator (ONS) based on prospective analyses forecast of future inflows scenarios, the expected growth of energy consumption and definition of expansion schedule of new power plants. In periods of favourable hydrology and high levels of water storage in the reservoirs of the system, the decision of generation in thermal power plants is minimized, giving priority to the hydroelectric generation.
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?
Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	No change in combined scope 1 and scope 2 emissions from previous year resulting from change in renewable energy consumption.
Other emissions reduction activities	0	No change	0	The variation of the stationary combustion category comes from the emissions from the Epasa units (Termoparaíba and Termonordeste) that use fuel oil and diesel added to the biomass plants of CPFL Renováveis. In 2019, more favourable hydrological scenario reduced the need for thermal plants dispatch by the National System Operator (ONS), contributing to the reduction of 33% of this category from our scope 1 emissions compared to 2018.
Divestment	0	No change	0	No change in combined scope 1 and scope 2 emissions from previous year resulting from divestment.
Acquisitions	28455.85	Increased	52	In the past year, our activities in the generation segment were strengthened through the integration of CPFL Renováveis, the country's largest renewable energy generator, into our asset portfolio. The shares that State Grid owned in the company were acquired by the holding company CPFL Energia through a purchase and sale agreement, allowing us to take advantage of synergies, reduce costs, and boost efficiency, fostering continuity of our investments in renewable generation projects. Thanks to this operation, our installed capacity now totals 4.3 gigawatts (GW) in assets spread out across four of the country's five regions, making us the third-largest privately held company in terms of generation and the Brazilian leader in renewable energy. In 2019, we generated 13.1 terawatt-hours (TWh), which represents an increase of 19.5% from the previous year. Of this total, approximately 98.3% came from renewable sources. From 2019, the emissions inventory considers our participation in CPFL Renováveis. Especially in Scope 1, we observed an increase in emissions from stationary combustion from biomass burning (from 8% in 2018 to 23% in 2019).
Mergers	0	No change	0	No change in combined scope 1 and scope 2 emissions from previous year resulting from mergers.
Change in output	138330.3	Decreased	5	The 51% of emissions reduction in land use change activities impacted in Scope 1 emissions reduction by the company. This is due, among other reasons, to the 2019 period in which we did not have major construction works in progress. This category represents 34.2% of our current Scope 1.
Change in methodology	0	No change	0	No change in combined scope 1 and scope 2 emissions from previous year resulting from change in methodology.
Change in boundary	28455.85	Increased	52	In the past year, our activities in the generation segment were strengthened through the integration of CPFL Renováveis, the country's largest renewable energy generator, into our asset portfolio. The shares that State Grid owned in the company were acquired by the holding company CPFL Energia through a purchase and sale agreement, allowing us to take advantage of synergies, reduce costs, and boost efficiency, fostering continuity of our investments in renewable generation projects. Thanks to this operation, our installed capacity now totals 4.3 gigawatts (GW) in assets spread out across four of the country's five regions, making us the third-largest privately held company in terms of generation and the Brazilian leader in renewable energy. In 2019, we generated 13.1 terawatt-hours (TWh), which represents an increase of 19.5% from the previous year. Of this total, approximately 98.3% came from renewable sources. From 2019, the emissions inventory considers our participation in CPFL Renováveis. Especially in Scope 1, we observed an increase in emissions from stationary combustion from biomass burning (from 8% in 2018 to 23% in 2019).
Change in physical operating conditions	8925.77	Decreased	10	The variation of the stationary combustion category comes from the emissions from the Epasa units (Termoparaíba and Termonordeste) that use fuel oil and diesel added to the biomass plants of CPFL Renováveis. In 2019, more favourable hydrological scenario reduced the need for thermal plants dispatch by the National System Operator (ONS), contributing to the reduction of 33% of this category from our scope 1 emissions compared to 2018.
Unidentified	0	No change	0	No change in combined scope 1 and scope 2 emissions from previous year resulting from unidentified reasons.
Other	0	No change	0	No change in combined scope 1 and scope 2 emissions from previous year resulting from other reasons.

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 60% but less than or equal to 65%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	10729482	637627.82	11359533.56
Consumption of purchased or acquired electricity	<Not Applicable>	0	103882.73	103882.73
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	10729482	741510.55	11471992.55

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)

Residual Fuel Oil

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

568911.01

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

3.13721

Unit

metric tons CO2e per metric ton

Emissions factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Comment

This emission factor was used for the calculation of stationary combustion emissions from Epsa (thermoelectric with 182.3 MW installed capacity).

Fuels (excluding feedstocks)

Diesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

52166.56

MWh fuel consumed for self-generation of electricity

7576

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

2.64659

Unit

metric tons CO2e per m3

Emissions factor source

Brazilian GHG Protocol Program

Comment

This emission factor was used for the calculation of mobile combustion emissions. It is important to note that in Brazil there is a federal regulation for fuel blends: for diesel, the mix is 11% biodiesel and this percentage is considered for emissions calculations.

Fuels (excluding feedstocks)

Other, please specify (Gasoline)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

8924.9

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

1.73768

Unit

metric tons CO2e per m3

Emissions factor source

Brazilian GHG Protocol Program

Comment

This emission factor was used for the calculation of mobile combustion emissions. It is important to note that in Brazil there is a federal regulation for fuel blends: for gasoline, the mix is 27% ethanol, and this percentage is considered for emissions calculations.

Fuels (excluding feedstocks)

Biodiesel

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

6017.98

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

2.4644

Unit

metric tons CO2e per m3

Emissions factor source

Brazilian GHG Protocol Program

Comment

This emission factor was used for the calculation of mobile combustion emissions. It is important to note that in Brazil there is a federal regulation for fuel blends: diesel , the mix is 11% biodiesel and this percentage is considered for emissions calculations. This value presented consider CO2 biogenic (2.4560).

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

49.09

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

3.06076

Unit

metric tons CO2e per metric ton

Emissions factor source

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Comment

This emission factor was used for the calculation of mobile combustion emissions in CPFL Group's operations.

Fuels (excluding feedstocks)

Other, please specify (Ethanol)

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

16141.69

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

1.5876

Unit

metric tons CO2e per m3

Emissions factor source

Brazilian GHG Protocol Program

Comment

This emission factor was used for the calculation of mobile combustion emissions. It is important to note that in Brazil there is a federal regulation for fuel blends: for gasoline, the mix is 27% ethanol, and this percentage is also considered for emissions calculations. This value presented consider CO2 biogenic (1.5819).

Fuels (excluding feedstocks)

Bagasse

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

10707322.33

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

909.995

Unit

metric tons CO2e per metric ton

Emissions factor source

Brazilian GHG Protocol Program

Comment

This emission factor was used for calculation of stationary combustion emissions from CPFL Renováveis biomass units (369.8 MW installed capacity). This value presented does consider CO2 biogenic (892.68).

C-EU8.2d

(C-EU8.2d) For your electric utility activities, provide a breakdown of your total power plant capacity, generation, and related emissions during the reporting year by source.

Coal – hard

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Not applicable

Lignite

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Not applicable

Oil

Nameplate capacity (MW)

182.3

Gross electricity generation (GWh)

237.64

Net electricity generation (GWh)

224.3

Absolute scope 1 emissions (metric tons CO2e)

159836.9

Scope 1 emissions intensity (metric tons CO2e per GWh)

712.6

Comment

Considering the equity interest in each venture.

Gas

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Not applicable

Biomass

Nameplate capacity (MW)

369.8

Gross electricity generation (GWh)

1085.94

Net electricity generation (GWh)

1063.7

Absolute scope 1 emissions (metric tons CO2e)

97978.9

Scope 1 emissions intensity (metric tons CO2e per GWh)

92.11

Comment

Emission resulting from power biomass generation.

Waste (non-biomass)

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Not applicable

Nuclear**Nameplate capacity (MW)**

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Not applicable

Fossil-fuel plants fitted with CCS**Nameplate capacity (MW)**

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Not applicable

Geothermal**Nameplate capacity (MW)**

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Not applicable

Hydropower**Nameplate capacity (MW)**

2443.1

Gross electricity generation (GWh)

7957.84

Net electricity generation (GWh)

7801.8

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Considering Hydroelectric Power Plant, Small Hydroelectric Power Plant and Hydroelectric Generating Plants. Also considering equity stake in CPFL Renováveis. These plants does not have emissions.

Wind**Nameplate capacity (MW)**

1307.8

Gross electricity generation (GWh)

4097.2

Net electricity generation (GWh)

4015.29

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Considering the equity stake in CPFL Renováveis. These plants does not have emissions.

Solar**Nameplate capacity (MW)**

1.1

Gross electricity generation (GWh)

1.58

Net electricity generation (GWh)

1.55

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Considering the equity stake in CPFL Renováveis. These plants does not have emissions.

Marine**Nameplate capacity (MW)**

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Not applicable

Other renewable**Nameplate capacity (MW)**

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Not applicable

Other non-renewable

Nameplate capacity (MW)

0

Gross electricity generation (GWh)

0

Net electricity generation (GWh)

0

Absolute scope 1 emissions (metric tons CO2e)

0

Scope 1 emissions intensity (metric tons CO2e per GWh)

0

Comment

Not applicable

Total

Nameplate capacity (MW)

4304.1

Gross electricity generation (GWh)

13380.24

Net electricity generation (GWh)

13106.6

Absolute scope 1 emissions (metric tons CO2e)

257815.8

Scope 1 emissions intensity (metric tons CO2e per GWh)

19.67

Comment

Emission resulting from power generation in the respective shareholdings in EPASA (53.34%) and CPFL Renováveis (99.94%).

C-EU8.4

(C-EU8.4) Does your electric utility organization have a transmission and distribution business?

Yes

C-EU8.4a

(C-EU8.4a) Disclose the following information about your transmission and distribution business.

Country/Region

Brazil

Voltage level

Transmission (high voltage)

Annual load (GWh)

3327.18

Annual energy losses (% of annual load)

2

Scope where emissions from energy losses are accounted for

Scope 2 (location-based)

Emissions from energy losses (metric tons CO2e)

4990.77

Length of network (km)

13394.1

Number of connections

211

Area covered (km2)

401.82

Comment

Our activities in the transmission sector seek to take advantage of synergies between generation and distribution assets, with a focus on diversifying our portfolio through opportunities in niche businesses. Therefore, we direct investments to smaller operations, focusing on improvements in operational efficiency that also add value to the Group's generating units and benefit customers in our concession area. In 2019, we began the process of implementing three projects that were auctioned off by the National Electricity Regulatory Agency (ANEEL) at the end of the previous year: - Construction of the Maracanaú II substation in the state of Ceará; - CPFL Transmissão Sul I (Lot 5), which includes improvements in the Itá substation and 320 kilometers of transmission lines; - CPFL Transmissão Sul II (Lot 11), with the construction of two new substations and 85 kilometers of transmission lines, working in the states of Santa Catarina and Rio Grande do Sul. In the state of São Paulo, two business units already operate power transmission systems: CPFL Transmissão Piracicaba and CPFL Transmissão Morro Agudo. In this segment, the sharing of experiences and knowledge with State Grid can serve as a driver for our business. In Brazil, the company operates long-distance and high-voltage transmission networks, using the latest technologies to build more robust and intelligent systems. According to the methodology of the GHG Protocol we report as Scope 2 only the emissions of technical losses by transmission and distribution.

Country/Region

Brazil

Voltage level

Distribution (low voltage)

Annual load (GWh)

68054.6

Annual energy losses (% of annual load)

8.89

Scope where emissions from energy losses are accounted for

Scope 2 (location-based)

Emissions from energy losses (metric tons CO2e)

453754.05

Length of network (km)

329370

Number of connections

9757.01

Area covered (km2)

305400

Comment

We are the second largest company in the electricity distribution segment in Brazil in terms of the amount of energy sold, with a 14% share of the national market. Our four companies (CPFL Paulista, CPFL Piratininga, CPFL Santa Cruz and RGE) operate in the states of São Paulo, Rio Grande do Sul, Minas Gerais and Paraná, with a concession area that covers 687 municipalities and serves approximately 9.8 million customers. In 2019, we distributed approximately 68.1 TWh of energy in our concession areas, up 1.3% from the previous year. During the same period, our customer base increased by 1.8%. In recent years, the investments we have made in improving infrastructure, modernizing equipment and implementing new technological solutions have allowed us to achieve levels of quality that are a benchmark in the national market. This advancement is being accelerated with the unification of RGE's operations, concluded last year. With the standardization and centralization of processes, we are improving customer service and the supply of power in Rio Grande do Sul. Two projects illustrate our investment strategy in this segment. The first is the development and implementation of our Advanced Distribution Management System (ADMS), a platform that integrates a wide range of data and allows us to monitor assets with more agility and intelligence, facilitating the identification of possible failures and enabling a more efficient reestablishment of energy supply. The second initiative underway is our project to swap out and install smart meters in Group B consumers (low-voltage customers, such as homes, small businesses and rural properties) in the municipality of Jaguariúna, in the interior of São Paulo. This technology will allow us to remotely read meters and reduce losses, among other benefits. At the same time it will also give customers more control over how they use electricity, allowing them to change consumption habits to be more efficient and reduce costs.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description

Energy usage

Metric value

99952.93

Metric numerator

Energy consumed by company (MWh)

Metric denominator (intensity metric only)

not applicable

% change from previous year

230

Direction of change

Increased

Please explain

There was an increase in electricity consumption with the integration of Renewables in our generation portfolio.

Description

Land use

Metric value

145616

Metric numerator

CO2e emissions

Metric denominator (intensity metric only)

not applicable

% change from previous year

48

Direction of change

Decreased

Please explain

2019 was a period without the occurrence of major works for the construction of plants, contributing to the reduction of deforestation area and emission values.

Description

Other, please specify (Expansion of renewable generation installed capacity Hydroelectric Power Plant (SHPP), HGP (Hydroelectric Generating Plants), wind and solar)

Metric value

3752

Metric numerator

MW installed

Metric denominator (intensity metric only)

not applicable

% change from previous year

28

Direction of change

Increased

Please explain

In the past year, our activities in the generation segment were strengthened through the integration of CPFL Renováveis, the country's largest renewable energy generator, into our asset portfolio. The shares that State Grid owned in the company were acquired by the holding company CPFL Energia through a purchase and sale agreement, allowing us to take advantage of synergies, reduce costs, and boost efficiency, fostering continuity of our investments in renewable generation projects. Thanks to this operation, our installed capacity now totals 4.3 gigawatts (GW) in assets spread out across four of the country's five regions, making us the third-largest privately held company in terms of generation and the Brazilian leader in renewable energy. In 2019, we generated 13.1 terawatt-hours (TWh), which represents an increase of 19.5% from the previous year. Of this total, approximately 98.3% came from renewable sources.

C-EU9.5a

(C-EU9.5a) Break down, by source, your total planned CAPEX in your current CAPEX plan for power generation.

Primary power generation source	CAPEX planned for power generation from this source	Percentage of total CAPEX planned for power generation	End year of CAPEX plan	Comment
Hydropower	263400000	22	2024	We are investing in the construction of SHPP Cherobim with 28 MW capacity installed, in Paraná State.
Wind	337300000	29	2023	We will also invest in the construction of Gameleiras Wind Complex, with 81.7 MW capacity installed comprising four wind farms. Our expectation is that we will be able to begin operations at the Wind Complex ahead of schedule, a relevant strategy to ensure its economic competitiveness and return on investment.
Other, please specify (Other investments in generation portfolio)	557000000	49	2024	In 2019, we invested R\$ 2.25 billion in our operations, 9.3% more than the previous year. Over the next five years we expect Investment to keep up with our efficiency indicators and to implement improvements in our generation assets.

C-EU9.5b

(C-EU9.5b) Break down your total planned CAPEX in your current CAPEX plan for products and services (e.g. smart grids, digitalization, etc.).

Products and services	Description of product/service	CAPEX planned for product/service	Percentage of total CAPEX planned products and services	End of year CAPEX plan
Other, please specify (Transmission Capex)	Our activities in the transmission sector seek to take advantage of synergies between generation and distribution assets, with a focus on diversifying our portfolio through opportunities in niche businesses. Therefore, we direct investments to smaller operations, focusing on improvements in operational efficiency that also add value to the Group's generating units and benefit customers in our concession area. In 2019, we began the process of implementing three projects that were auctioned off by the National Electricity Regulatory Agency (ANEEL) at the end of 2020: - Construction of the Maracaná II substation in the state of Ceará; - CPFL Transmissão Sul I (Lot 5), which includes improvements in the Itá substation and 320 kilometers of transmission lines; - CPFL Transmissão Sul II (Lot 11), with the construction of two new substations and 85 kilometers of transmission lines, working in the states of Santa Catarina and Rio Grande do Sul	564000000	5	2024
Other, please specify (Distribution Capex)	Our investments in distribution are based on four large themes: a) Expansion and strengthening of the electric system Associated with Reliability Plan for Small Towns (PFAL) to increase until 2025 the number of small towns with a second source to 94%, through of works of the Medium Voltage Distribution System. b) Investment in digitalization and automation - Automatic Reclosers On the engineering front, our investments are directed towards the technological evolution of the network, with the installation of more intelligent and remote-controlled equipment. Automatic reclosers, capable of resuming operation automatically when there are improper interventions in the network, are an example of this project. c) Upgrade of management and operational support systems – ADMS in order to enable the growth of intelligent and remote-controlled devices The Advanced Distribution Management System (ADMS) will establish a new paradigm in how the Operation Centers restore power supply, in an optimized way. ADMS will unify on a single platform some Operation features that are currently managed on different systems, ensuring greater reliability and robustness of the entire solution. We will make progress on self-healing actions (automatic reconfiguration of the network in case of supply interruptions), in locating interruptions and dispatching of maintenance teams, in the identification of technical losses, and many other activities that we carry out daily to maximize operational quality and efficiency. d) Smart Metering project – group A in RGE Deployment of the telemetering project for C&I (commercial and industrial) consumers. O project consists in replace 6,643 conventional meters by smart meters and deploy a own Mesh Telecommunications Network.	11587000000	95	2024

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	Innovation is the lever that boosts our connection to the energy sector's modernization trends, allowing us to anticipate opportunities and create solutions that increase our operational efficiency and customer satisfaction. We believe that innovation culture must be continuously strengthened among our employees through training, proposal of new ideas, and openness to experimentation. In 2019, we invested approximately R\$ 44 million in Research and Development (R&D) programs. - Strengthening the innovation culture: Actions focused on employees to create a favorable environment for proposing and implementing new ideas - Relationship with startups: Based mainly on the CPFL Inova program, we seek to strengthen the company's relationship with the startups ecosystem and provide a favorable environment for experimentation, prototyping, testing and adjustments (iteration) - Structural projects Developing long-term innovations focused on the future of the electric sector, accompanying technology trends and new business models - Operational excellence projects Initiatives focused on improving the provision of services and current operations, aimed at increasing customer satisfaction.

C-CO9.6a/C-EU9.6a/C-OG9.6a

(C-CO9.6a/C-EU9.6a/C-OG9.6a) Provide details of your organization's investments in low-carbon R&D for your sector activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
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Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Other, please specify (Electric mobility)	Applied research and development	≤20%	0	Emotive: We studied impacts of EV on distribution grid, understanding requirements, predicting investments and discovering new business models. The main goals were: (i) Study impacts of EV in distribution grid, understand requirements and predict investments; (ii) Define adoption scenarios of EV in national fleet and analyze new business models in electrical mobility ecosystem; (iii) Testing the most diverse applications of EV technologies; (iv) Develop charging stations infrastructure, qualify suppliers and create a sustainable ecosystem; (v) Recommend the best regulatory framework for charging points in Brazil. To make this possible, we bought 14 electric vehicles and installed 25 charging stations, which 10 of them were public ones, applying the concept of a living lab. These cars were used as passenger cars at CPFL, as domestic cars by 3 employees, as operational cars for the electricians, and also we made some partnerships to run the cars as logistics fleet. With a total value of R\$ 17 MM, it was one of the biggest R&D projects of CPFL and one of the main Electric Mobility projects of Brazil.
Other, please specify (Distributed energy resources)	Applied research and development	≤20%	0	Solar Roofing Project We studied the possible impacts of the massive entry of solar photovoltaic generation into the distribution network. The study provided a real laboratory, with 231 installed systems, that enabled the comparison of network conditions before and after the entry of the distributed generation. The knowledge generated was shared with society and experts through articles, presentations, visits to the installation sites, and the offer of a basic course on photovoltaic solar energy for 72 participants and more than 900 interested people.
Smart meters	Applied research and development	≤20%	477016.22	Consumer Disaggregation This project search to develop methodologies and a pilot for identification and disaggregated monitoring of the consumption of residential and commercial loads, considering three approaches: a) Concentrated: based on a smart sensor at the main entrance b) Partially distributed: based on a smart sensor per circuit c) Distributed: based on an intelligent sensor per equipment It is believed that by knowing this information the consumer will have an active role in the efficient and rational use of electricity.
Steam turbine and/or other component upgrades	Pilot demonstration	≤20%	654675.1	Reducing Pressure Turbines Started in 2018, the objective of this project is to produce two Pressure Reducing Turbines of 260 kWp and 500 kWp. The first prototype was installed and it is in testing period. Focusing on pressure control is estimated that turbines can provide up to a 10% reduction in power consumption due to the characteristic of turbines to take advantage of thermal lose for renewable energy generation and energy efficiency.
Renewable energy	Applied research and development	≤20%	1841076.92	Sustainable Campus It was developed the living lab concept in three projects that include energy efficiency actions, installation of photovoltaic solar power plants, distributed generation analysis, building labeling and energy conservation, in the universities of Campinas (UNICAMP), Santa Maria (UFSM) and Federal Institute of Boituva (IFSP Boituva).
Other, please specify (Electric mobility)	Applied research and development	≤20%	1155893.61	Electric Bus Study the technical, economic and environmental impacts of the insertion of electric buses to transportation on university campuses, transforming Unicamp into a living laboratory for the intended studies. The main goals are: (i) To develop a living lab of electric mobility in the public transport system of UNICAMP to investigate the technical, economic and environmental impacts of the insertion of electric buses in urban mass transportation fleets. (ii) Develop technologies for monitoring and collecting data in real time for vehicles and charging stations. (iii) Develop methodologies to support the management of recharges with potential to reduce technical impacts, avoiding or delaying new investments in extensions and reinforcements of electric energy networks.
Energy storage	Applied research and development	≤20%	7055137.16	The Energy Storage Program has three Research & Development (R&D) projects to analyze the impacts of the insertion and use of energy storage systems with batteries in the entire chain of the electrical system, from generation to the final customer. Thus, the objective is to verify the role of energy storage systems in the quality and reliability of energy supply in an energy matrix that tends to diversify, like the Brazilian one, in addition to collaborating with the development of regulatory and business models. In the generation and transmission segments, the focus of the studies will be to analyze how the energy storage system can contribute to optimize the production of electrical energy from intermittent renewable sources - such as wind, in addition to analyzing the systemic benefits of this technology, such as, provide ancillary services, improvements in the quality of energy supply and the mitigation of possible investments in transmission lines. In the distribution segment, applications of storage systems for electrical networks will be developed, from the high and medium voltage substation to the low voltage consumer. This objective research, as mentioned, has three different approaches, such as: (i) an installation in a power substation (medium voltage connection); (ii) installation of two systems close to residential condominiums with massive insertion of photovoltaic generation (low voltage connection); (iii) installation of residential systems connected to photovoltaic generation. These systems aim to smooth out peak consumption in power, support voltage, load relief, absorb reverse flow of generation from photovoltaic roofs and the like. To assess the impact of battery use for end users, a company close to the Campinas region that uses diesel generators as a backup during peak system hours was selected. The aim is to analyze the technical and economic feasibility of using storage systems for operation with commercial customers, replacing diesel generation.
Infrastructure	Pilot demonstration	≤20%	3532904.36	Three ongoing Research and Development (R&D) projects are linked to the improvement of dam-safety monitoring processes: 1. Finite Elements: This project seeks to build a real-time monitoring system for dams using the finite element method, based on data from a fully automated station and instrument readings. The system will also allow us to carry out simulations in the structure under different scenarios. The plan is to complete this project by May 2021. 2. Slope Monitoring: The objective is to reconstruct hydroelectric dam slopes three-dimensionally through images made by specialized and autonomous drones. As a result, it will be possible to monitor the integrity of these structures and schedule safety and maintenance interventions. The plan is to complete this project by February 2021. 3. Tunnel Inspection: This seeks to develop an autonomous underwater vehicle to inspect the structure of adduction channels through 3D mapping. The plan is to complete this project by May 2021.
Digital technology	Applied research and development	≤20%	520041.75	WeTS and Pluvi.ON We have invested in mitigation and adaptation actions that minimize our exposure to risks and ensure a better level of readiness to deal with the irreversible effects of climate change. In regard to our DisCos, we highlight projects that incorporate innovation into management solutions. This is the case of the Weather Translator System (WeTS), which cross-references data from weather forecasts with our operational impact and criticality levels, in proportion to the number of interrupted customers. The system uses advanced artificial intelligence techniques and establishes 24-hour and 72-hour scenarios for our entire concession area. Implemented in October 2019 at the DisCos' Operations Centers, the initiative has helped with the planning and allocation of teams in case of storms. The project was also recognized in December with an award by Project Design Management magazine in the category of Innovative Projects in 2019. In 2020, WeTS will be improved thanks to a solution being developed by Pluvi.ON, a startup that participated in the CPFL Inova program and that will use low-cost weather stations to provide data that will provide detailed information to field operations.
Infrastructure	Applied research and development	≤20%	85204.52	Pumped-storage Hydro This project proposes to study comprehensively this aspect, considering technical, regulatory, economic and environmental issues, in order to propose a methodology of analysis and regulatory changes that make viable the development and contracting of PHS. The project will also present the state of the art in terms of operation and technology challenges by choosing a case study.
Other, please specify (Artificial Intelligence)	Pilot demonstration	≤20%	1162816.48	RDI This project proposes to decrease the number of unnecessary displacements in the field services of CPFL, develop a new software to support the operational team in the decision of dispatch or not of the emergency field service, develop a filter, a channel selector and a analytics to cover the entire process of the event generating unnecessary displacements We focus on cost reducing, identify the tasks that should be immediately attended and the tasks that should be kept in hold and minimize the number of consumers without electric power.
Infrastructure	Pilot demonstration	21-40%	682686.09	Vertical axis Wind Turbine Generate energy through the development of two vertical axis wind turbine prototypes of 50 KW and 250 KW power production Use of innovative proprietary technology and low cost energy production (when compared to other wind turbines – vertical or horizontal – available in the market) Development of an wind turbine prototype with vertical axis of 100% national technology Provide data to show trade off in this sector of energy production and increase future investments on it.
Infrastructure	Pilot demonstration	≤20%	9914.92	Robust Modeling Development of a simulation, calibration and fault diagnosis tool in the generating unit. For that, a computational code based on the mathematical model combined with an uncertainty analysis technique is used. Thus, considering typical operating conditions and also the main sources of uncertainties that influence the dynamic behavior of the system.
Infrastructure	Pilot demonstration	≤20%	5712.8	Optimization of Maintenance Plans for Generators Complete monitoring system (Hardware and Software), covering all signal conditioners and interface devices for the acquisition and reading of available variables (analog, digital signals and MODBUS protocol).
Smart grids	Applied research and development	0%	280980	Smart Operation System Development of an intelligent computational platform to operate distribution grids in normal conditions or in contingencies situations, considering self healing, status estimate, protection, Volt-Var control, energy balance, among others. The focus was on rural grids arrangements (low demographic density, seasonal loads, long extension distribution lines). Also, the project studied and tested the better telecommunication technologies for rural regions.
Other, please specify (Maintenance equipments)	Applied research and development	≤20%	287517.66	Mechanized pruning Development of a equipment applied to pruning trees, composed of a mechanical arm with cutting tools and sensors attached to allow operations along the energized line. For our DisCos, the focus is on promoting a safer and more harmonious interaction between vegetation and electrical networks. Since 2015, we have carried out the Arborização + Segura project, which replaces large trees with species that are better adapted to urban environments. This project contributes both to expanding green coverage in urban areas and to creating a financial return for the company in terms of avoided network-maintenance costs. In 2019, we carried out a calculation of return on investment (ROI) on this project's sustainability, which demonstrated the cost-benefit of replacing and planting trees more compatible with aerial networks.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

BrazilGHGProtocolProgram_Assurance_RINA.pdf
preliminar_Verificação.pdf

Page/ section reference

The entire document

Relevant standard

Other, please specify (ISO 14064-1, ISO 14064-3 and Brazil GHG Protocol Program Verification Standard)

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

BrazilGHGProtocolProgram_Assurance_RINA.pdf
preliminar_Verificação.pdf

Page/ section reference

The entire document

Relevant standard

Other, please specify (ISO 14064-1, ISO 14064-3 and Brazil GHG Protocol Program Verification Standard)

Proportion of reported emissions verified (%)

100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category

Scope 3 (upstream & downstream)

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

BrazilGHGProtocolProgram_Assurance_RINA.pdf
preliminar_Verificação.pdf

Page/section reference

The entire document

Relevant standard

Other, please specify (ISO 14064-1, ISO 14064-3 and Brazil GHG Protocol Program Verification Standard)

Proportion of reported emissions verified (%)

100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C1. Governance	Other, please specify (Climate Change Governance and responsibilities)	• GRI Sustainability Reporting	Verification under third party independent assurance of CPFL Annual Report 2019. The assurance scope, based on assurance methodology of sustainability reports of RINA, comprises the disclosure verification under GRI standards in 2019. RINA has developed a set of assurance protocols for Sustainability Communication based on the best practices provided in GRI Sustainability Reporting Standards. Climate Change issues is a material theme for CPFL Energia and we report our Strategy, Governance, Responsibilities, Actions and Programs in our Annual Report that undergoes independent third-party verification conducted by RINA. Annual Report_Assurance_RINA.pdf
C2. Risks and opportunities	Other, please specify (Risks and opportunities analyses)	• GRI Sustainability Reporting	Verification under third party independent assurance of CPFL Annual Report 2019. The assurance scope, based on assurance methodology of sustainability reports of RINA, comprises the disclosure verification under GRI standards in 2019. RINA has developed a set of assurance protocols for Sustainability Communication based on the best practices provided in GRI Sustainability Reporting Standards. Climate Change issues is a material theme for CPFL Energia. Risks and opportunities mapping is one of our action fronts on the issue of climate change. We published in our Annual Report our evaluation of risks and opportunities that identifies the main drivers and impacts associated with our business on this dimension, classifying them into three categories: changes in regulation, changes in physical parameters and changes in other parameters. Annual Report_Assurance_RINA.pdf
C3. Business strategy	Other, please specify (Climate Change Strategy)	• GRI Sustainability Reporting	Verification under third party independent assurance of CPFL Annual Report 2019. The assurance scope, based on assurance methodology of sustainability reports of RINA, comprises the disclosure verification under GRI standards in 2019. RINA has developed a set of assurance protocols for Sustainability Communication based on the best practices provided in GRI Sustainability Reporting Standards. Climate Change issues is a material theme for CPFL Energia. We published in our Annual Report our Strategic and Sustainability Plan 2020-2024, including our drivers, directives and commitments for the next years. Annual Report_Assurance_RINA.pdf
C5. Emissions performance	Other, please specify (GHG indicators)	• GRI Sustainability Reporting	Verification under third party independent assurance of CPFL GHG inventory. The scope of assurance was based on the GHG Protocol method, ISO 14064-3, ISO 14065, the verification guidance of the Brazilian GHG Protocol Program and the guidelines of INMETRO (National Institute of Metrology, Quality and Technology). The preparation of the emissions inventory is an essential tool for monitoring the company's climate performance. BrazilGHGProtocolProgram_Assurance_RINA.pdf preliminar_Verificação.pdf Annual Report_Assurance_RINA.pdf
C7. Emissions breakdown	Other, please specify (All facilities)	• GRI Sustainability Reporting	Verification under third party independent assurance of CPFL GHG inventory. The scope of assurance was based on the GHG Protocol method, ISO 14064-3, ISO 14065, the verification guidance of the Brazilian GHG Protocol Program and the guidelines of INMETRO (National Institute of Metrology, Quality and Technology). The preparation of the emissions inventory is an essential tool for monitoring the company's climate performance. The assurance investigated the information of all subsidiaries, based on the risk (ISO 14065 and Brazilian GHG Protocol Program) and significance criteria of operations and emissions. BrazilGHGProtocolProgram_Assurance_RINA.pdf preliminar_Verificação.pdf Annual Report_Assurance_RINA.pdf
C8. Energy	Other, please specify (All parameters)	• GRI Sustainability Reporting	Verification under third party independent assurance of CPFL GHG inventory. The scope of assurance was based on the GHG Protocol method, ISO 14064-3, ISO 14065, the verification guidance of the Brazilian GHG Protocol Program and the guidelines of INMETRO (National Institute of Metrology, Quality and Technology). The preparation of the emissions inventory is an essential tool for monitoring the company's climate performance. The assurance ensured that our calculations are correct and that there is no divergence in the conversions from the fuel consumption data to the amounts of energy (GJ and MWh). We followed the conversions and calculation standards of the IPCC, the National Energy Balance (national energy document) and the calculation tool of the Brazilian GHG Protocol Program. BrazilGHGProtocolProgram_Assurance_RINA.pdf preliminar_Verificação.pdf Annual Report_Assurance_RINA.pdf
C9. Additional metrics	Please select	• GRI Sustainability Reporting	Verification under third party independent assurance of CPFL Annual Report 2019. The assurance scope, based on assurance methodology of sustainability reports of RINA, comprises the disclosure verification under GRI standards in 2019. RINA has developed a set of assurance protocols for Sustainability Communication based on the best practices provided in GRI Sustainability Reporting Standards and assurance standards. Investments in Capex and R&D projects help us to drive the transition to a more sustainable and intelligent way of producing and consuming energy, maximizing our positive impacts on the community and the value chain. Annual Report_Assurance_RINA.pdf
C11. Carbon pricing	Please select	• GRI Sustainability Reporting	Verification under third party independent assurance of CPFL Annual Report 2019. The assurance scope, based on assurance methodology of sustainability reports of Rina, comprises the disclosure verification under GRI standards in 2019. In the Annual Report, CPFL reports its strategy on carbon pricing, as well as its carbon credit sales. These data were audit by Rina. Annual Report_Assurance_RINA.pdf
C12. Engagement	Please select	• GRI Sustainability Reporting	Verification under third party independent assurance of CPFL Annual Report 2019. The assurance scope, based on assurance methodology of sustainability reports of Rina, comprises the disclosure verification under GRI standards in 2019. Engagement is one of our action fronts on the issue of climate change. CPFL engages with peers, academia, associations and various organizations. In the Annual Report we disclose the main initiatives and discussions that we are involved. We also engage our Supply Chain through a complete portfolio of actions, including trainments on climate change issues. The main platform for this is the Rede de Valor ("Value Network"), which allows contracted companies to exchange experiences and best practices. We held three meetings in 2019, with the participation of 82 partners, to discuss issues such as quality, safety, sustainability, future scenarios, and new businesses. One practical outcome of these discussions was the creation of a training program about corporate greenhouse-gas emissions (GHG) inventories for these companies. Annual Report_Assurance_RINA.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

No, but we anticipate being regulated in the next three years

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

We believe that carbon pricing is a growing trend, and being prepared for this new model can represent a competitive advantage for companies.

To understand more about the market, CPFL has been participating in the Emission Trading System since 2017, an initiative created by the FGV together with a group of companies, that consists of a simulation of the cap and trade system, with the idea of training private sector to use this economic instrument so that it can provide the Brazilian government with suggestions on how to implement a similar system in Brazil. The main objective of the initiative is to balance actions to reduce emissions with the acquisition of carbon bonds in order to obtain the lowest economic cost for the management of GHG emissions in each cycle, and thus seek the abatement of emissions in the current cycle by some of the participating companies. Interactions occur in the primary markets (auctions) and in the secondary markets, in which the companies have the possibility of trading credits between them at any moment.

Besides this, in 2017, we started an internal pricing project involving several areas of our Group, with the objectives of developing a study and assessing the impacts and opportunities of carbon pricing for the Brazilian Electric sector, by segment (Generation, Distribution, Marketing and Services).

Already in 2018, we implemented a project to structure our low carbon portfolio and we have created a centralized portfolio-management structure for two major products: carbon credits and renewable energy seals. Our operating model creates opportunities for the sale of these products. In terms of carbon credits, we have projects registered both in the regulated market – the Clean Development Mechanisms (CDM) - and in the voluntary market - Verified Carbon Standard (VCS).

To prepare ourselves even more for an emission trading system and know the prices that are been practiced, we organized the largest auction of carbon credits in the voluntary market (VCS) in Brazil, based on Baesa, one of our HPP assets. Carried out on a web platform, four big players in the Brazilian, Swiss, Indian and English markets participated.

In 2019, we initiated the process of renewing the carbon credit-generation period of five CPFL Renováveis CDM projects, and in 2020 we started the verification of a project that will generate new credits for trading.

In addition, we also participate in other initiatives related to the theme, as in PMR Brazil, Global Compact Network in Brazil – Energy and Climate Thematic group.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations
Drive low-carbon investment
Identify and seize low-carbon opportunities

GHG Scope

Scope 1
Scope 2

Application

In Brazil, there is no carbon taxation system. However, in 2017 we started an internal pricing project involving several areas of our Group, with the objectives of developing a study and assessing the impacts and opportunities of carbon pricing for the Brazilian Electric sector, by segment (Generation, Distribution, Marketing and Solutions).

Actual price(s) used (Currency /metric ton)

50

Variance of price(s) used

Price ranges were defined based on several reference sources and through benchmarking with Brazilian companies and associations. Price forecasts currently range from USD 1 to USD 10 per tonCO_{2e}, depending on the scenario, year, and geography.

Type of internal carbon price

Shadow price

Impact & implication

CPFL uses an internal carbon prices to assess the impact of regulation on energy prices, asset's value, as well as to evaluate capital investments and new market opportunities. We also analyse the implication of a carbon market in Brazil, since we have many projects registered in CDM and VCS that can be used in the regulated market.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers

Yes, our customers

Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Run an engagement campaign to educate suppliers about climate change

% of suppliers by number

100

% total procurement spend (direct and indirect)

100

% of supplier-related Scope 3 emissions as reported in C6.5

100

Rationale for the coverage of your engagement

We have developed a structured model to assess and monitor our suppliers' performance. Starting with the process of registering suppliers at our database, we evaluate companies' financial aspects, technical performance, social and environmental issues, security, legal and documentary compliance, as well as their ethical alignment with our values. When suppliers are hired, we assess whether they are highly critical to operations or if they offer reputational risks for the company. In addition to monitoring and evaluation, we offer to our suppliers training opportunities in different themes, such as GHG Inventory and SDGs. Furthermore, CPFL works with engagement campaigns to our total supplier base (100%) through the Supplier Portal and the Supplier's Journal.

Impact of engagement, including measures of success

Some engagement actions are: - We have developed a manual to guide to our suppliers explaining how to prepare a GHG emission inventories. The document is available on the Supplier Portal, along with other guidelines they need to follow:

<https://www.cpf.com.br/institucional/fornecedores/Documents/Manual%20Elabora%20a%20Invent%20de%20Emiss%20de%20Carbono.pdf> - Articles in the supplier's newspaper about GHG inventories, eco-efficiency of energy and water consumption, carbon offsets and renewable energy seals, ESG criteria, etc.

Comment

We are committed to generating positive impacts throughout our value chain, and we therefore work to train and engage our suppliers. In all our interactions with this group, we seek to disseminate and support the adoption of good practices related to management and operation, in harmony with transformations in the electricity sector and the economic, social, and environmental trends

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Run an engagement campaign to educate suppliers about climate change

% of suppliers by number

30

% total procurement spend (direct and indirect)

60

% of supplier-related Scope 3 emissions as reported in C6.5

100

Rationale for the coverage of your engagement

We have developed a structured model to assess and monitor our suppliers' performance. Starting with the process of registering suppliers at our database, we evaluate companies' financial aspects, technical performance, security, legal and documentary compliance, as well as their ethical alignment with our values. In addition to monitoring and evaluation, we offer to our suppliers training opportunities. The main platform for our critical suppliers for this is "Rede de Valor" ("Value Network"), with allows contracted companies to exchange experiences and best practices. In 2019, we held three meetings, with the participation of 82 partners, to discuss issues such as quality, safety, sustainability, future scenarios, and new businesses. When suppliers are hired, we assess whether they are highly critical to operations or if they offer reputational risks for the company. Companies that fall under these conditions are classified as strategic and are included in our performance qualification platform - Supply Base Management (SBM). Based on this analysis, we come up with an evaluation grade, which directs partners to develop improvement plans and also supports future selection and hiring processes. In 2019, we evaluated a total of 256 partners on SBM. These companies, responsible for providing essential materials and services for different businesses' value chains, are classified as critical or strategic.

Impact of engagement, including measures of success

One practical outcome of these discussions was the creation of a training program about corporate greenhouse-gas emissions (GHG) inventories for these companies. x. Topics covered were: - 2030 Agenda for Sustainable Development and the SDGs - Climate change concepts, - GHG emissions impacts - The main concepts of the GHG Protocol method - Guidelines about how to use the emissions tool of the Brazilian GHG Protocol Program. We developed a face-to-face class, impacting 30% of our critical suppliers in the first year. The project will continue in the coming years and we expect to reach 100% of our network in the next 5.

Comment

We are committed to generating positive impacts throughout our value chain, and we therefore work to train and engage our suppliers. In all our interactions with this group, we seek to disseminate and support the adoption of good practices related to management and operation, in harmony with transformations in the electricity sector and the economic, social, and environmental trends going forward.

Type of engagement

Compliance & onboarding

Details of engagement

Included climate change in supplier selection / management mechanism
Climate change is integrated into supplier evaluation processes

% of suppliers by number

20

% total procurement spend (direct and indirect)

60

% of supplier-related Scope 3 emissions as reported in C6.5

100

Rationale for the coverage of your engagement

We have developed a structured model to assess and monitor our suppliers' performance. Starting with the process of registering suppliers on our database, we evaluate companies' financial aspects, technical performance, security, legal and documentary compliance, as well as their ethical alignment with our values. In addition to monitoring and evaluation, we offer suppliers with training opportunities. The main platform for our critical suppliers for this is the Rede de Valor ("Value Network"), with allows contracted companies to exchange experiences and best practices. In 2019, we held three meetings, with the participation of 82 partners, to discuss issues such as quality, safety, sustainability, future scenarios, and new businesses. When suppliers are hired, we assess whether they are highly critical to operations or if they offer reputational risks for the company. Companies that fall under these conditions are classified as strategic and are included in our performance qualification platform - Supply Base Management (SBM). Based on this analysis we come up with an evaluation grade, which directs partners to develop improvement plans and also supports future selection and hiring processes. In 2019, we evaluated a total of 256 partners on SBM. These companies, responsible for providing essential materials and services for different businesses' value chains, are classified as critical or strategic.

Impact of engagement, including measures of success

One practical outcome of these discussions was the creation of a training program about corporate greenhouse-gas emissions (GHG) inventories for these companies. x. Topics covered were: - 2030 Agenda for Sustainable Development and the SDGs - Climate change concepts, - GHG emissions impacts - The main concepts of the GHG Protocol method - Guidelines about how to use the emissions tool of the Brazilian GHG Protocol Program. At the end of the year, we received the inventory from some suppliers who underwent training. We applied a deskreview analysis to identify if there was any inconsistency and take advantage of the data for our emissions inventory.

Comment

We have a public commitment to Integrating sustainability aspects into the monitoring process for 100% of our critical suppliers by 2024. For the first year, we are engaging 20% of suppliers in a pilot program to implement and adjust the sustainability criteria.

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement

Education/information sharing

Details of engagement

Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

% of customers by number

100

% of customer - related Scope 3 emissions as reported in C6.5

0

Portfolio coverage (total or outstanding)

<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement

CPFL promotes several awareness campaigns with 100% of its customers about the efficient use of electricity. These campaigns are run on a variety of media - television, radio, newspapers, the Internet, social networks, and also on energy bills sent to customers. These campaigns follow the regulation of the Energy Efficiency Program, which adheres to ANEEL's regulatory guidelines.

Impact of engagement, including measures of success

In 2019, we invested a total of R\$ 72.4 million in the Energy Efficiency Program, which adheres to ANEEL's regulatory guidelines. The projects we developed have saved approximately 40,000 MWh of energy, enough to serve around 17,000 residential customers for one year. This saved volume also represents emissions of 2,248 tons of CO2, which is equivalent to the planting of 13,400 trees. Among the projects developed in 2019, UTI Domiciliar ("Home ICUs") stands out. This program was an RGE initiative that donated LED lamps and helped install 55 photovoltaic systems serving low-income consumers who use essential life-saving electrical devices at home to care for critical patients. The reduction in total energy consumption can reach 125.9 MWh and makes it possible for people to maintain these so-called Home ICUs. Another initiative under the Energy Efficiency Program is the CPFL nas Escolas ("CPFL in Schools") project, which raises student awareness and trains them in the conscientious use of electric energy. More than 1,300 teachers and 40,000 students at 400 educational institutions will benefit from this new phase of the initiative that will be completed in 2020. We should also mention the efficiency project at the Santa Maria Air Base, where a Photovoltaic System for Power Generation is being installed, along with replacement of conventional fixtures with LED lighting. Altogether, there are three photovoltaic generation systems that add a total of 125 kWp of power, capable of generating 160 MWh/year. We also replaced 6,358 lamps with LED technology lamps.

Type of engagement

Education/information sharing

Details of engagement

Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

% of customers by number

100

% of customer - related Scope 3 emissions as reported in C6.5

0

Portfolio coverage (total or outstanding)

<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement

CPFL Soluções is a unique platform that offers integrated solutions that generate value and increase customer competitiveness, taking advantage of all opportunities offered in the new energy market. The portfolio includes: - Energy Management: Complete consultancy so that customers can better manage their energy, with greater savings and predictability in their bills - Free Energy Market: Freedom to choose the energy supplier and negotiate prices, quantities, energy sources and commercial conditions - Distributed Generation: Self-production of energy from renewable sources - Energy Efficiency: Solutions to improve energy productivity and reduce costs and environmental impacts - Energy Services and Infrastructure: Diagnose, provide solutions, and execute electrical installation projects: construction, operation, maintenance, and retrofit The engagement campaigns includes 100% of CPFL Soluções customers. These campaigns run on a variety of media, as social networks, website and newsletters sent to the clients.

Impact of engagement, including measures of success

In 2019, CPFL Soluções achieved positive results with the delivery of projects serving customers across the country in segments including data centers, pulp and paper, automobiles, and wind power generation, among others. The unit has more than 2,100 customers, and in 2019 achieved 6% growth in EBITDA. Construction of the Americana Solar Plant in the city of Americana, São Paulo, was one of the highlights of 2019. With 3,320 generator modules, the new plant has 1.12 MW of capacity and annual generation capacity of 1,771 MWh – enough to supply 738 houses with average consumption of 200 kWh/month during the period. This plant's operation can reduce connected customers' energy bills by up to 95% and prevent the emission of 131 tons of carbon dioxide (CO2), the equivalent of planting around 900 trees.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

CPFL Energia promotes the engagement of its employees through internal campaigns. Some examples related to climate change issues are:

- Explanations about GHG Inventories; and our results;
- Presentation about our Performance in FGV's emissions trading projects;
- Concepts and actions on the theme of renewable energy seals;
- We highlight some emission reduction projects and also a mapping of CPFL's contribution to the achievement of the SDGs.
- Rational use of energy and water within the Company's facilities, correlating energy efficiency with GHG emission reduction. Internal campaigns are carried through digital media in existing communication channels, such as Intranet and through the display of banners and posters at our headquarters and offices.
- We provide the Global Compact platform for training, redirecting classes to the themes of Ethics, Human Rights, Climate Change and SDGs. There are more than 50 courses available to our 14,000 employees.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

- Direct engagement with policy makers
- Trade associations
- Funding research organizations
- Other

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Carbon tax	Support	CPFL actively participates in the discussions with the Energy Research Company (EPE), the Ministry of Finance, FMBC, among others, with the PMR (World Bank), whose objective is to evaluate the ideal model for implementing a carbon pricing mechanism in Brazil.	CPFL Energia supports and contributes to the creation of a cap and trade scheme in Brazil.
Other, please specify (Emissions regulation)	Support	CPFL supports the São Paulo Agreement, which aims to encourage companies in São Paulo to make voluntary commitments to reduce greenhouse gas emissions, in order to contain global warming below 2°C, confirming the commitment of the Government of the State of São Paulo. Voluntary membership will be automatically renewed until 2030 and aims to induce a reduction in GHGs in the next 10 years. The Agreement also provides for the recognition of signatories as members of the community of leaders in climate change, besides government technical support. This action will encourage the implementation of new technologies and innovative solutions, highlighting the role of the State in the climate agenda.	CPFL, as other signatories of the São Paulo Agreement, recognizes the need to reduce GHG emissions and sets targets for this purpose.
Mandatory carbon reporting	Support	CPFL supports the Task Force on Climate risk Financial Disclosure where global business leaders have urged G20 nations to formally accept the recommendations of the FSB Task Force on Climate-related Financial Disclosure and where CEOs of major financial services companies joined forces with industrial giants to support disclosure of material financial risks from climate change.	CPFL, as other signatories of the TCFD, recognizes that greater disclosure of the financial risks and opportunities they face from climate change is a critical tool in delivering the Paris Agreement.
Cap and trade	Support	Since 2016, CPFL Energia participates in the Simulation developed by FGVces. The Simulation has a seat on the PRM Advisory Council and the results obtained in the practical exercise are constantly taken to the PMR working group. FGVces worked on the topic at the Latin American Forum on Carbon Pricing, which discussed international experiences on carbon pricing; the experiences in Brazil with the Emissions Trading Simulation and also the previous results of the PMR Brazil Project (Partnership for Market Readiness). These experiences contributes greatly to the private sector's network positioning in the theme.	The initiative aims to create and disseminate knowledge, among companies, about the emissions trading system (SCE) functioning, its implications for business and its contribution to the achievement of goals for reducing greenhouse gas emissions (GHG) cost-effectively. CPFL Energia supports the creation of a cap and trade scheme in Brazil.
Clean energy generation	Support	CPFL Energia is committed to generating value for all stakeholders, acting as a protagonist to support the power sector improvement and foster Brazil's sustainable development. In this way, the company made contributions to the legislative proposals for the power sector remodelling (mainly PL 232/2016 and PL 1917/2015) that increase the competitiveness of renewable energy generation.	CPFL contributes in favour of projects that increase the competitiveness of renewable power generation through the pricing of its attributes, and also supports regulations that enable the energy consumer to have more information about their consumption, generating savings and energy efficiency (hourly market price, consumption maps, etc.).

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

ABEEOLICA - Associação Brasileira de Energia Eólica

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Established in 2002, ABEEólica, the Brazilian Wind Energy Association, is a non-profit institution that brings together and represents the wind energy in this country. Members come from all links in the wind energy chain. Since it was created, ABEEólica has effectively contributed to the development and recognition of wind energy as a competitive, clean, renewable, low-impact source of energy, and a strategic element of this country's energy matrix.

How have you influenced, or are you attempting to influence their position?

The entity evaluates mechanisms to improve environmental licensing processes, subsidies for renewable generation, rules for auctions, and other aspects relevant to the development of wind power in generation. We are on the Board.

Trade association

Global Compact Network in Brazil

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Created in 2003, Brazil Network is linked to the United Nations Development Program (UNDP) and responds to the headquarters of the Global Compact in New York. The projects conducted in the country are developed within the following Thematic Groups (WGs): Water and Sanitation, Food and Agriculture, Energy and Climate, Human Rights and Labor, Anti-Corruption and SDG (the latter to engage companies in relation to 2030 Agenda). Currently, 30 initiatives are underway in these WGs, with the involvement of hundreds of companies, as well as 12 UN agencies and seven government agencies.

How have you influenced, or are you attempting to influence their position?

CPFL is member of the Board as a president and participates in the Brazilian Committee of the Global Compact (CBPG). We are engaged in its strategy and operations with the 10 principles, concerning human rights, labour, environment and anti-corruption, as well as in taking actions to advance on the UN Sustainable Development Goals. We also participate in two working groups: - WG Energy and Climate: The Energy and Climate Theme Group (GTEC) emerged in 2015 and works in the light of SDG 7 (Ensuring reliable, sustainable, modern and affordable access to energy for all) and SDG 13 (Action Against the Global Climate Change), developing activities and projects especially focused on mitigation, adaptation and climate financing. In recent years, CPFL has participated actively, leading two researches: Climate Finance Dialogues and Integration of SDG in the Brazilian Electricity Sector. More information at (in Portuguese): <http://pactoglobal.org.br/energia-e-clima/> - WG SDG: The SDG Thematic Group (WG) promotes the engagement of Brazilian companies and organizations with the 17 Sustainable Development Goals (SDG). By disseminating and training around this agenda, partnerships and articulation with public policies, the WG advocates the integration of SDG into the business strategy, with the measurement and mitigation of negative impacts, enhancement of positive impacts and transparent communication of results. It develops its own initiatives, as well as actions in partnership with other organizations and coalitions, with which it shares the challenge of engaging the Brazilian private sector in reaching Agenda 2030. More information at (in Portuguese): <http://pactoglobal.org.br/ods-2/>

Trade association

Abraceel - Associação Brasileira dos Comercializadores de Energia (Brazilian Association of Energy Traders)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Abraceel is an association that defends free market competition as an instrument to promote supply efficiency and security in the areas of electricity, ethanol and natural gas, as well as stimulating the growth of carbon credit negotiations. The association works with society in general, opinion makers, government agencies, other organizations in the areas of electricity, ethanol, natural gas and credits and economic agents in general.

How have you influenced, or are you attempting to influence their position?

Discussed topics including guarantees for the market's financial sustainability, sustainably opening the free market, and hydrological risk (GSF). Our participation generates benefits in the preparation of joint proposals sent to the executive branch, regulatory bodies and the Electrical Energy Trading Chamber. We are on the Association's Board.

Trade association

Center for Sustainability Studies - FGVces

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Center for Sustainability Studies (FGVces) of the Business Administration School of Fundação Getulio Vargas (FGV-EAESP) is an open environment for study, learning, insights, innovation and the production of knowledge, made up of personnel with a multidisciplinary and diverse background; these are highly creative people that are engaged, committed, curious and bold, and especially motivated by a genuine desire to change the world. FGVces bases its activities in formulating and following-up public policies, in building tools for self-regulation and in the development of strategies and tools for business management towards sustainability, locally, regionally, nationally and internationally. This action takes place through the following activities: (i) formal and informal education; (ii) applied research and publications; (iii) promoting debates, mobilizations and sensitizing society around the theme; (iv) communications; (v) and through an exchange of experiences and information that can disseminate concepts and practices around sustainability in all its dimensions.

How have you influenced, or are you attempting to influence their position?

We participate in four projects in FGVces a) Climate Business Platform (EPC): aims to mobilize, sensitize and articulate private sector managers and leaders to manage and reduce greenhouse gas (GHG) emissions and the risks associated with climate change, as well as to propose policies public and positive incentives for the viability of a low carbon economy in Brazil. See more information (in Portuguese) at: <http://empresaspeloclima.com.br/sobre-a-epc?locale=pt-br> b) Emission trading system (SCE): This initiative aims to create and disseminate knowledge among companies about the operation of an emissions trading system, its business development and how it can contribute to the achievement of emission reduction targets. GHG emissions in a cost-effective way. CPFL has stood out in the simulations. c) Brazilian Program GHG Protocol: The Brazilian Program organizes working groups, together with the participating companies, to improve the method and development of new tools for the accounting of GHG emissions according to the Brazilian reality. d) Public Register of Emissions: pioneer platform in the country for transparent, quick and simple disclosure of the corporate greenhouse gas (GHG) emissions inventories of the organizations participating in the Brazilian GHG Protocol Program. Objectives: To create a database that facilitates the establishment of sectoral benchmarks and that supports the development of coherent public policies for the communication of GHG information; To promote the recognition of the participating organizations by the voluntary initiative of transparency, in front of stakeholders increasingly attentive to corporate socio-environmental responsibility. CPFL is a gold seal.

Trade association

Business Climate Initiatives - IECs

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The main objectives of the IEC are: a) Align themes and agendas for each initiative, seeking synergies in the actions and proposing joint actions that may contribute to the country towards a low carbon economy; b) To gather and promote the exchange of information and content produced by each initiative, optimizing resources, qualifying actions and enhancing business performance in the face of climate change; c) Strengthen the positioning of this group of companies in the dialogue with the government on a propositional agenda. To foster discussions in the business sector, the IEC holds face-to-face events and webinars. The Initiative is coordinated by five organizations: the Brazilian Business Council for Sustainable Development (CEBDS), the Ethos Institute, CDP, the Center for Sustainability Studies of the Getúlio Vargas Foundation (FGVces) and the Global Compact Brazil Network, currently responsible for the secretariat. It also counts on the partnerships of Envolverde and NeoMundo for communication actions.

How have you influenced, or are you attempting to influence their position?

CPFL Energia actively participates in the discussions on carbon pricing, helping to build a propoitive agenda for the sector.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

CPFL also engages in climate policy making through its membership of organizations other than trade associations, namely national and international business associations specifically focused on sustainability advocacy. In 2018, we became signatories to the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD).

Most relevant in 2019 are:

- UN Global Compact: we participate in the Brazilian Committee and the Energy and Climate and SDG Working Groups. Our Sustainability Director is currently chairman of the Board of Directors of the Global Compact Brazil Network
- São Paulo Environmental Agreement – initiative to reduce greenhouse gas emissions and encourage sustainability actions (Government of São Paulo and CETESB)
- Initiatives of the Center for Sustainability Studies (Fundação Getulio Vargas – FGVces)- - Business for Climate Platform (EPC)
- Local Development (ID Local)
- Brazil GHG Protocol Program | Public Emissions Registry
- Emission Trading Scheme Simulation

Our company also participates in industry associations and organizations with the aim of helping strengthen the electricity sector and the capacity to generate value at the institutional level and in the context of sustainability. The main ones are:

- Associação Brasileira de Distribuidores de Energia Elétrica (Brazilian Association of Electricity Distributors – Abradee). The entity helped discuss ANEEL Resolution No. 482, which deals with a tariff discount for micro and mini generators. Also included on the agenda were the topics of electricity distributor regulations, remuneration on investments, and other tariff subsidies. This involvement benefited the preparation of joint proposals sent to the executive branch and regulatory bodies. We participate in the entity's board.
- Associação Brasileira dos Comercializadores de Energia (Brazilian Association of Energy Traders – Abraceel): Discussed topics including guarantees for the market's financial sustainability, sustainably opening the free market, and hydrological risk (GSF). Our participation generated benefits in the preparation of joint proposals sent to the executive branch, regulatory bodies and the Electrical Energy Trading Chamber. We are on the Association's Board.
- Associação Brasileira de Energia Solar Fotovoltaica (Brazilian Photovoltaic Solar Energy Association – ABSolar): Promotes and publicizes developments in the photovoltaic solar-energy generation sector in Brazil, involving agents from the entire production chain. We participate in the Environment Working Group (GTMA), with discussions on environmental licensing and reverse logistics processes.
- Associação Brasileira dos Produtores Independentes de Energia Elétrica (Brazilian Association of Independent Power Producers – Apine): Apine deals with issues such as dam safety, hydrological risk (GSF), generation concession contracts, and market expansion. Our involvement brings benefits in the preparation of joint proposals sent to the executive and legislative branches and regulatory bodies. We are members of the Board.
- Associação Brasileira de Energia Eólica (Brazilian Wind Energy Association – Abeólica): The entity evaluates mechanisms to improve environmental licensing processes, subsidies for renewable generation, rules for auctions, and other aspects relevant to the development of wind power in generation. We are on the Board.
- Grupo de Trabalho Agentes do Rio Tocantins (Rio Tocantins Agents Working Group): Forum to analyse and promote actions that mitigate the impacts of low water availability for the generation of energy at Tocantins River hydroelectric plants. The group proposes public policies, actions to increase water availability and water quality, integration of generating agents, and identification of synergies between environmental programs to optimize resources and efficiency.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Our management follows the guidelines established by the Strategic Plan and Sustainability Plan.

The Strategic Plan is created by the Board of Executive Officers and is based on the analysis and evaluation of macroeconomic and market trends (decarbonisation, Changing customer profiles and habits, New technologies and digitalization, Regulatory framework modernization) over a five year horizon. This management tool is updated and approved by the Board of Directors annually, allowing the establishment of goals and prioritization of investments to promote the company's solid and long-term growth. This process includes structured mechanisms for evaluating external trends that may impact our business and identifying the demands and expectations of our stakeholders.

The Sustainability Plan establishes guidelines so that we can "provide sustainable, affordable and reliable energy at all times, making people's lives safer, healthier, and more prosperous in the regions where we operate." Our corporate objective is to power the transition to a more sustainable and smart way of providing and using energy, maximizing our positive impacts in the community and value chain. To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain. This management tool is also updated and approved by the Board of Directors annually.

CPFL also have structured a model that establishes four fronts of action regarding climate changes issues and follows the Strategic and Sustainability Plan guidelines and goals:

- a) GHG emissions management: preparation GHG emissions inventory and identification of actions to minimize emissions
- b) Climate opportunities and risk management: identification and evaluation of risks and opportunities that can positively or negatively impact our business
- c) Innovation: mapping some innovative solutions for our operations and focusing on the development of low carbon products we delivered a low-carbon solutions for our customers, such as the implementation of energy efficiency and distributed generation projects through CPFL Soluções
- d) Engagement and disclosure: we have been participated a several initiatives like Public Emissions Registry, Engagement with associations, academia and peers. In 2018 we became signatories to the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD).

CPFL's Institutional Relationship with public policy makers regarding climate change is conducted under these guidelines. They receive updates on the Company's Strategy and Sustainability Plan during their annual Planning cycle. The Sustainability and Institutional Relations areas are also in the same Vice Presidency. This configuration guarantees a great alignment between Sustainability Plan goals, the Company Strategic view and the engagement with policymakers (Governments, Associations, NGO's Sustainability Institutions, etc).

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports

Status

Complete

Attach the document

CPFL_Annual Report 2019_EN-compactado.pdf

Page/Section reference

Sustainable Energy – Climate Change: pages 46-50 Business Model – Sustainability in strategy: pages 30 - 37 Business Model – Integrated risk management: pages 38 Supplement to GRI disclosures - 102-12 | External initiatives: page 106 Supplement to GRI disclosures - 305-1, 305-2 and 305-3 | Direct (Scope 1) GHG emissions; Energy indirect (Scope 2) GHG emissions; and Other indirect (Scope 3) GHG emission: page 113 Supplement to GRI disclosures - 305-4 | GHG emissions intensity: page 113

Content elements

- Governance
- Strategy
- Risks & opportunities
- Emissions figures
- Emission targets
- Other metrics

Comment

The preparation of this Annual Report strengthens our transparency and accountability to all our stakeholders. The Report maintains all the best practices that we had already adopted in previous years. Covering the period from January 1 to December 31, 2019, the report complies with the GRI Standards, a standard defined by the Global Reporting Initiative and the most widely adopted by companies worldwide when developing this type of publication. In addition, we considered integrated reporting guidelines proposed by the International Integrated Reporting Council (IIRC), and highlight throughout the content our main contributions to the United Nations' Sustainable Development Goals (SDGs), defined in the UN's 2030 Agenda. In 2019, we improved the document's structure to reflect the material topics identified with our stakeholders in the Sustainability Plan, designed and approved by our leadership last year.

Publication

In voluntary communications

Status

Complete

Attach the document

preliminar_Verificação.pdf

Page/Section reference

Greenhouse Gas Inventory (2019) - The intire document.

Content elements

- Emissions figures
- Emission targets
- Other metrics

Comment

In the course of preparing our annual emissions inventory, we monitor the volume of GHG released into the atmosphere as a result of our activities. Our inventory follows the guidelines and methodology proposed by the Brazilian GHG Protocol Program and is published in the Public Emissions Registry, and stamped with the Gold Seal as a result of being submitted to third party verification.

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

CPFL Energia is committed to generating value for its stakeholders and to the objective of supporting the resumption of the country's economic growth, taking the lead in discussions about improving the power sector and encouraging sustainable development.

In 2019 we carried out a public offering of shares of the holding company on the São Paulo stock exchange and increased the amount of capital on the market to 16.23%, maintaining a listing on the Novo Mercado segment, which strengthens our commitment to adopting best practices in corporate governance when interacting with all our shareholders.

In the distribution segment, we invested R\$ 2.0 billion in 2019 to update and expand our networks, implementing new technologies, digitalizing several processes, incorporating analytics and big data systems, and further developing telemetry. On this last front, we moved forward with our pilot project to install smart meters at 100% of our customers in the municipality of Jaguariúna, São Paulo. All of this with the aim of creating smarter cities and further improving our service quality indicators.

Another important milestone was the expansion of our generation portfolio, which grew to 4.3 GW with the integration of CPFL Renováveis – turning us into leaders in renewable energy in Brazil, with a significant portion coming from wind power. With the expertise we acquired we are now ready to leverage our growth capacity through the acquisition of Greenfield projects in this segment, ensuring our commitment to decarbonizing the energy matrix.

Through CPFL Soluções we expanded our supply of products and services so that our clients can obtain even more advantages in the energy free market, meeting their power demands in a sustainable way and with greater freedom of choice. We provide support for strategies around trading, distributed generation, improving efficiency, infrastructure services, and various other solutions to take advantage of opportunities that have arisen as a result of the energy sector's development.

As part of our efforts to better align our actions with society's major demands and our shareholders' long-term vision, we approved our 2020-2024 Sustainability Plan, which provides guidelines and commitments for our businesses to grow and generate value for all stakeholders. With the Plan, our objective is "power the transition to a more sustainable and smart way of providing and using energy, maximizing our positive impacts in the community and value chain". To this end, we have identified three pillars that sustain the way we conduct our business and execute our strategy: Sustainable Energy, Smart Solutions and Society Shared Value. Based on these pillars we made 15 public commitments to contribute to economic, social, and environmental growth across the value chain.

The Plan brings together, in a comprehensive and objective way, the vision proposed by the UN's Sustainable Development Goals (SDG) and Global Compact principles with the main trends in our market (transition to a low carbon matrix; changing customer profiles and habits; new technologies and digitalization; regulatory framework modernization).

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Legal and Institutional Relations Vice-President	Chief Sustainability Officer (CSO)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

The Brazilian power sector is undergoing transformations that will increasingly give the customer an unprecedented role in this business ecosystem. The greater demand for renewable sources, the incorporation of new distribution technologies, and new models for self-production of energy are some of the factors that are leading to the redesign of our business model, increasingly focused on customers, on digitalization and on operational efficiency.

In order to improve the relationship we have established with our suppliers, we are implementing a strategic supply chain plan, with long-term projects and objectives to improve the management of our supply chain in the logistics, sales and qualification and supplier development sectors.

We promote the qualification and evaluation of strategic and critical partners for our businesses, with monthly evaluations through a supplier management platform. More than 3,000 suppliers worked in partnership with CPFL in 2019 and we have 190 strategic partners that together represent 60% of our transactions with suppliers.

In terms of the qualification of suppliers, our management relies on the Supply Base Management (SBM) tool. The platform allows us to evaluate companies mapped along aspects of financial, security, technical performance, documentary and legal compliance and ethics, reducing our company's exposure to risks.

This process is carried out every month, leading to an evaluation grade for suppliers and helping develop action plans for improvement. Two of the key developments in the SBM evaluations carried out over the past year were the increase in the number of critical suppliers mapped out, and the improvement in performance indicators. In addition, we refined the feedback methodology for evaluated companies, increasing the effectiveness of action plans in improving processes.

We also have a formal process for environmental and social risks identification in the approval process, through a self-assessment report based on aspects such as environment, social responsibility, health and safety, and quality. For current suppliers, evaluation visits are carried out based on these same aspects, in which the working conditions are verified. In the purchasing area, our efforts were directed towards the implementation of the Category Management methodology, structuring the full categorization of the scope of materials and services purchases, and establishing groups by possible synergy. In this way, we established specialized focal points (category leaders) among buyers, working with the management of processes, total costs, suppliers, risks and stakeholders.

In addition, we diagnose and define purchasing category profiles, properly directing negotiations in accordance with their allocation. This mapping has assisted in defining suppliers with whom we can strengthen partnership relationships, leading to innovation, minimizing risk, and adding value. In addition, this ensured greater engagement with the various business areas, enabling the identification of new scenarios and opportunities for improvement, generating gains such as visibility and control of contracts, closer relationships with suppliers, and control over and reduction of total cost and increase in productivity. On the logistics front, supply operations underwent changes with the opening and modernization of two new distribution centers – one in Piracicaba (São Paulo state) and the other in Esteio (Rio Grande do Sul state). With these structures, we achieved greater efficiency and agility in the delivery of materials and products critical to the operation.

We also have an initiative to encourage our suppliers to share experiences and best practices that generate value for all the stakeholders with whom we interact, called The Value Network. We held three meetings in 2019, with the participation of 82 partners, to discuss issues such as quality, safety, sustainability, future scenarios, and new businesses. One practical outcome of these discussions was the creation of a training program about corporate greenhouse-gas emissions (GHG) inventories for these companies.

Every year we recognize suppliers who have achieved significant advances and positive results with the CPFL Mais Valor ("More Value") Prize. Last year, we held the tenth edition, with the theme "Workforce management in the face of challenges and transformations," with a focus on initiatives that seek to reduce the deficit of skilled labor in the electric sector. The award-winning companies are selected by an internal committee that evaluates criteria such as job security, excellence in service, quality, deadlines, sustainability, and social responsibility. Of the 27 finalist companies, 12 were recognized in four categories - services, materials, recognition, and highlights. The sharing of experiences and recognition of best practices among our suppliers are facilitated by initiatives such as the Value Network and the More Value Prize.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	45000000

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

Yes

SC0.2a

(SC0.2a) Please use the table below to share your ISIN.

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1	BR	CPFEACNOR0

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

Requesting member
MRV Engenharia e Participações

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

154.1562

Uncertainty (±%)

5

Major sources of emissions

In 2019, our activities in the generation segment were strengthened through the integration of CPFL Renováveis, the country's largest renewable energy generator, into our asset portfolio. We achieved average availability of 96.1% for all generation assets, in line with our performance in the previous year. We are the 2nd largest company in the electricity distribution segment in Brazil in terms of the amount of energy sold, with a 14% share of the national market. Our four companies operate in the states of São Paulo, Rio Grande do Sul, Minas Gerais and Paraná, with a concession area that covers 687 municipalities and serves approximately 9.8 million customers. In 2019, we distributed approximately 68.1 TWh of energy in our concession areas, up 1.3% from the previous year. During the same period, our customer base increased by 1.8%. In recent years, the investments we have made in improving infrastructure, modernizing equipment and implementing new technological solutions have allowed us to achieve levels of quality that are a benchmark in the national market. In scope 1, our emissions totalled 425,354 tCO₂e, a reduction of 39% from the previous year. Composed of direct emissions from our operations, this category was impacted by less demand for power from Epasa and by the consolidation of CPFL Renováveis data proportional to our share stake - which increased to 99.94%. In scope 2, mainly composed of technical losses in distribution, we totalled 359,285 tCO₂e in 2019, a slight increase of 3.4% that accompanies the increase in the National Interconnected System's (SIN) emission factor. The entire GWh generated is exported to the national grid, so the accounting for customer emissions took into account the value of the Emission Factor of the National Interconnected System (SIN). These data already consider the proportionality of renewable generation in the country.

Verified

Yes

Allocation method

Allocation not necessary due to type of primary data available

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Emissions were calculated using all consumer unit data (High tension) and/or Group B (Low tension) that were extracted from our commercial system. The valuation results are a guide to follow up the emissions and to create analysis indicators. During the last three years, we have been engaging with our supply chain on climate change related issues. However, we still find limitations on engaging other suppliers that could improve our scope 3 cover. Our Scope 1 and Scope 2 emissions process are very mature, covering our core business in electricity generation and distribution. Despite this, we are following up and planning future steps to incorporate life cycle thinking in our generation portfolio. We have expanded the scope of inventoried sources and revised our view on emissions that occur outside the company's organizational boundaries for Scope 3, which monitors activities in our value chain. In scope 1, our emissions totalled 425,354 tCO₂e, a reduction of 39% from the previous year. Composed of direct emissions from our operations, this category was impacted by less demand for power from Epasa and by the consolidation of CPFL Renováveis data proportional to our share stake - which increased to 99.94%. In scope 2, mainly composed of technical losses in distribution, we totalled 359,285 tCO₂e in 2019, a slight increase of 3.4% that accompanies the increase in the National Interconnected System's (SIN) emission factor. In scope 3, we emitted 32,816 tCO₂e, a reduction of 80% due to a period in which there was no power plant construction. This scope includes business trips, commutes, purchase of materials (steel, aluminum, cement, among others), and treatment of effluent and solid waste from operations.

Requesting member

Pirelli

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

8734.8819

Uncertainty (±%)

5

Major sources of emissions

In 2019, our activities in the generation segment were strengthened through the integration of CPFL Renováveis, the country's largest renewable energy generator, into our asset portfolio. We achieved average availability of 96.1% for all generation assets, in line with our performance in the previous year. We are the 2nd largest company in the electricity distribution segment in Brazil in terms of the amount of energy sold, with a 14% share of the national market. Our four companies operate in the states of São Paulo, Rio Grande do Sul, Minas Gerais and Paraná, with a concession area that covers 687 municipalities and serves approximately 9.8 million customers. In 2019, we distributed approximately 68.1 TWh of energy in our concession areas, up 1.3% from the previous year. During the same period, our customer base increased by 1.8%. In recent years, the investments we have made in improving infrastructure, modernizing equipment and implementing new technological solutions have allowed us to achieve levels of quality that are a benchmark in the national market. In scope 1, our emissions totalled 425,354 tCO₂e, a reduction of 39% from the previous year. Composed of direct emissions from our operations, this category was impacted by less demand for power from Epasa and by the consolidation of CPFL Renováveis data proportional to our share stake - which increased to 99.94%. In scope 2, mainly composed of technical losses in distribution, we totalled 359,285 tCO₂e in 2019, a slight increase of 3.4% that accompanies the increase in the National Interconnected System's (SIN) emission factor. The entire GWh generated is exported to the national grid, so the accounting for customer emissions took into account the value of the Emission Factor of the National Interconnected System (SIN). These data already consider the proportionality of renewable generation in the country.

Verified

Yes

Allocation method

Allocation not necessary due to type of primary data available

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Emissions were calculated using all consumer unit data (High tension) and/or Group B (Low tension) that were extracted from our commercial system. The valuation results are a guide to follow up the emissions and to create analysis indicators. During the last three years, we have been engaging with our supply chain on climate change related issues. However, we still find limitations on engaging other suppliers that could improve our scope 3 cover. Our Scope 1 and Scope 2 emissions process are very mature, covering our core business in electricity generation and distribution. Despite this, we are following up and planning future steps to incorporate life cycle thinking in our generation portfolio. We have expanded the scope of inventoried sources and revised our view on emissions that occur outside the company's organizational boundaries for Scope 3, which monitors activities in our value chain. In scope 1, our emissions totaled 425,354 tCO₂ e, a reduction of 39% from the previous year. Composed of direct emissions from our operations, this category was impacted by less demand for power from Epasa and by the consolidation of CPFL Renováveis data proportional to our share stake - which increased to 99.94%. In scope 2, mainly composed of technical losses in distribution, we totaled 359,285 tCO₂ e in 2019, a slight increase of 3.4% that accompanies the increase in the National Interconnected System's (SIN) emission factor. In scope 3, we emitted 32,816 tCO₂ e, a reduction of 80% due to a period in which there was no power plant construction. This scope includes business trips, commutes, purchase of materials (steel, aluminum, cement, among others), and treatment of effluent and solid waste from operations.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

We have used our own primary data, available on an internal system, to extract the information necessary to carry out the GHG emissions calculation. In addition, to verify if the information and calculations were correct, we performed an analysis comparing the data we calculated, with those made publicly available by the companies on their Annual/Sustainability Reports.

Our information about GHG inventory and others themes are published in:

- Brazil Public Registry: <http://registropublicodeemissoes.com.br/participantes/1077>;
- Annual Report: <http://relatorioanualcpfl.com.br/en/index.html>
- Investor Relations: <https://cpfl.rweb.com.br/>

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
We face no challenges	Emissions were calculated using all data from the consumption unit for Group A (high voltage) and / or Group B (low voltage) that were extracted from our commercial system. We were able to calculate emissions from primary data and despite the geographic dispersion of our customers' units; we obtained good accuracy in the data. To complement the information, we consult all publicly available data to calculate the emission data as accurately as possible.

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

CPFL Energia is studying a methodology for allocating emissions to consumers. For now, the allocation is based on the clients consumption multiplied for the national emission factor.

Due to the characteristic of the energy transmission system in Brazil being interconnected, the emission factor is calculated and disseminated by the Ministry of Science, Technology, Innovation and Communication. This factor considers the emission of greenhouse gas for all generated energy that has entered the system, thus being a unique factor for the Brazil of which we do not have management.

We stepped up our efforts to reduce global energy losses in our distribution network, acting from increased the number of inspections and public lighting re-registration campaigns .

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

Requesting member

Pirelli

Group type of project

New product or service

Type of project

New product or service that reduces customers operational emissions

Emissions targeted

Actions to reduce customers' operational emissions (customer scope 1 & 2)

Estimated timeframe for carbon reductions to be realized

1-3 years

Estimated lifetime CO2e savings

8734.88

Estimated payback

3-5 years

Details of proposal

In line with the evolution of the energy sector and customer needs, in 2018 we launched CPFL Soluções. With operations throughout the country, it has a portfolio of integrated solutions in energy management and trading, energy efficiency, distributed generation, energy infrastructure, and consulting services. Based on CPFL Soluções, we draft this proposal of installation of photovoltaic panels on customer assets in our concession area. We used data to meet total electricity consumption in 2019, disregarding projections of increased consumption. In this way, we estimated the investment costs so that the client becomes energy self-sufficient in our concession area. To cover the estimated consumption in item SC1.1, the required installed capacity would be 70.6 MWP, with investment payback estimated at 6 years and saving approximately 54,720.96 CO2 emissions of their Scope 2 in those years.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC3.1

(SC3.1) Do you want to enroll in the 2020-2021 CDP Action Exchange initiative?

Yes

SC3.1a

(SC3.1a) Identify which member(s), if any, have motivated you to take part in Action Exchange this year.

Pirelli

MRV Engenharia e Participações

SC3.1b

(SC3.1b) Select the types of emissions reduction activities that your company would like support in analyzing or in implementing in the next reporting year.

Energy efficiency in buildings

Energy efficiency in production processes

Low-carbon energy consumption

Low-carbon energy generation

SC3.1c

(SC3.1c) As part of Action Exchange, would you like facility level analysis?

Yes

SC3.2

(SC3.2) Is your company a participating supplier in CDP's 2019-2020 Action Exchange initiative?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

No, I am not providing data

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain Questions?
I am submitting my response	Investors Customers	Public	Yes, submit Supply Chain Questions now

Please confirm below

I have read and accept the applicable Terms