Eletrobras

THEMATIC BOOKLET | 2023

Innovation and Technology



Eletrobras

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About this booklet

Welcome to the Eletrobras' Innovation and Technology Thematic Booklet. This document complements the Company's 2023 Annual Report, providing more in-depth information on the subject.

The Innovation and Technology theme is considered material for Eletrobras and our management approach and main indicators are covered in the Annual Report, following the Global Reporting Initiative (GRI) guidelines.

Through this document, we detail how our management, strategies, initiatives and innovation and technology actions create value for the company and its *stakeholders*.

The report includes information on our five subsidiaries (Eletrobras CGT Eletrosul, Furnas, Chesf, Eletronorte and Eletropar) and the six Special Purpose Entities (SPEs) in which we have control: Santo Antônio Energia - SAESA, Brasil Ventos, Baguari, Retiro Baixo, Teles Pires and Eólica Ibirapuitã.

If you have any questions or comments about the content presented, please contact our sustainability team:
sustentabilidade@eletrobras.com

Enjoy your reading!

** Despite the recent incorporation of Furnas into Eletrobras, this booklet reflects information in line with the 2023 Annual Report, compiled before the incorporation, without prejudice to the reported processes.*
*** We recently took control of two more SPEs: Vale de São Bartolomeu (VSB) and Triângulo Mineiro Transmissora (TMT). However, these acquisitions do not affect the processes reported in this booklet.*

Delivering value

Over the course of 2024, we will be releasing a number of reports on our strategy and sustainability performance, with content that complements and deepens the Annual Report:

- Hotsite and Executive Summary.
- Indicators Booklet, reporting the GRI indicators of Eletrobras and SPEs.
- Thematic Booklets, which provide in-depth reports on our management and initiatives in specific areas such as Innovation and Technology.
- SASB, TCFD and Sustainable Finance reports, in compliance with other guidelines.
- SDG Supplement.

These documents can be accessed on the Eletrobras Portal's Sustainability page. To increase the transparency of our business, we have also made available the website Energia a Limpo, which addresses and provides answers to the most sensitive topics in our activities.

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About Eletrobras

We are Eletrobras (Centrais Elétricas Brasileiras S/A), leader in electricity generation and transmission in Brazil.

We were created in 1962 as a public company and, in 2022, we completed our capitalization process, reducing the Federal Government's shareholding from 69% to approximately 43%. As a result, the government is no longer the controlling shareholder and we have become a privately controlled company. We are publicly traded and our shares are traded on the São Paulo (B3) and New York (NYSE) stock exchanges.

We operate throughout the national territory, based on the generation and transmission operations of Eletrobras CGT Eletrosul, Chesf, Eletronorte and Furnas. In addition to these, we control a holding company, Eletrobras Eletropar, which operates in the financial sector.

We also control six Special Purpose Entities (SPEs) and have stakes in 63 others, through which we operate in transmission and generation projects.

75 initiatives

Transformation office

14 million

invested in volunteer projects

96.5%

of the total energy generated comes from renewable sources

Low emission

of greenhouse gases,
contributing to making the national energy matrix one of the cleanest in the world

R$ 533.9 million

in innovation and technology projects

Geographic distribution

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Generation

100 plants in operation, of which:
- 47 hydroelectric;
- 43 wind;
- 9 thermoelectric;
- 1 solar.

44,654.5 MW of installed capacity, of which:
- 67% corporate ventures and shared ownership*;
- 33% in SPEs.

146,946.6 GWh generated, of which:
- 95% hydro;
- 1.5% wind;
- <1% solar;
- 3.5% thermoelectric.

44,654.5 MW
of installed capacity

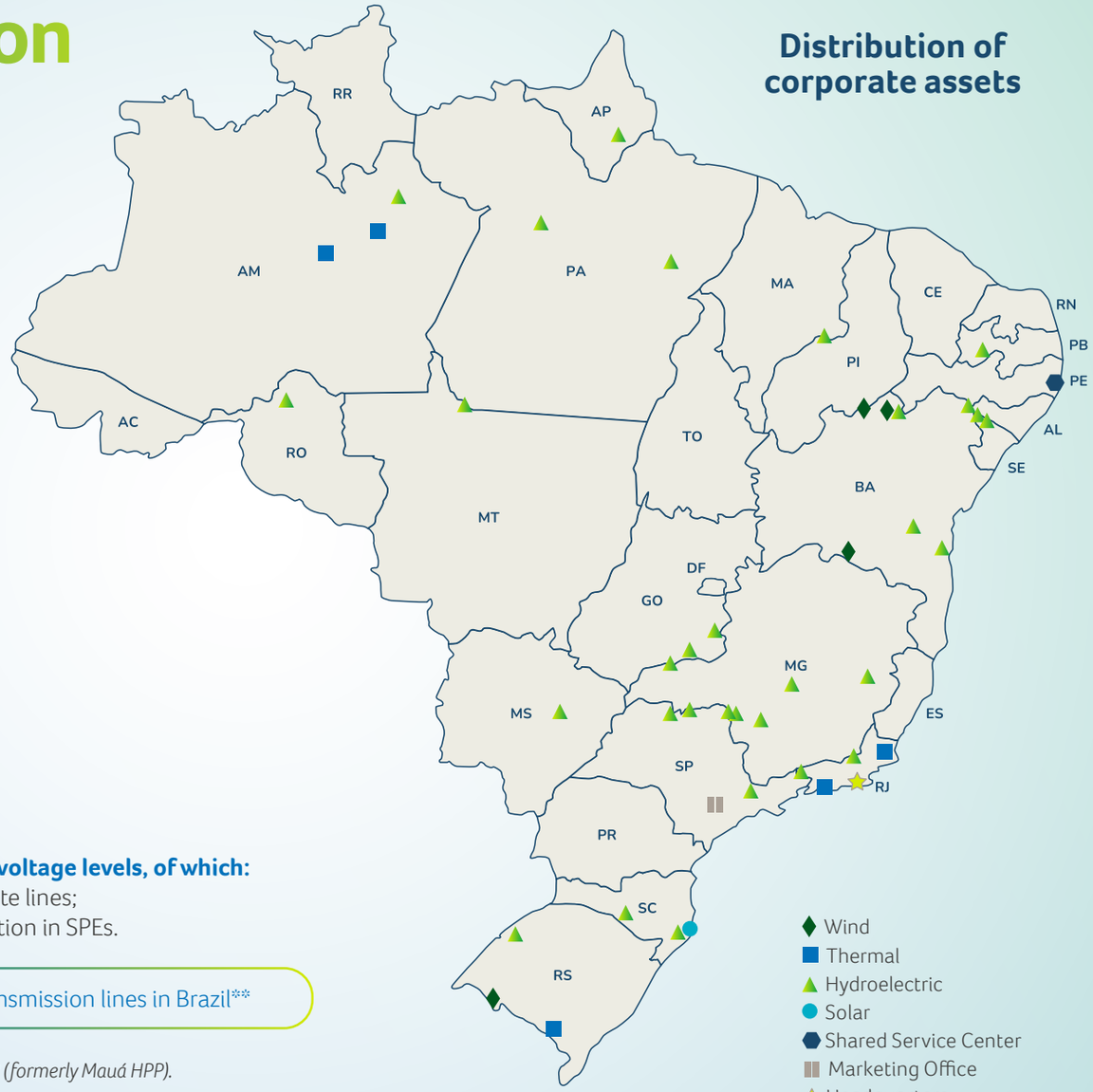
22%
of Brazil's total 199,325 MW

Transmission

73,788 km of lines at all voltage levels, of which:
- 66,539 km of corporate lines;
- 7,249 km of participation in SPEs.

37% of the total transmission lines in Brazil**

Distribution of corporate assets



** Serra da Santo Antônio Energia HPP, Manso HPP and Governandor Jayme Canet Junior HPP (formerly Mauá HPP).*
*** Compared to data from the National Interconnected System (SIN) for November 2023.*

Contribution to the 2030 Agenda

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The Sustainable Development Goals (SDGs) are 17 objectives that make up the 2030 Agenda, defined by the United Nations (UN) with the purpose of engaging organizations around the world in overcoming the main challenges of development and sustainability.

Covering a wide range of topics, such as eradicating poverty, fighting climate change and preserving natural resources, the SDGs connect business strategy with the global agenda.

We have defined nine priority SDGs, where we have the greatest potential to contribute to achieving the goals proposed by the UN.

Throughout this publication, we present the actions that generated a positive impact on these SDGs in 2023, related to the Innovation and Technology theme.



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Commitment to innovation



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We believe that innovation and sustainability are cornerstones for the success of our business. We constantly invest in research, development and new technologies, with a special focus on digital transformation and artificial intelligence. Our aim is to find new ways of operating and improving efficiency in the generation, transmission and sale of clean energy.

The Innovation and Technology theme is core to the company's current transformation process, and is included in the strategic drivers and corporate policies described below.

Strategic Plan

In 2023, we updated our Strategic Plan in line with the new scenario in which Eletrobras will operate as a private company. The Innovation and Technology theme was chosen as one of the four guidelines that will govern business development over the coming years:

Pursuing solutions that ensure business competitiveness, based on the **digitalization** of operational and corporate processes, and adaptability to new technologies.

Code of Conduct

The theme is also one of the guidelines mentioned in our Code of Conduct, in the Prosperity Pillar. Below are some of the commitments described:

Innovating in the energy sector

- Commitment to innovation and the **transformation of business models** to create shared value, including investments in sustainable infrastructure, energy and technology.
- Promoting **research, scientific development and innovation**.
- Evaluating the **impact of new projects or products**, or significant changes to existing ones.
- Aiming to increase the **operational efficiency** of assets or processes or acquiring **technological expertise** for new businesses, as well as developing studies and research connected to **sustainable businesses** and new opportunities.
- Promoting the dissemination of the **innovation concept** among professionals as a new way of thinking and looking at everything we do.
- **Digital transformation:** investing in projects and technologies that promote the **automation and standardization** of business and management processes.

R&D + I guidelines

In our daily work, we follow the guidelines of our Research, Development and Innovation Policy, addressing innovation as a crucial business strategy for the short, medium and long term.

In R&D+I management, we must seek to:

- Stimulating a culture of innovation;
- Enabling the company's technological independence;
- Building an innovative ecosystem, promoting networks and connections with entities to implement innovation;
- Increase the investment effectiveness in innovation, achieving innovative solutions (technological or not) to critical organizational issues;
- Cut the time between the conception of an innovative solution and its commercial viability.

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R&D+I management R&D+I management

In 2023, we created the Executive Vice-Presidency for Innovation, R&D, Digital and IT, which is responsible for managing the issue throughout the company while ensuring strategic alignment between all our subsidiaries.

Our investments in Research, Development and Innovation (R&D+I) are in line with Law 9.991/2000, which determines that at least 1% of Net Operating Revenue (NOR) must be invested in R&D activities, in the sector fund and in the Energy Research Company.

All the group companies allocate resources both to internal research and development and to public calls for proposals and programs for scientific research and technological development.

The themes and projects linked to innovation must be broken down into Technology Initiatives (TIs), with their respective indicators and targets. The Value Deliverables (VDs) required to achieve these targets are then identified. This governance allows the innovation sector to be integrated with other company departments, focused on developing projects that generate value for Eletrobras.

To effectively manage our innovation portfolio, governance is made up of an Innovation Committee, made up of Vice Presidents, which must meet quarterly to decide on the TI and VD portfolio. We also have Technical Committees, made up of members appointed by the VPs, which must meet monthly to delimit and prioritize the value deliveries of each theme. These bodies are also responsible for monitoring internal indicators that measure productivity during project implementation.

Each completed project must be evaluated by an audit conducted by entities accredited by Aneel, internal audits and external audits based on the Sarbanes-Oxley Act (SOX).

Digital transformation

The cultural transformation we have undergone over the last year, given the need to integrate processes and create an environment of high corporate performance, is based on digital transformation.

By speeding up digital initiatives for new projects and revenue streams and enhancing our online presence, technology helps us revolutionize our businesses.

To structure the company's Digital Transformation, the Centers of Excellence Department (CoEs) was created, which operates in the Data, Artificial Intelligence & Analytics, Industrial IoT (Internet of Things), Industrial Robotization, Hyper automation and Digital Platforms for Commercialization segments.

New support tools and technological solutions are being implemented and have had their use deepened in critical areas, such as IT infrastructure, storage systems, data intelligence, process automation, organization, sharing and flexible access to information, ERP system (SAP) and content sharing tools.



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Information security

Consistent with our digital transformation, the systems' availability and the integrity and confidentiality of information are critical factors for business success. We constantly strive to minimize and prevent events that could compromise our operations' digital security, avoiding material damage, data loss, financial losses, service interruptions, unauthorized disclosures and reputational damage, among other possible impacts.

We constantly invest in improving the management of this theme, working according to the Information Security Policy, which sets out four principles for the management of this theme:

- Guaranteed availability, so that information is accessible and available for use when needed.
- Ensuring the integrity of the information, so that it is not modified or destroyed in an unauthorized or accidental way.
- Guaranteed confidentiality of the information, so that it is available or disclosed only to authorized and accredited individuals, systems, bodies or entities.
- Guarantee of authorship authenticity and origin of the information, so that they are always identifiable.

Information Security is therefore a priority in our risk matrix, which is monitored through regular reports to the Board of Directors. Our approach to cybersecurity follows the guidelines of the NIST Cybersecurity Framework, developed by the National Institute of Standards and Technology (NIST) in the United States (USA). Every year, an independent auditor validates the information security indicators, issuing a report on the company's level of maturity.

The care taken with this issue is also mirrored in our professional staff. Apart from general and compulsory training for the entire team, carried out via the Eletrobras Companies Corporate University (Unise), we also organize events such as workshops and seminars.

In 2023, we started specific training on digital security in business processes, such as People Management and Supplier Management. We are also developing a platform specializing in training, campaigns and simulations, focused on Information Security and Privacy.

On our website, we provide a Privacy Portal, which explains to our stakeholders how we handle personal data and how data subjects can make requests. The Portal also features Eletrobras' Data Protection Officer (DPO).

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Our innovation programs and initiatives are geared to the guidelines of Aneel's R&D Program, which prioritizes projects that add value to the energy industry and companies in the sector, as well as seeking partners to expand resources, increasing investment value.

Innovation Grid

The Innovation Grid is our platform for connection, engagement and relationships with external agents in the innovation ecosystem. It is comprised of open innovation initiatives, market connection modules, initiatives to engage and attract young talent and demands for technological acquisitions.

Furthermore, the program is aimed at meeting strategic demands and encouraging innovative solutions within the energy transition context, developing new business models that contribute to the company's sustainability.

The Innovation Grid's work is divided into four modules:



Discover more about the initiative on the Innovation Grid website.

Power Up

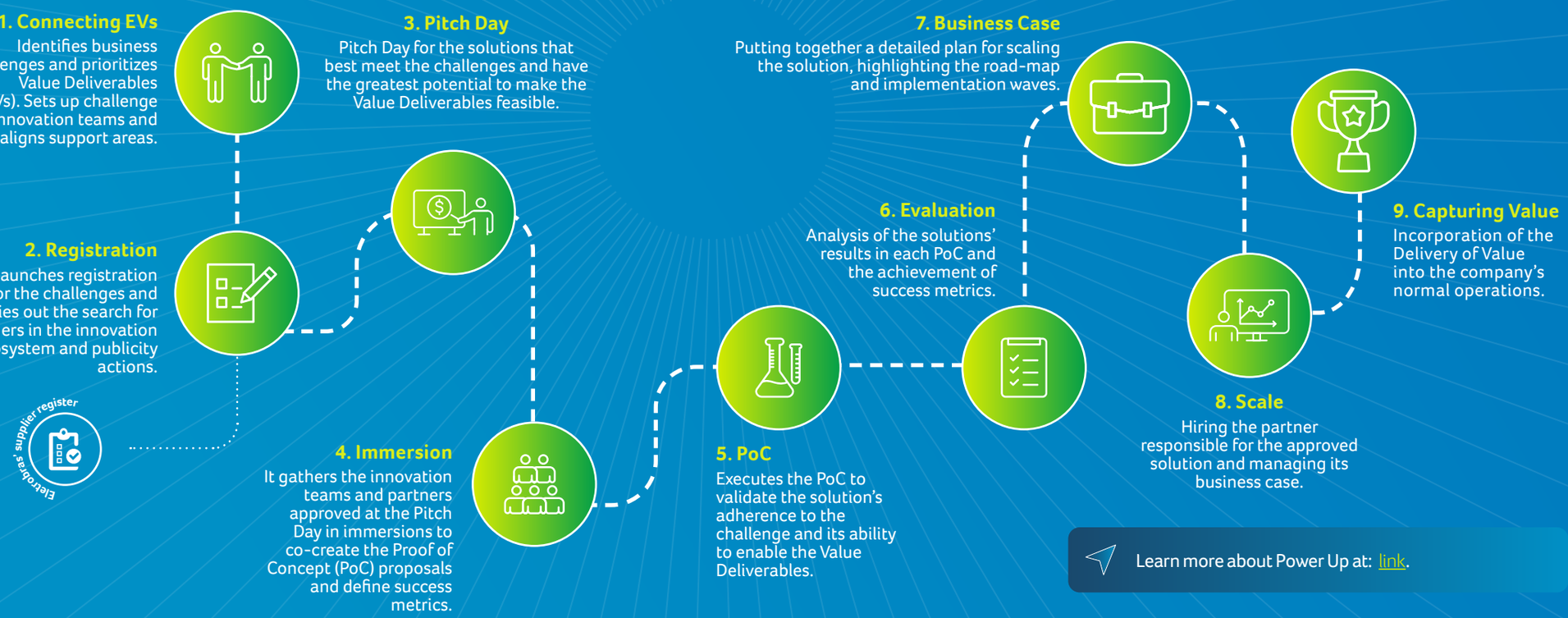
Power Up Eletrobras regularly proposes new challenges to the market, aimed at solving business issues and encouraging swift experimentation with solutions. This provides our partners with business opportunities and contributes to the continuous development of their technology.

The program is aimed at startups, companies and partners in the traction and scale phase, who already have revenue and are on the market.

12 challenges launched
until the end of 2023

in areas such as process automation, professional development, work safety and supplier relations.

The Power Up track



Learn more about Power Up at: link.

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Tech Partnerships

Its aim is to expedite the deployment of technologies developed by universities, research institutions and companies that can be implemented by Eletrobras in order to solve business demands.

The Program operates through technological co-development or the maturing of pre-existing solutions and products. Its distinguishing feature is the joint development of business models to scale up and sustain the solutions developed.

To participate, the partner institution must have technological products in its innovation portfolio that have been designed, developed, implemented and successfully scaled by its clients, demonstrating its ability to materialize products and capture value.

Learn more about Tech Partnerships at: link.

Tech Partnerships Journey

1. Connecting EVs
Identifies business challenges and prioritizes Value Deliverables (EVs). Sets up challenge innovation teams and aligns support areas.

2. Reverse Pitch
Online presentation of the challenges to ecosystems.

3. Registration
Launches challenges for submitting proposals, searches for potential partners.

4. Evaluation
Evaluates project proposals by applying the defined criteria.

5. Disclosure of results
Discloses results with individual feedback.

6. Consolidation
Consolidate the proposal with the bidder, involving the business areas.

7. Hiring
Contract formalization.

8. Kick-Off
Start of project execution.

9. Internalization and publicity
Internalization of products and dissemination of results.

50 solutions developed in partnership
until the end of 2023

on topics such as:

- energy generation and storage;
- optimization of asset performance;
- recovery and protection of springs;
- development of an electric vehicle concept;
- monitoring workers' health.

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Tech Transfer

Launched in 2024, the Innovation Grid's newest module focuses on identifying and collaborating with strategic partners to develop and scale technological solutions that meet the company's needs.

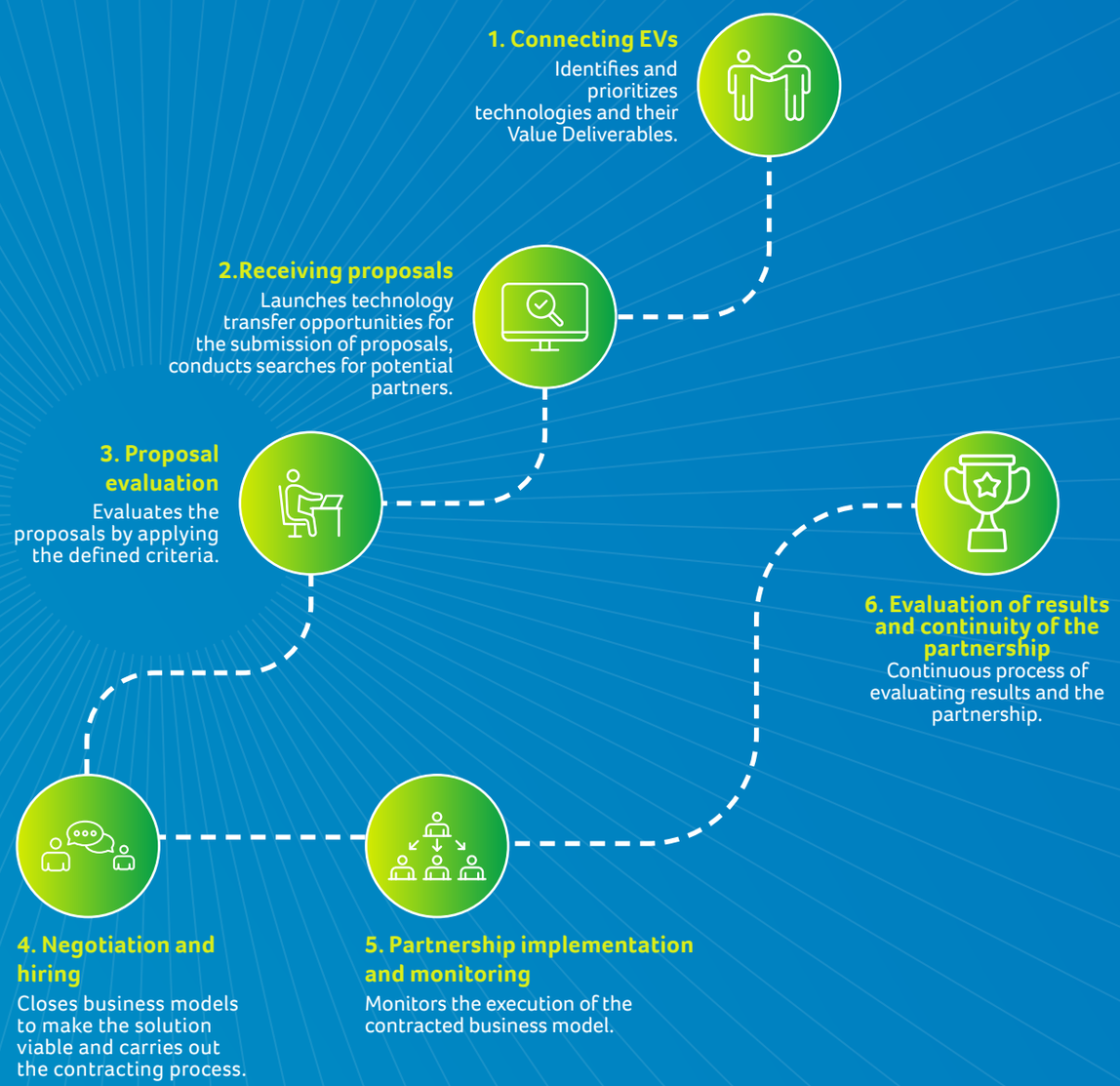
The module seeks partnerships that enable the scalability of solutions with commercial potential in both the national and international markets.

Furthermore, Eletrobras offers a long-term contract for applying the solution and service, support and mentoring from specialists throughout the entire technology transfer process, ensuring the viability of the final solution for the market.

The first technological opportunity offered by Tech Transfer is geared towards optimizing and automating the installation and replacement of signaling balls on power transmission lines, with the aim of promoting operational efficiency and safety.

Learn more about Tech Transfer at: link.

Tech Transfer Journey



Spark

Spark is a development program aimed at students, which aims to encourage the education of new talents in the areas of Science, Technology, Engineering and Mathematics (STEM).

Throughout the Program, talented students are selected to take part in multidisciplinary teams, learn about the company's challenges and business and connect with our innovation teams.

During the six-month initiative, participants not only get to know the company's routine, but also focus on solving challenges in which they put their academic knowledge into practice.

Developed throughout 2023, Spark was launched in the first quarter of 2024.

So far, three challenges have been launched, two of which are underway and one of which is open for registration.

Learn more about Spark at: link.

Spark Journey



1. Education
Selection of participants, assembly of groups and leveling training.

2. Deep dive into problems
Alignment with business challenges and identification of opportunities, through surveys and interviews.

3. Ideation of solutions
Study of business details, jobs to be done, and definition of solution hypotheses.

4. Prototyping
Validation of the hypotheses and development of the Minimum Viable Product (MVP).

5. Presentation
Completion of theses and presentation of results. Go/No-go decision on projects.

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Electric Energy Research Center (Cepel)

Cepel is the largest electricity research center in the southern hemisphere and has been contributing to the development of Brazilian industry and the electricity sector for 50 years.

In partnership with universities, it has consolidated its activities in research, development and innovation in the areas of energy optimization, electrical network analysis, system automation, asset management, renewable energies and sustainability, experimental research, testing and technological services.

The Center provides its researchers and technicians with a broad technical and scientific infrastructure to create complex and innovative solutions for the generation, transmission, distribution and commercialization of energy.

The Eletrobras companies are founding partners of Cepel, using the center as the implementer of their project portfolio since 1974.

Today, its role in our R&D+I structure remains vital to the business's transformation.

Learn more about Cepel at: link.

Products and services offered by Cepel

Products

Own collection of methodologies and computer programs to support the diverse needs of the Brazilian electricity system.

Certification

Evaluates the compliance of products, processes, systems and people with regulatory requirements or relevant documents.

Services and Tests

A wide variety of laboratory tests, some of which are accredited by Inmetro's General Accreditation Coordination (Cgcre). The tests follow national and international standards, as well as our own technical specifications or those supplied by clients.

Training

Technical training in computer programs and research activities in the areas of electrical system operation, automation, energy optimization, the environment, electrical networks, asset management and renewable energies.

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Eletrobras projects run by Cepel in 2023

R$ 137.8 million

invested at Cepel in 2023. The amounts have been earmarked for a number of projects underway, with a focus on Innovation and Sustainability:

Socio-environmental Vulnerability to Climate Change

Development of a methodology to map the degree of climate vulnerability of indigenous communities and ecosystems in the asset's areas of influence.

Emisfera

Cepel product used for accounting emissions. In 2023, a new, more modern version was created, integrated with the analytical IGS.

Human Rights Due Diligence Methodology

Its goal is to develop a methodology aimed at mitigating the risk of human rights violations related to the activities of Eletrobras and its partners.

AAEXP-Footprints

The aim is to develop methodologies for calculating the carbon footprint and water footprint for electricity generation and transmission projects.

IGS Project

Offers solutions for the management, analysis and reporting of ESG indicators.

220 Program

Committed to promoting a culture of innovation within the company, the 220 Program provides learning and development opportunities for professionals, enabling them to work in innovation processes.

The program currently has two development journeys underway:

Design Journey:

focus on the problem from the user's point of view

355 enrollments

Citizen Data Scientist Training Journey:

160 enrollments

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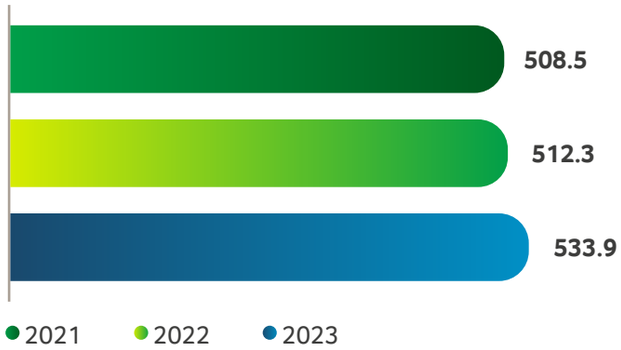


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R$ 533.9 million

invested in innovation and technology projects in 2023



These resources include the mandatory ones defined by Law 9.991/2000, within the scope of Aneel's R&D programs, the projects developed by Cepel, the MME and the National Fund for the Development of Science and Technology (FNDCT). Also included are investments earmarked for initiatives developed by the companies themselves.

Aneel's investments in innovation projects totaled R$216.2 million in 2023.

INVESTMENTS IN ANEEL'S INNOVATION PROJECTS (R$ MILLION)

	2021	2022	2023
Alternative sources of power generation	56.4	54.9	43.1
Thermoelectric plants	47.9	0.65	1.9
Basin and reservoir management	8.2	9.4	4.2
Environment	7.4	7.3	7.7
Safety	16.8	7.5	11.1
Energy efficiency	16.9	16	5.8
Power system planning	26.4	22.3	25.9
Operation of power systems	50.8	92.1	21.7
Supervision, control and protection of power systems	47.9	63.2	39.1
Quality and reliability of power services	4.2	8	38.3
Metering, billing and combating commercial losses	1.6	1.6	0.2
Other	17.1	15	17.4

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Main Research and Development themes in 2023

Over the year, we carried out a number of research projects aimed at developing the business and creating value.

1
De carbonization

2
Electrification

3
Environment and Society

4
Green Hydrogen

5
Virtual and Augmented Reality

6
Urban Hybrid Generation and Storage

7
Rural Hybrid Power Generation

8
Floating Photo-voltaic Generation System

9
Floating Photo-voltaic and Wind (Hybrid) Generation

10
Energy Storage and Renewable Energy Generation

11
Digital transformation

12
BIM methodology (Building Information Modeling)

13
Energy Storage

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Supporting the energy transition

At Eletrobras, we are aware of our potential to contribute to the planet's energy transition. For this purpose, we continuously invest in R&D+I projects focused on making energy consumption more sustainable for society as a whole, with initiatives ranging from the development of new renewable source generation technologies to electric mobility projects.

Next and on the following pages, we present some of the projects carried out during the year:

An intelligent system with a wind turbine integrated with solar, storage and hydraulic energy sources as a development platform for continuous improvements in the electricity generation process.

Development of an intelligent hybrid generation system for R&D, with control suitable for stable and improved operation and maintenance. Includes real-time simulators for optimizing performance and qualified production capacity based on time forecasts of the system on a scale of hours, days and months.

Wind generator for low winds

It aims to evaluate the feasibility of a new wind energy generation platform, using new manufacturing technologies to take advantage of regions with medium and low wind intensities.

Photo-voltaic container - Waimiri Atroari

In 2023, we entered into an agreement with Cepel and Enertech, a clean energy developer supported by the Kuwait government, to implement carbonization solutions in the Amazon. The initial project entails the installation of a modular container with solar panels and batteries in the Waimiri Atroari indigenous community. This initiative aims to improve local quality of life by promoting productive, cultural and educational activities, and will serve as a model for expanding renewable energy in Brazil.



The project is in line with the energy pact "Decarbonization of the Electrical Matrix of Isolated Systems in the Amazon", established with the UN and the National Bank for Economic and Social Development (BNDES).

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Green Hydrogen

Green hydrogen technology (H2V) is one of the market's - and Eletrobras' - major commitments to promoting a low-carbon economy. It is based on the use of hydrogen as a fuel, obtained from a technique called water electrolysis, using renewable energy. This produces an efficient, clean fuel with no greenhouse gas emissions.

In 2023, our Board of Directors approved the strategic guidelines for new business involving H2V, such as the priority of supplying the energy demand of the hydrogen production chain with clean and renewable energy, evaluating opportunities for its production and forging strategic alliances with potential customers and suppliers.

We currently have an H2V production plant at the Itumbiara hydroelectric power station (2,000 MW), on the border between Minas Gerais (MG) and Goiás (GO), which uses solar and hydroelectric power to ensure the electrolyzer runs 24 hours a day. The plant was the first of its kind to start operating in Brazil in 2021 and has produced over 3 tons of renewable hydrogen.

In 2023, we received the first Green Hydrogen certification in Brazil, issued by the Electricity Trading Chamber (CCEE), certifying that hydrogen is produced from renewable sources.

In March 2024, we announced a partnership with the company Paul Wurth Brasil, to collaborate in the market for the production and use of renewable hydrogen (H2R) in industrial processes. The agreement deals with the construction and operation of a 10 MW plant for the production of H2V, with the aim of supplying fuel to a steel mill. The studies for the installation are expected to be completed in less than a year.

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Thermosolar heliothermal collector

Eletrobras Furnas is developing a pioneering study in Brazil to generate electricity from a solar heliothermal system at its Civil Engineering Technology Center in Aparecida (GO).

With an investment of R$7.5 million, the project is designed to create Brazil's first heliothermal collector and build a solar thermal power plant capable of generating 1 MW of electricity, enough to supply around a thousand households.

Thermosolar energy works with parabolic mirrors that concentrate sunlight at one point, heating a fluid that generates steam to move turbines and produce electricity. The study is a partnership between Eletrobras Furnas, Cepel and Eudora Energia, a pioneer in heliothermal power plants in Brazil.

The thermosolar collector, called SCE (Solar Collector Element), is made up of a cylindrical-parabolic mirror, absorber tube, joints, connections, tracking system and support structure.

Eletrobras Furnas also invests in energy storage technologies. The company uses batteries to provide quick responses and stabilize parameters such as frequency and voltage, ensuring power supply quality. It is also exploring the use of hydrogen for long-term storage, which helps mitigate charge loss over time and offers a longer-lasting solution.



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Virtual Reality in asset management

The use of Virtual and Augmented Reality technologies is a growing area of interest and research in the Brazilian electricity sector. To this end, Eletrobras Eletronorte is conducting the project "Use of virtual and augmented reality applied to the engineering, maintenance and control phases of the HVDC system" in partnership with the Federal University of Uberlândia (UFU) and CG Works Computação Gráfica LTDA.

Its aim is to investigate and propose software and hardware adaptation solutions, based on Virtual Reality and Augmented Reality interfaces, for the engineering, operation, control and maintenance of Direct Current Transmission Systems (HVDC).

The development will focus on visualizing the facilities of the substations and valve rooms of the HVDC system in Araraquara and Porto Velho, meeting navigation, immersion and interaction requirements. The technology also includes real-time training and assistance components.

Technological prospecting in ESG for the electricity sector

Eletrobras is connected to Energy Future, the Brazilian electricity sector's open innovation hub, and is taking part in its ESG innovation cycle. This cycle is organized to steer and channel efforts and actions around structuring issues in the Brazilian electricity sector, through the generation and dissemination of technical content, coordination of qualified discussions, open innovation challenges and the creation of a ranked database.

As an Ambassador, Eletrobras has its logo included in publicity materials, articles and reports, as well as taking part in specific events and acting in the evaluation of prospective proposals.



To learn more about the project, visit the website: https://www.energyfuture.com.br/

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Implementation of biogas plant in Itapiranga (SC)

The project aims to incorporate biogas from pig and cattle waste into the Brazilian energy matrix, generating electricity from organic waste from 11 rural properties in Itapiranga (SC). With an investment of R$6.6 million, the research is funded by Eletrobras CGT Eletrosul through the 2021 Eletrobras Companies Socio-Environmental Projects Call for Proposals.

The initiative envisages using biogas to reduce farmers' costs and generate income, as well as mitigating their environmental impact. The bio-digestion process generates commercial by-products and helps to reduce local pollution, transforming methane into carbon dioxide and reducing the environmental impact by 95%.

The project was a reference for the Biogas Legal Framework in Santa Catarina and for updating Aneel Resolution 482 on distributed generation.

Over the course of 2023, a number of infrastructures were completed and commissioned, including an 11-kilometer gas pipeline for biogas, a 480 kVA Mini Thermoelectric Plant (MCT), a substation for connection to the National Interconnected System (SIN), as well as 11 biodigesters with different technologies, such as covered lagoon, stainless steel, slate stone and concrete.



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Energy storage and floating photo-voltaic and wind generation

The electricity system operates on a daily cycle, with consumer demand being low at the start of the day and rising to a peak in the early evening. Intermittent sources, such as photovoltaics and wind power, can generate more energy than demand at certain times, but this surplus energy is not usually used. The solution we are studying is to store this surplus to be used at peak times.

In this regard, a project led by Eletrobras Furnas is evaluating the synergy between hydroelectric and solar sources, with the storage of seasonal and intermittent energy in battery systems.

Two storage technologies have been adopted: lithium batteries and hydrogen. Batteries are ideal for stabilizing swings in demand, while hydrogen can be stored for months, compensating for the limitations of the normal battery cycle. Their combined use makes it possible to meet both the need for swift response and extended storage.

The project aims to consolidate a single site for comprehensive studies on storage cycles using clean, renewable energy.

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“Regenerascentes”

With the aim of encouraging the protection and recovery of springs and degraded areas, in 2023 Eletrobras Furnas launched an app to help raise awareness about water and the preservation of natural resources. Named “Regenerascentes”, the tool was launched during the World Water Day week. The app is designed to provide technical recommendations and support for the recovery of springs on rural properties.

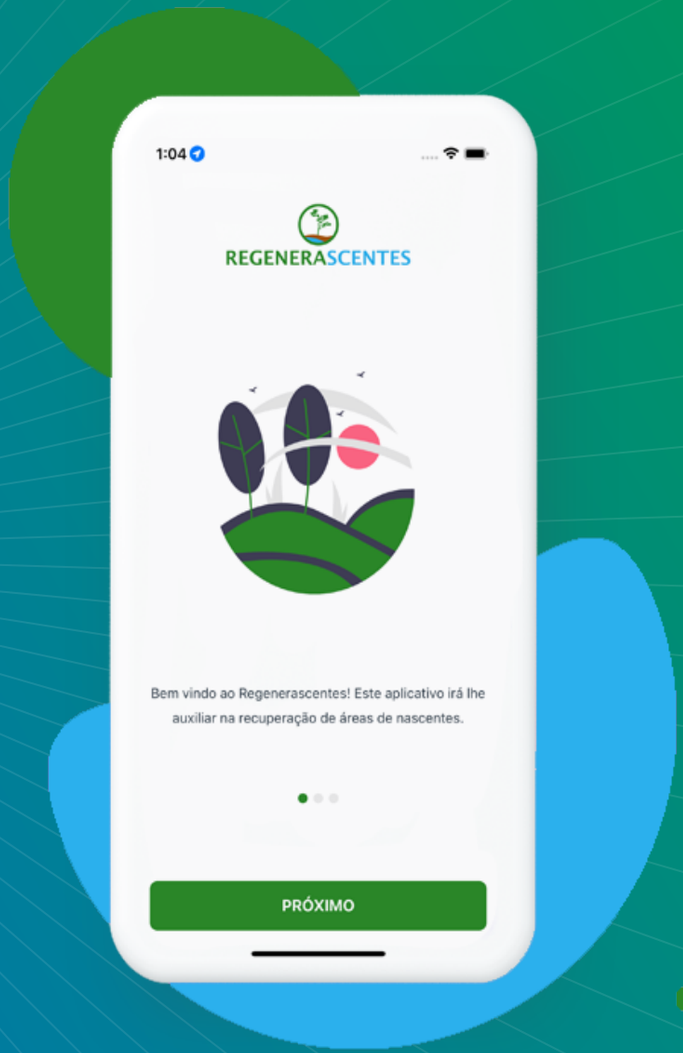
The technology is the result of the Nascentes Project, aimed at implementing a sustainable model for the recovery and protection of these resources, providing environmental benefits such as the conservation of reservoirs while simultaneously creating income for rural producers.

Registered in the Research and Development Program (R&D) of the National Electric Energy Agency (Aneel), the project is being carried out by Ingá Engenharia in partnership with the Federal University of Viçosa and the Federal University of Lavras, using Artificial Intelligence in an innovative way.

The app provides immediate technical recommendations for environmental recovery. To do this, the user needs to define the area to be recovered and fill in a list of information about it. Based on parameters such as biome, soil moisture and slope, the app generates a report with guidelines for planting and restoring the spring, including plant species with the potential to generate income for rural landowners.

Initially, the platform will be used by landowners in the spring areas of the Rio Grande basin and will later be expanded to the entire state of Minas Gerais (MG).

For more information on the project, visit the website https://regenerascentes.com.br/




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