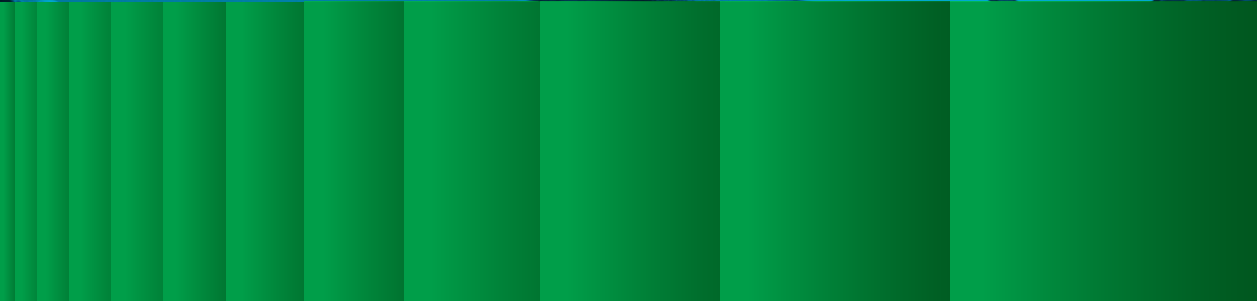




# Eletrobras Chesf SASB Report 2022



Eletrobras  
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# INTRODUCTION

Companhia Hidro Elétrica do São Francisco (Eletrobras Chesf) is a company primarily engaged in electricity generation, transmission and trading. Headquartered in Recife (PE), Eletrobras Chesf, now a publicly traded company majority-owned by Centrais Elétricas Brasileiras S.A. (Eletrobras), was Brazil's very first public electricity company, and today it has 2,694 permanent employees.

Eletrobras Chesf was established by Decree-Law no. 8,031 on October 3, 1945, and incorporated at the first Annual General Meeting on March 15, 1948. A capitalization process in 2022 diluted the Federal Government's stake in our company, resulting in privatization.

We operate 12 hydroelectric dams and 14 wind farms with a total corporate installed capacity of 10,460.43 MW. We have an additional installed capacity of 2,642.95 MW owned via Special Purpose Entities (SPEs), for an aggregate installed capacity of 13,103.38 MW.

Eletrobras Chesf has published [Annual Reports](#) since 2009, and in 2022 we published our third separate report on Sustainability Accounting Standards Board (SASB) disclosures. This report provides a set of SASB disclosures for the electric utilities and power generators sector, covering 26 broadly relevant sustainability issues organized under five sustainability dimensions: environment, social capital, human capital, business model and innovation, and leadership and governance.

The Casa Nova wind farm (BA). Photo: André Schuler





# MESSAGE FROM THE CHIEF SUSTAINABILITY OFFICER

In a year marked by the most significant corporate transformation in our history—the capitalization process and the subsequent privatization of the company—we further cemented the pillars of sustainability at the cornerstone of our strategy. The capitalization made 2022 a watershed year for the company as we expanded our capacity to invest and compete in the global renewable energy market, while contributing to environmental preservation, social development, and economic growth.

In a comprehensive overhaul of our management model, we integrated sustainability responsibilities into all roles across the organization, whilst continuing to link executives' variable compensation to sustainability targets, now for the sixth consecutive year. We also updated our Risk Matrix with a particular focus on ESG risks, and published a new Code of Conduct structured around the four pillars of Eletrobras' sustainability framework.

In this report, we provide a comprehensive overview of our approach to addressing ESG issues. By keeping abreast with the latest international developments in corporate sustainability reporting, we ensure the company remains aligned with the demands and expectations of our key stakeholders. As part of these practices, we are publishing our third consecutive SASB Report.

Alongside this report, we are also publishing our annual integrated report in accordance with the International Financial Reporting Standards (IFRS)—which incorporated the SASB Standards in 2022—and the Global Reporting Initiative (GRI) Standards. We connect these frameworks with the guidelines of the United Nations Global Compact (UNGC), to which we are signatories, and its Sustainable Development Goals (SDGs). Enhancing our commitment to transparent accountability, we additionally publish an annual report aligned with the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD).

These combined reports provide a transparent account to our stakeholders of Eletrobras' journey to becoming a sustainability leader in our industry.

A journey driven by internal growth and the continuous development of our employees, as we work to build a company that is poised for the future. To this end, we have made substantial investments in training and development, including a new Sustainability Pathway within our corporate education program, and have implemented efforts to meet the targets agreed with investors.

Our results so far are a source of pride. They have set us on a path of sustainable development,

empowering us to pursue new and more ambitious targets to create value for the company and society.

**Luiz Augusto Pereira de Andrade Figueira**  
Chief Sustainability Officer



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# RISK MANAGEMENT

## Dimensions: Human Capital, Leadership and Governance

Eletrobras Group's Integrated Risk Management System aims to prevent events from materializing which could adversely affect our strategic objectives and our ability to generate and preserve value, as well as to provide transparent information to the market and society.

Our approach to managing and building Eletrobras Chesf's risk matrix follows the guidelines set by the parent company and consolidated in the [Eletrobras Group Risk Management Policy](#), approved by the Board of Directors and based on best market practices. This policy draws guidance from the COSO 2013, COSO ERM and ISO 31000 frameworks.

Eletrobras Chesf has a formally established Risk Committee and a Risk Management function. In addition, we are a member of the Eletrobras Group Operational Risk Committee, which meets monthly to discuss the identification, assessment, handling, monitoring and communication of risks inherent to our activities. Additionally, the risk management process is overseen by the Audit and Statutory Risks Committee (CAE), based at our parent company.

The corporate risk management process is periodically evaluated by our Internal Audit function, which issues recommendations in its reports. In addition, we report on key risks on

a quarterly basis to the Board of Directors. The Board also approves our Risk Management Policy and any subsequent revisions.

Eletrobras Chesf's risk matrix for 2022 comprised 25 risk events, categorized into four pillars: Business, Financial, Operational and Compliance. In January 2023, we approved a new version of the corporate risk matrix, based on the model approved by our parent company in December 2022, which covers three pillars: Business, ESG and Financial. It comprises 31 risk events, 29 of which are corporate and applicable to Eletrobras Chesf and another two that were inserted locally by a decision from our Executive Board.

Eletrobras Chesf also has a framework in place for addressing fraud and corruption risks. This includes the Eletrobras Integrity (Compliance) Program, which aims to build a culture of corporate integrity within the Group by advancing a management approach focused on preventing and mitigating the impacts from misconduct, noncompliance or unlawful acts in business processes. The program's six dimensions are: developing a compliance management culture; risk assessment; development and implementation of policies and procedures; communications and training; continuous program monitoring; and remediation action and penalties.

### IF-EU-320 a.1: Total recordable injury rate (TRIR), fatality rate, and near miss frequency rate (NMFR)

We strive to ensure compliance with all current legal requirements regarding health and safety at work, especially the Regulatory Standards (NRs) of the Ministry of Labor and Social Security.

We have a department and two regional divisions—in the North, covering the areas of Sobradinho (BA), Teresina (PI) and Fortaleza (CE), and in the South, covering Paulo Afonso (BA) and Salvador (BA)—responsible for managing aspects related to occupational health, well-being and safety. These bodies are linked to the People Management Department and follow the [Eletrobras Group Occupational Health and Safety Policy](#).

In addition to this Policy, we have rules in place on the procurement, use, storage and conservation of personal protective equipment (PPE) and collective protection equipment (CPE). We provide employees with all PPE and CPE necessary for carrying out their work, free of charge. These items are not provided to contractors' employees. Nevertheless, Eletrobras Chesf requires the use of such equipment, and

with the same quality as those used by the company's own employees.

These rules apply to all employees and contractors according to their roles and tasks. As a reinforcement, Eletrobras Chesf holds safety induction meetings before beginning contracts with suppliers. We also carry out periodic safety inspections and audits on contractors.

Eletrobras Chesf has two initiatives in this area.

- **Prevenir+**, through which we implement Occupational Health and Safety Management Systems (OHSMS) at our 11 power plants to secure ISO 45001:2018 certification, in addition to serving as a mechanism for managing Occupational Health and Safety (OHS) measures and applications for Fire Department Inspection Certificates (AVCB):
  - in 2022, the OHSMS was implemented at the Boa Esperança plant, in accordance with the ISO 45001:2018 standard;
  - the OHS management systems at the Paulo Afonso IV and Xingó plants were recertified, also in compliance with ISO 45001:2018;
  - as part of this process, physical adaptations were conducted at all our hydroelectric power plants, totaling an investment of approximately R\$ 13 million;
  - the scope of these certifications encompasses the operating, mechanical, electrical and civil maintenance and support processes of the hydroelectric plants, covering all employees, outsourced workers and visitors who on site at these plants; and

- in 2023, the scope of the program will be expanded to the transmission segment through the implementation of the OHSMS components at previously selected substations.

- **Energy, Health and Safety Program**, which was developed in partnership with consulting firm DuPont. This program aims to develop an OHS culture for all processes, covering all employees, contractors and visitors who work in the companies' facilities. OHS management and evaluation are monitored against indicators such as the injury frequency and severity, absenteeism due to illness and the rate of occupational diseases, as well as the number of hours of training in OHS and employee engagement in related actions.

In 2022, we implemented an incident management methodology for investigating accidents, near misses and deviations, supported by a digital tool to effectively and promptly report incidents and share lessons learned. We are currently implementing a module for following up on actions to mitigate risks and prevent recurrence through improvements and measures to ensure safer operations.

In 2022 we closed the year with a Lost-Time Injury Frequency Rate (LTIFR) of 2.2, higher than the tolerable upper limit of 2.19.

Our Lost Time Injury Severity Rate (LTISR), in turn, closed the year at 2,995, exceeding our upper tolerance limit by 106.

On June 5, 2022, three of our employees died in an aircraft accident. Eletrobras Chesf declared a four-day mourning period, symbolizing the feeling of grief, consternation and respect for the professionals who provided relevant services to the company at the time of the accident.

The company took all appropriate measures with the competent authorities, prioritizing assistance to the families of the victims and direct communication with the relatives of the victims; providing transportation to the accident site, as well as psychosocial support for family members; support for funeral services; arrangements with the morgue in Caicó (RN) to release the bodies; and transfer of the employees to their cities of origin.

The incident is still under investigation by the Center for Investigation and Prevention of Aeronautical Accidents (Cenipa), an agency of the Air Force Command responsible for investigating civil aviation and Air Force accidents.

## Work-related injuries

	2021	2022
Number of employees (monthly average)	3,295	3,175
MWH (man-hours worked)	6,602,679	6,362,199
Absolute number of lost-time injuries (equal to or less than 15 lost days) – employees	18	10
Absolute number of lost-time injuries (more than 15 lost days) – employees	6	4
Absolute number of no-lost-time injuries – employees	6	4
Total number of occupational injuries – employees (including deaths)	30	21
Man-days lost – employees	599	1,055
Man-days deducted – employees	0	18,000
Total man-days lost – employees	599	19,055
Number of high-consequence work-related injuries (excluding fatalities)	–	2
Rate of high-consequence work-related injuries (excluding fatalities)	–	0.31
Number of recordable work-related injuries	–	21
Rate of recordable work-related injuries	–	3.3
Number of fatalities – employees	0	3
Rate of fatalities as a result of work-related injuries	–	0.47
Lost time injury frequency rate (LTIFR) – employees	3.63	2.2
Frequency rate (FR) – employees	4.54	2.83
Severity rate (SR) – employees	90.72	2,995

In accordance with the Consolidated Labor Regulations, employees are defined as persons whose employment at the relevant company is registered in their employment records. The following categories are included: employees present at the company, those seconded or on leave (with or without a specific return date); rehired employees based at the company or on secondment, young apprentices, employees on leave with or without a return date, or performing an elective role. The following categories are not included: employees on secondment from other companies, the CEO and other C-level executives, and interns.

The lost-time injury frequency rate (LTIFR), frequency rate (FR) and severity rate (SR) use the following calculation for hours worked: the sum of monthly average hours worked x 167 x 12 (with 12/31/2022 as the cutoff date).

There were three accidents in 2021 that did not impact this data numerically, but did impact the lost-time period in 2022: two employees together had a total of 142 days lost in 2021 and 63 days in 2022. Additionally, one employee remains on leave whose injury generated 70 days lost in 2021 and 290 days lost in 2022, because according to NBR 14280, "if an injured person remains away from his duties for more than a year, only 360 days are computed. Finally, there is a fourth employee on leave due to an injury that occurred in 2019, but was not computed in the accident statistics for 2022, based on the aforementioned NBR rule.

Eletrobras Chesf uses the following definition of high-consequence work-related injury as per the GRI Standards: a work-related injury that results in a fatality or in an injury from which the worker cannot, does not, or is not expected to recover fully to pre-injury health status within six months.

Basis for calculating the rate of high-consequence work-related injuries:  $[\text{Number of high-consequence work-related injuries (excluding fatalities)} / \text{Number of hours worked}] * 1,000,000$ .

Basis for calculating the rate of fatalities as a result of work-related injuries:  $(\text{Number of fatalities as a result of work-related injuries} / \text{Number of hours worked}) * 1,000,000$ .

Information about contractors has not been reported as the company is currently adjusting its database. No employees were excluded from the calculation.

The main types of accidents at work were: same-level falls (three incidents), multiple trauma (three fatal accidents) and impact with a moving object (two cases).

Occupational accident hazards are identified using tools such as PEX and APR, hazard and risk matrices and programs such as the PGR.

Hazards that have caused or contributed to high-consequence injuries during the reporting period: uneven or wet surfaces.

To minimize the risk of accidents, periodic safety training is provided to employees, especially legally mandated training, as well as security inspections and audits, signage and the use of PPE.

Main types of occupational injuries: Impact with a stationary object, pinched fingers and electric arc, each with four cases.

Number of hours worked: 5,917,645.

Data on accidents involving direct employees is compiled in an Excel spreadsheet and checked with the SAP system. Data on contractors is compiled from the Berkan portal, a third-party platform where the documents for contractors are stored. We define high-consequence occupational injuries as those resulting in more than 15 days lost.

Eletrobras' "Energy, Occupational Health and Safety" program is working with DSS+ on various organizational measures with the aim of promoting a culture of health and safety among employees.



## RISK AND HAZARD ASSESSMENT

Eletrobras Chesf has a hazard and risk matrix, a document used by workers to identify and evaluate hazards in our activities, routine or otherwise. In addition, it ensures compliance with technical and legal requirements on employee health and safety in accordance with the provisions of Chapter V, Title II of the Consolidated Labor/Occupational Health and Safety Regulations and their Regulatory Standards (RNs), including the right of refusal defined in NR-10.

## HEALTH AND SAFETY COMMUNICATION AND TRAINING

In 2022, in-person and distance training were provided in accordance with applicable legal requirements, covering the following topics:

- bulky loads;
- Operational Handling of Hazardous Products (OHDP);
- NRs 05, 06, 10, 11, 12, 13, 18, 23, 33 and 35;
- risk factor;
- behavioral observation;
- Safe Practices Index; and
- efficient and defensive driving.

## IF-EU- 550 a.1: Number of incidents of non-compliance with standards or regulations on physical and cyber security

Cybersecurity is a crucial aspect of Eletrobras Chesf's business, since we operate assets considered essential for society. Ensuring the availability, integrity and confidentiality of our information and systems is essential for operational continuity.

In 2021 we established a dedicated Information Security department. Cybersecurity is handled by two functions within the company: one that takes care of the corporate IT network and another that manages the operational industrial network (OT). In 2022 we implemented a series of key initiatives:

- implementation of the Eletrobras Cybersecurity Operation and Monitoring Center (SOC), which includes tools for monitoring information from Eletrobras companies throughout the internet, deep web and dark web that may pose a risk to the company's IT environment or damage our brand;

- implementation of a vulnerability management process that includes a tool to scan computers and servers connected to the company's network, in order to identify vulnerabilities that can be exploited by intruders and compromise our computing environment;
- implementation of a security log correlation solution that associates information generated by various security assets in order to identify threats and suspicious activity within the company's corporate network; and
- implementation of OT policies, regulations, processes and technological devices to fully comply with the first phase of the operational routine for "Minimum cybersecurity controls for the Regulated Cyber Environment."

No breaches of customer privacy were detected and/or reported in 2022.

**Eletrobras Chesf has a hazard and risk matrix used to identify and evaluate hazardous events**



# ENVIRONMENTAL MANAGEMENT

## Dimension: Environment

The continuity and sustainability of our business depends on our ability to compliantly manage our operations. We seek to reconcile our business activities with environmental protection at each stage of our projects, going beyond minimum legal requirements whenever possible.

Each department uses appropriate assessment methods to evaluate impacts from our operations. Our Bylaws require that we seek economic, financial, social and environmental balance in our actions and in pursuing business opportunities.

Eletrobras Chesf's environmental management practices are guided by the [Eletrobras Group Environmental Policy](#) and are factored into the planning for our projects and in our day-to-day operations. This Policy is designed to ensure compliance with applicable laws and regulations and the international conventions of which Brazil is a signatory.

We also have an Environmental Management System (IMS) in place that comprises three core components: Environmental Policy; the Eletrobras Environmental Committee, of which Eletrobras Chesf is a member; and the Corporate Sustainability Disclosures System (IGS System) – Environmental Dimension. In addition, we

have a proprietary system, SISLIC, for managing environmental licenses and requirements.

In 2022 we obtained 23 environmental permits and licenses for greenfield projects and developments. We also renewed 33 licenses to ensure our existing assets remain compliant.

## Greenhouse gas (GHG) emissions and air quality

The Eletrobras Group has published emissions inventories since 2009 in accordance with the Intergovernmental Panel on Climate Change (IPCC) methodology and the Greenhouse Gas Protocol. Our inventories are available on the Eletrobras Chesf [website](#).

The floodgates of the Paulo Afonso dam (BA). Photo: André Schuler



## IF-EU-110 a.1: Gross global Scope 1 emissions, percentage covered under emissions- limiting regulations, and percentage covered under emissions-reporting regulations

We monitor and report on our greenhouse gas (GHG) emissions through GHG Emissions Inventories. These inventories inform our efforts to reduce environmental impact, design strategies to further reduce emissions, and advance the transition to a new development model.

We continuously report our emissions via our Sustainability Disclosures System (IGS) and, after validation, the data are exported to a software suite used to calculate and track trends. Emissions are accounted for using the Intergovernmental Panel on Climate Change (IPCC) methodology and the guidelines given in the GHG Protocol.

We have set a goal to reduce our absolute greenhouse gas emissions (Scope 1 + Scope 2, not including transmission losses, in tCO<sub>2</sub>) and relative emissions (GHG emissions intensity, and tCO<sub>2</sub>/NOR and tCO<sub>2</sub>/MWh generated).

## IF-EU-110 a.2: GHG emissions linked to electricity supply

We calculate emissions in accordance with guidelines issued by our parent company based on the Brazilian National Policy on Climate Change, introduced by Law no. 12,187/2009 and regulated by Decree no. 7,390/2009.

GHG emissions are measured across three different scopes:

### SCOPE 1

- Mobile-source emissions
- Fugitive emissions (SF<sub>6</sub> refrigerants)
- Wastewater
- Other point sources: LPG, natural gas and diesel fuel used by generator sets and auxiliary boilers

### SCOPE 2

- Emissions per unit of purchased electricity
- Transmission losses

### SCOPE 3

- Air travel
- Effluents discharged into municipal sewage systems
- Employee commuting.

Our total emissions in 2022 were 89,304 tCO<sub>2</sub>e. As expected, the bulk of emissions are Scope 2 (86.9% of the total), followed by Scope 1 (11.7% of the total) and Scope 3 (1.4% of the total).

Scope	2020 (tCO <sub>2</sub> e)	2021 (tCO <sub>2</sub> e)	2022 (tCO <sub>2</sub> e)
Scope 1	12,360	8,607	10,407
Scope 2	101,412	260,438	77,681
Scope 3	240	293	1,261
<b>Total</b>	<b>114,012</b>	<b>269,337</b>	<b>89,304</b>

*Total GHG emissions to Recurring Net Operating Revenue (NOR)  
(CO<sub>2</sub>/R\$ thousand): 0.011*

*Total emissions (tCO<sub>2</sub>e): 88,751.08*

*NOW (R\$ thousand): 7,870,267*

*GHG Emissions Intensity/MWh: 0.265*

*Scope 1 and Scope 2 emissions, excluding transmission losses (kgCO<sub>2</sub>e):  
10,603,300*

*Net generation output (MWh): 40,079,144.01*

*Gases included in the calculation: CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>, HFCs and PFCs*

*Biogenic emissions are emissions from burning renewable (non-fossil) fuels not related to land use. This includes emissions produced by burning fuel ethanol, anhydrous ethanol (blended with gasoline) and biodiesel (blended with diesel).*

*Total Scope 1 biogenic emissions in 2022: 1,053.41 tCO<sub>2</sub>e*

**We have set a goal to reduce our absolute  
and relative greenhouse gas emissions**

## IF-EU-110 a.3: Description of long-term and short-term strategy or plan to manage Scope 1 emissions, emission-reduction targets, and an analysis of performance against those targets

We have made a public pledge to minimize climate-change impacts by supporting the transition to a low-carbon economy. The [Eletrobras Group Environmental Policy](#) outlines specific guidelines on climate change for Group companies. Eletrobras Chesf has set two GHG emissions reduction targets in our PNG 2022–2026, as shown in the table at the top of the page.

Our targets for 2022 were met primarily as a result of a reduction in Scope 2 emissions, driven both by energy efficiency measures and by a lower grid emission factor.

Disclosure	Operation	Results			Target
		2020	2021	2022	2022
Scope 1 and 2 emissions without transmission losses/MWh	kgCO <sub>2</sub> e/MWh	0.37	0.35	0.27	1
Total GHG emissions / Net Operating Revenue	tCO <sub>2</sub> e/ (R\$ thousand)	0.017	0.033	0.011	0.029

### OFFSETTING GHG EMISSIONS

Eletrobras Chesf’s energy transition efforts are governed by the [Eletrobras Group Energy Efficiency Policy](#). We are operating on two complementary fronts to implement best practices in energy savings: our Solar Microgrid and Net Zero programs.

Chesf’s Solar Microgrids program will offset the electricity consumed at our office and operational facilities through seven new distributed generation microgrids in six states, with a total installed capacity of 4,800 kW.

Our Net Zero program aims to mitigate and offset GHG emissions from our operations. A review of our GHG inventory identified ways to offset our emissions or generate carbon credits. This initiative is capturing opportunities in energy transition and energy efficiency, as well as projects focused on expanding water reuse and generating or acquiring carbon credits. Offsetting emissions using I-REC certificates is another way we are reducing our GHG footprint.

Solar panels at Eletrobras Chesf’s Pernambuco Solar Power Center of Excellence. Photo: Eletrobras Chesf Archives







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# Water and wastewater management

Water is our primary environmental asset, in particular the São Francisco River, where most of our hydroelectric plants are located. We are committed to efficiently managing water resources and effluents, ensuring water is available in sufficient quantity and quality for its multiple applications.

Our parent company's [Water Resource Policy](#) guides our water stewardship practices, and is based on two core concepts: water is a shared, limited and precious resource; and water is an essential natural resource.

The water flowing through our hydropower plants is not consumed and is returned in its entirety to the downstream water body with the same level of quality as at the intake. Our hydroelectric reservoirs help to regulate downstream streamflow during drought and flood seasons, mitigating impacts. All projects have secured or have applications pending for permits to use water resources for hydroelectric purposes.

Water for office use is primarily supplied by local utilities. The impact from effluent discharge varies depending on the quantity, quality and destination. Most of the effluents generated by Eletrobras Chesf are sewage from office facilities and turbinated water from hydroelectric dams.

All sewage is sent to conventional treatment systems (septic tanks or municipal sewage systems) and have no impact on waterbodies.

Eletrobras' Business & Management Master Plan (PDNG) has set a target to reduce utility water consumption in administrative activities by 0.3% year on year. In 2020, 2021 and 2022 we achieved reductions of 6.82%, 14.71% and 2.03%, respectively.



The São Francisco River, where our Paulo Afonso dam is located (BA). Photo: André Schuler



## IF-EU-140 a.1: Total water withdrawn and total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress

Water withdrawal, by source (ML)	2022
<b>Administrative activities</b>	<b>598.22</b>
Groundwater	22.17
Rainwater	448.48
Utility water	87.77
<b>Where no meter is present (estimated consumption)</b>	<b>39.80</b>
Hydropower	215,461,123.20
Surface (turbined water)	215,461,123.20
<b>Total water withdrawals<sup>1</sup></b>	<b>215,461,272.95</b>
<b>Total water discharged<sup>2</sup></b>	<b>215,461,211.16</b>
<b>Total water consumed<sup>3</sup></b>	<b>21.99</b>

<sup>1</sup> Consumption estimates where no water meter is present are included in the total water withdrawal figures, but are not included in the calculations of water discharge and consumption.

<sup>2</sup> Total water discharge is the sum of effluents, used water, and unused water released to surface water, groundwater, seawater, or a third party, for which the organization has no further use, over the course of the reporting period.

<sup>3</sup> Total water consumed is the sum of all water that has been withdrawn and incorporated into products, used in the production of crops or generated as waste, has evaporated, transpired, or been consumed by humans or livestock, or is polluted to the point of being unusable by other users, and is therefore not released back to surface water, groundwater, seawater, or a third party over the course of the reporting period.

<sup>a</sup> No surface water is withdrawn for administrative activities.

<sup>aa</sup> No water is withdrawn in areas with water stress, other than non-consumptive withdrawals for hydroelectric generation.

There are no other types of water (total dissolved solids > 1,000 mg/L). Only fresh water is discharged.

The reported water discharge into areas with water stress refers to the turbined water discharged by the Pedra Dam, which is located in an area with water stress as classified by Brazil's water and sanitation regulator, ANA.

There were no changes in water storage volumes, and therefore there were no impacts.

Total rainwater harvested for use in office facilities is not included in the water withdrawal, discharge and consumption calculations.

### Turbined water (hydroelectric plants in water-stressed areas)

**510,555,744.00 ML**

Water is our primary environmental asset, in particular the São Francisco River, where most of our hydroelectric plants are located





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## IF-EU-140 a.3: Discussion of water management risks and description of strategies and practices to mitigate those risks

Our hydroelectric dams do not significantly affect the water quality of the rivers on which they are built. Eletrobras Chesf assesses and monitors water quality in the reservoirs and adjacent stretches of the rivers under our concession, including physical and chemical parameters such as temperature, pH, electrical conductivity, dissolved oxygen, turbidity, transparency, total alkalinity, total hardness, concentration of nitrate and nitrite, ammonia, total phosphorus, total phosphate, inorganic phosphorus, chlorides, chlorophyll, density of thermotolerant coliforms, concentration of pesticides, oil and grease. In addition, we monitor data on reservoir storage and streamflow. Water quality testing is performed on a quarterly schedule. Monitoring frequency may increase to biweekly in drought conditions, or daily in the event of a severe drought.

We also work to raise awareness about the importance of water in communities surrounding our facilities, through our Environmental Education and Social Communication programs. We regularly review and update our Annual Flood Control Plan, related rules and guidelines, our inventory of hydroelectric plant restrictions, our flood control manuals, and information reporting systems for host river basins.

In 2022, the São Francisco River experienced its highest streamflow in the last 13 years due to heavy rainfall, especially in the state of Minas Gerais. In response, we implemented special

The Xingó hydroelectric dam, on the border between the states of Sergipe and Alagoas. Photo: André Schuler



flow control measures at each of our reservoirs. On January 12, the outflow rates from dams on the São Francisco river was increased. The Sobradinho (BA) and Xingó (SE) dams reached an outflow of 4,000 cubic meters per second, or half of the maximum streamflow rate allowable for the river under flood control rules.

Eletrobras Chesf provided information on our portal, websites and radio spots to inform the public about our flood control measures. Information about changes in discharge rates is also provided via instant messaging.

Changes in streamflow downstream from the Xingó Dam may also occur as a result of instructions given by the National Grid Operator (ONS) to optimize generation output in different regions of the country—the ONS is responsible for centrally planning, scheduling

and dispatching generation facilities in Brazil. Eletrobras Chesf operates its reservoirs and dams in accordance with established rules, and shares information about these operations with other users, in conformity to legal and operational requirements. We also provide any required clarification to the Office of the Attorney General in Palmares (AL).

Chesf-owned hydroelectric plants all pay Financial Compensation for the Use of Water Resources pursuant to Law no. 7,990/1989. In 2022, Chesf paid R\$ 211,248,498.23 toward financial compensation.



# INSTALLED CAPACITY AND ELECTRICITY GENERATED AND TRANSMITTED

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## CORPORATE HYDROPOWER PLANTS

- 1 Boa Esperança
- 2 Sobradinho
- 3 Luiz Gonzaga
- 4 Apolônio Sales
- 5 Paulo Afonso I, II, III, IV
- 6 Xingó
- 7 Pedra
- 8 Funil
- 9 Curemas

## CORPORATE WIND FARMS

- 1 Casa Nova II, III, A
- 2 Pindaí Wind Cluster (11 wind farms)

## TRANSMISSION LINES

## Generation and transmission assets

Power plants*	River	Installed capacity (MW)
<b>Hydroelectric plants</b>		<b>10,262.33</b>
Sobradinho	São Francisco	1,050.30
Luiz Gonzaga (Itaparica)	São Francisco	1,479.60
Apolônio Sales (Moxotó)	São Francisco	400.00
Paulo Afonso I	São Francisco	180.00
Paulo Afonso II	São Francisco	443.00
Paulo Afonso III	São Francisco	794.20
Paulo Afonso IV	São Francisco	2,462.40
Xingó	São Francisco	3,162.00
Funil	Contas	30.00
Pedra	Contas	20.01
Boa Esperança	Parnaíba	237.30
Curemas	Piancó	3.52
<b>Wind Farms</b>		<b>198.1</b>
Casa Nova III	—	32.90
Casa Nova III	—	28.20
Casa Nova A	—	27.00
Acauã	—	6.00
Angical 2	—	10.00
Arapapá	—	4.00
Carcará	—	10.00
Corrupção 3	—	10.00
Coqueirinho 2	—	16.00
Caititú 2	—	10.00
Caititú 3	—	10.00
Papagaio	—	10.00
Teiú 2	—	8.00
Tamanduá Mirim 2	—	16.00
<b>Total</b>		<b>10,460.43</b>

\* Includes corporate assets.

Eletrobras Chesf ended 2022 with positive operating results, setting historical records. This performance resulted from the execution of maintenance plans, initiatives to Streamline interventions, modernization and upgrades, process reviews, incorporation of new technologies and compliance with regulatory requirements,

providing more profitability for the company and greater reliability and operational safety to the grid.

During the year, the operating performance of Eletrobras Chesf's generation and transmission assets was above the targets established by ANEEL and our parent company.

## IF-EU-000.C: Length of transmission and distribution lines

### Transmission lines and operational substation capacity in 2022

Transmission lines in operation, all voltage levels – corporate	21,999.32
Length of transmission lines (km) – SPE <sup>1</sup>	1,810.78
Operational substation capacity (MVA) – corporate <sup>2</sup>	79,193.67
Operational substation capacity (MVA) – SPEs <sup>3</sup>	4,083.70
Transmission lines coming online or offline, all voltage levels (km)	185.97
Net change in transformer capacity (MVA)	400.00
Approved Permitted Annual Revenue (RAP) for transmission assets in operation (R\$)	4,120,464,405.20

<sup>1</sup> Due to sectioning points made in the two lines of the original contract with SPE STN, Eletrobras Chesf gained an additional 46 km of transmission lines.

<sup>2</sup> The total transmission MVA was calculated on the basis established by Eletrobras, by considering the company's entire transformation capacity, excluding auxiliary services. We also accounted for 12,617.16 MVA in step up transformer capacity.

<sup>3</sup> The figure includes transmission substations and TL step-up substations.

MVA figures for the step-up substations of the Vamcruz and NESA wind clusters are being aligned and standardized across SPEs, and will be adjusted from the first quarter of 2023.

**Eletrobras Chesf ended  
2022 with positive  
operating results, reaching  
historic records**



**Eletrobras Chesf transmission lines.**  
Photo: André Schuler



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In 2022, Eletrobras Chesf extended by 52.82 km its wholly-owned transmission lines (TLs). This total refers to assets with authorizations issued or concession agreements signed but not concluded on ANEEL's Transmission Management System (SIGET).

Throughout the year, we did not participate in any transmission auctions.

### Transmission Line Projects

Sectioning of the 230 kV Olindina – Catu C1 TL at the Alagoinhas II substation	0.94 km
Sectioning of the 500 kV Angelim II – Recife II TL at the Suape II substation	49.74 km
Sectioning of the 500 kV Luiz Gonzaga – Milagres C1 TL at the Milagres II substation	1.5 km
Sectioning of the 500 kV Sobradinho – Luiz Gonzaga C2 TL at the Juazeiro III substation	0.64 km

In 2022, Eletrobras Chesf expanded ten of its substations, thereby increasing the company's transformation capacity. All these substations have authorizations issued or concession agreements signed but not concluded on the ANEEL SIGET system.

### Substation Projects

Milagres substation – Installation of fourth 230/69 kV transformer	100 MVA
Bongi substation – Installation of fifth transformer and replacement of three transformers	500 MVA
Fortaleza substation – Installation of fifth 230/69 kV transformer	100 MVA
São João do Piauí substation – Installation of third 500/230 kV autotransformer	300 MVA
Messias substation – third 500/230-13.8 kV autotransformer bank	600 MVA
Poções II substation – Installation of third 230/138 kV transformer	100 MVA
Morro do Chapéu II substation – Installation of second 230/69 kV transformer	150 MVA
Aquiraz II substation – Installation of fourth three-phase transformer and second grounding transformer	150 MVA
São João do Piauí substation – Installation of second 500/230 kV autotransformer	300 MVA
Icó substation – Installation of third 230/69 kV transformer	100 MVA
<b>Transformation capacity associated with these assets</b>	<b>2,400 MVA</b>

Eletrobras Chesf also invests in electricity generation and transmission through a number of partnerships, known as Special Purpose Entities (SPEs), in which it is a minority shareholder.

SPEs in which the company had a share on 12/31/2022:

- STN – Sistema de Transmissão Nordeste S.A.;
- Energética Águas da Pedra S.A.;

- Interligação Elétrica do Madeira S.A.;
- Energia Sustentável do Brasil S.A.;
- Norte Energia S.A.;
- Interligação Elétrica Garanhuns S.A.;
- Complexo Eólico Vamcruz; and
- Companhia Energética Sinop S.A.



## IF-EU-000.D: Total electricity generated, percentage by major energy source, percentage in regulated markets

Eletrobras Chesf's net electricity output is compiled from data collected from electronic meters every five minutes. The data is compiled every hour and sent to the Electric Power Trading Chamber (CCEE), where it is audited and returned to the company.

Total net electricity output (MWh)	40,079,144.00
Total net hydropower output (MWh)	39,609,877.84
Net wind power output (MWh)	469,266.16

*The figures are for corporate assets.*

### Annual growth rate

2020/2019 : 72%

2021/2020 : -26.31%

2022/2021: 52.05%

In 2019 and 2020, our generation output presented high growth as a result of positive hydrological conditions. The period 2020 to 2021 saw a reduction due to drought. In 2022, the reservoirs once again saw favorable rainfall levels and power generation grew against the previous year.

## IF-EU-000.E: Total wholesale electricity purchased

Eletrobras Chesf purchased 1,048.4 GWh for resale in 2022.

## IF-EU-550 a.2: (1) System Average Interruption Duration Index (SAIDI), (2) System Average Interruption Frequency Index (SAIFI), (3) Customer Average Interruption Duration Index (CAIDI), inclusive of major event days

SAIDI is the only indicator applicable to our business. SAIFI and CAIDI are not applicable to the regulation of the transmission industry in Brazil as they specifically relate to distribution operations. For this reason, there are no data and parameters available to calculate these indicators for our operations.

The Eletrobras Group's Robustness Index measures the ability of the backbone grid to withstand contingencies without interrupting power supply to consumers, considering only those disruptions originating within the Eletrobras Group's transmission system.

## Average plant availability factor by energy source (%)\*

	2020	2021	2022
Hydro	91.95	91.99	93.37
Wind	99.08	98.39	96.80

*\* Includes own assets (which may include corporate and jointly owned assets) and SPEs.*

*\* The historical data for 2020 and 2021 is based on the new methodology used from 2022 onwards.*

## Average plant availability and outage by source \* – 2022

	Hydro	Wind
Number of hours of planned outage	17,204.04	417.42
Number of hours of forced outage	9,672.91	2,829.60
Average availability in generation (%)	95.49	99.18

*\* Own assets (which may include corporate and shared properties).*

**In 2022, the reservoirs once again saw favorable rainfall levels and power generation grew against the previous year**

## Transmission Performance (Reliability)

	2020	2021	2022
System Average Interruption Duration Index (SAIDI) (hours)	4.33	3.97	3.97
Interruptions per 100 km/TL	1.13	0.95	1.06
System Robustness <sup>1</sup>	94.84%	91.39%	96.55%
Transmission Losses	1.16%	0.78%	0.49% <sup>2</sup>
Average Service Availability Index (ASAI)	99.95%	99.95%	99.95%

<sup>1</sup> System Robustness against any load disconnections.

<sup>2</sup> The result of an agreement to a new calculation methodology approved by the Operation Committee (COP).

## IF-EU 000B: Total electricity delivered to: personal, residential and other customers, and to wholesale consumers

In 2022, Eletrobras Chesf delivered 45,539 GWh to distributors and trading companies, accounting for 91.3% of the total electricity delivered, in addition to 4,313 GWh to industrial customers, or 8.7% of the total.



Transmission lines in Paulo Afonso (BA). Photo: Zeca Teixeira

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Disclosure	Page	GRI equivalent
<b>Environmental management</b>		
IF-EU-110a1: Gross global Scope 1 emissions, percentage covered under emissions-limiting regulations, and percentage covered under emissions-reporting regulations.	10	305-1
IF-EU-110a2: Greenhouse gas (GHG) emissions associated with power deliveries.	10	305-2
IF-EU-110a3: Description of long-term and short-term strategy or plan to manage Scope 1 emissions, emission-reduction targets, and an analysis of performance against those targets.	11	305-4; 305-5
IF-EU-110 a.4: (1) Number of customers served in markets subject to renewable portfolio standards (RPS) and (2) percentage fulfillment of RPS target by market	Brazil's market has no specific regulations on renewable portfolio standards (RPS) for generation companies.	305-3
IF-EU-120a1: Air emissions of the following pollutants: NO <sub>x</sub> (excluding N <sub>2</sub> O), SO <sub>x</sub> , particulate matter (PM <sub>xx</sub> ), Pb, and Hg; percentage of each in or near areas of dense population.	We do not generate NO <sub>x</sub> , SO <sub>x</sub> and other significant air emissions.	305-7
IF-EU-140a1: Total water withdrawn and total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress.	13. Eletrobras (through its subsidiaries) monitors water use for hydroelectric power generation (non-consumptive) in areas with water stress. Eletrobras Group companies consume no water in areas with water stress.	303-3, 303-4, 303-5
IF-EU-140 a.2: Number of incidents of non-compliance associated with water quantity, quality permits, standards, and regulations	There were no incidents in 2022 related to violations of regulations on water volumes and quality that resulted in formal obligations.	307-1



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Disclosure	Page	GRI equivalent
IF-EU-140a3: Discussion of water management risks and description of strategies and practices to mitigate those risks	14	303-1
IF-EU-150a1: Amount of coal combustion residuals (CCR), percentage recycled	Not applicable to Eletrobras Chesf.	305-6
<b>Risk management</b>		
IF-EU-320a1: Total recordable injury rate (TRIR), fatality rate, and near miss frequency rate (NMFR)	5	403-9
IF-EU-550a1: Number of incidents of non-compliance with standards or regulations on physical and cyber security	8	418-1
<b>Installed capacity and electricity generated and transmitted</b>		
IF-EU-000.B: Total electricity delivered to: personal, residential and other customers, and to wholesale consumers	19	
IF-EU-000.C: Length of transmission and distribution lines	16	G4-EU4
IF-EU-000.D: Total electricity generated, percentage by major energy source, percentage in regulated markets	18	G4-EU2
IF-EU-000.E: Total wholesale electricity purchased	18	
IF-EU-240a.1: Average retail electric rate for (1) residential, (2) commercial, and (3) industrial customers	Not applicable to Eletrobras Chesf.	
IF-EU-240 a.4: Discussion of impact of external factors on customer affordability of electricity, including the economic conditions of the service territory	Not applicable to Eletrobras Chesf.	G4-EU23



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Disclosure	Page	GRI equivalent
IF-EU-420 a.1: Percentage of electric utility revenues from rate structures that are decoupled and contain a lost revenue adjustment mechanism	Not applicable to Eletrobras Chesf.	
IF-EU-420a.2: Percentage of electric load served by smart grid technology	Not applicable to Eletrobras Chesf.	
IF-EU-420 a.3: Customer electricity savings from efficiency measures, by market	Not applicable to Eletrobras Chesf.	G4-EU27
IF-EU-550 a.2: (1) System Average Interruption Duration Index (SAIDI), (2) System Average Interruption Frequency Index (SAIFI), (3) Customer Average Interruption Duration Index (CAIDI), inclusive of major event days	18	G4-EU28; EU29; EU30

# SASB REPORTING STATUS

Our SASB reporting status is presented below based on the level of coverage of the different dimensions. Percentages have been calculated based on the extent to which information is responsive to sector-specific disclosure requirements for Electric Utilities & Power Generators.



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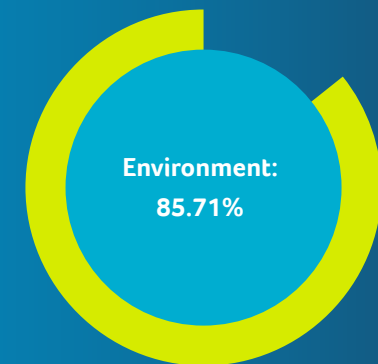
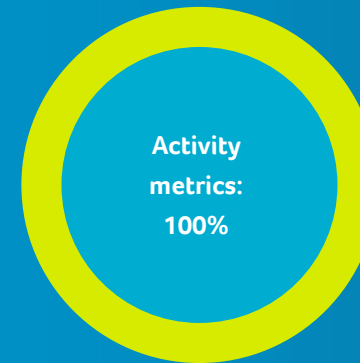
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# CREDITS

## OVERALL COORDINATION

Eletrobras Chesf Business Sustainability  
Department

## WRITING, SASB CONSULTING AND DESIGN

grupo report – rpt.sustentabilidade

**Eletrobras Chesf provides several channels  
for communication with stakeholders.**

FOR COMMUNICATIONS RELATED TO THIS  
REPORT, PLEASE WRITE TO  
[sustentabilidade@chesf.com.br](mailto:sustentabilidade@chesf.com.br)

