Neoenergia

Greenhouse Gas Inventory

Base year 2023

Luzia solar park – Neoenergia Renewable Complex (PB)

Contents

Superintendence of Innovation, Sustainability,
Climate Change and Corporate Social Responsibility

01.
Introduction

1. Introduction

Neoenergia publishes this report with the purpose of transparently informing its stakeholders about the Company's Greenhouse Gas (GHG) emissions and facilitating the verification of the inventory, in accordance with the commitments made in the Environmental Policy and the Climate Action Policy.

This report contains the Greenhouse Gas (GHG) inventory for the year 2023 with the following considerations:

- Issues from the activities of the companies and assets in operation of the Neoenergia Group in Brazil.
- The GHGs considered are: CO_2, SF_6, CH_4, N_2O.
- The consolidation of GHG emissions is approached from the perspective of corporate participation.

Neoenergia's Superintendency for Innovation, Sustainability, Climate Change and Corporate Social Responsibility is responsible for the preparation of this report.

The report has been prepared in accordance with the requirements of NBR-ISO 14064-1:2018: "Greenhouse Gases. Part 1: Specification and Guidance for Organizations for Quantifying and Reporting Greenhouse Gas Emissions and Removals" and the Guidelines of the Brazilian GHG Protocol Program.

The verification of the Greenhouse Gas inventory was carried out in the limited modality, carried out by a company accredited by the Brazilian GHG Protocol Program.

Wind turbines of the Chafariz Wind Farm Complex (PB)

02.
Neoenergia today

2. Neoenergia today

Neoenergia S.A. is an energy solutions company that operates in three strategic segments of the electricity sector: Networks (distribution and transmission); Renewables (wind, hydro and solar generation) and Liberalized (sale of energy, energy products and solutions and thermal generation). It acts as a holding company with a majority interest in the capital of other companies dedicated to business activities. It is a listed private company, whose shares are traded on B3 - Brasil, Bolsa, Balcão, in Brazil, and Latibex, in Spain, and is controlled by the Spanish group Iberdrola, which owns 53.5% of the share capital. It is present in 18 Brazilian states and the Federal District.

DISTRIBUTION
& Distributors
- Concession area, 999 municipalities, 842,000 km²
- Customers: 16.3 million
- Population: 37.7 million

TRANSMISSION
- 18 transmission companies
- 10 in operations: 2,438 km of lines and 13 substations
- 8 under construction: 5026 km and 10 substations

RENEWABLE
Hydro power
- 5 plants in operation: 2,159 MW

Wind power
- 44 parks in operation: 1,554 MW

Solar power
- 2 parts in operation: 149 MWp

LIBERALIZED
Thermal power
1 plant: 533 MW
- 533 MW

Commercialization
- 5.5 TWh of energy sold

Services
- 690,000 customers
- Smart solutions
- Mass market insurance

Green Industrial Solutions
- Decarbonization projects
- Green hydrogen

Its five distributors – Neoenergia Coelba (BA), Neoenergia Pernambuco (PE), Neoenergia Cosern (RN), Neoenergia Elektro (SP/MS) and Neoenergia Brasília (DF) – operate in five states and the Federal District, serving 16.4 million consumer units. In Transmission, there are ten transmitters in operation, with 2,438 kilometers of lines, and eight more under construction.

In Generation, the installed capacity in operation is 4,395 MW. The generation platform is based on clean energy sources, with a significant share of renewables (hydro, wind and solar), with long-term contracts for the concession of generators and the sale of energy in the regulated market. There are five hydroelectric plants (2,159 MW) with direct and indirect participation, 44 wind farms (1,554 MW) and two photovoltaic farms (149 MWp). It also has a combined cycle gas-fired thermoelectric power generator, Termopernambuco (533 MW), which is part of the Liberalized businesses.

For the 2023 GHG inventory, data from two hydroelectric plants (Teles Pires and Baguari), which are part of an asset swap agreement with Eletrobras signed in September 2023, were also taken into account. With this transaction, Neoenergia reinforced its asset rotation strategy focused on portfolio control and optimization by acquiring 100% of the capital of HPP Dardanelos and Eletrobras' remaining stakes in Neoenergia Coelba, Neoenergia Cosern and Afluente T in exchange for the 51% stake it held in Teles Pires and Baguari.

The liberalized businesses also include NC Energia, which markets energy and provides personalized energy management services to end customers, and Neoenergia Serviços, which provides energy products

and solutions to customers, including distributed generation projects, electric mobility, engineering, mass products, among others. In 2023, a new company was established, Neoenergia Soluções Verdes, which offers industrial green solutions and green hydrogen products.

It ended 2023, with 15,693 own employees, 29,787 third-party contractors and 530 interns, totaling 46,010 people. In the period, net revenue totaled R$ 42.3 billion and EBITDA (earnings before interest, taxes, depreciation and amortization) was R$ 12.4 billion.

2.1 Neoenergia and nature

Neoenergia works to build a business model in harmony with nature and people, committed to sustainable development and the supply of clean and renewable energy to meet the growing demand for this service.

It is committed to continuing to lead a sustainable energy matrix. Neoenergia also sees economic and social development as closely linked to the responsible use of natural capital to ensure the integrity of ecosystems and biodiversity.

To achieve these commitments, it is working on three fronts that together reduce or eliminate its most significant impacts. It establishes and periodically updates the action plans associated with each of the following lines of work:

- Climate Action: establishes the strategy, work plans and objectives for reducing emissions and combating climate change.
- Circular Economy: achieves sustainable use of resources, promotes the extension of the useful life of its assets, and seeks to reduce the use of raw materials and the generation of waste.
- Protection of Biodiversity: integrates biodiversity conservation into decision making, minimizes negative impacts, and establishes restoration and mitigation programs.

Integrates its environmental policies into its sustainable development strategy, helping to meet climate change challenges, goals and targets, preserving the environment and biodiversity, and helping to identify and seize the opportunities of energy transition. These policies express a commitment to value creation that takes into account and respects natural capital, since it is on this capital that the company develops its activities, seeking to involve various stakeholders in this prioritization, including the communities where it is present. There are four specific policies for environmental management, which are part of the governance and sustainability system and are aligned with the objectives of the Paris Agreement and the United Nations 2030 Agenda:

- Sustainable Management Policy – Establishes that the principles of action are based on environmentally sustainable economic activities that are competitive, provide high quality service, create shared value, respect human rights and promote the use of clean and renewable electricity.
- Environmental Policy – Establishes a reference framework to integrate the protection of nature and the environment into business strategy and investments and operations. It defines the basic principles of action, which include respect for nature, biodiversity and historical-artistic heritage, sustainable use of natural capital, compliance with legislation, promotion of innovation and the application of the hierarchy of mitigation (avoid, minimize, repair and ultimately compensate) in all activities.
- Climate Action Policy – Sets the framework for the strategy and business model, reinforces commitment to the fight against climate change, provides leadership (direct and through alliances), raises awareness (impacts, challenges and benefits of implementation) and contributes to a carbon neutral and sustainable future.
- Biodiversity Policy – Committed to combating biodiversity loss and generating a net positive impact through activities. It sets out four lines of action: i) protect biodiversity and use natural capital sustainably; ii) continuously identify, quantify and assess the impacts and dependencies of our activities; iii) collaborate with stakeholders; and iv) evaluate and raise awareness of the importance of biodiversity protection and conservation.

2.2 Climate change

Neoenergia's business strategy is to accelerate the energy transition towards climate neutrality by offering a clean, reliable and intelligent business model. The company considers its climate agenda to be an opportunity to expand its portfolio and, at the same time, recognizes the need to generate climate resilience, both at the general level of the business and individually at each unit.

Neoenergia has included the fight against climate change as a priority in its corporate governance system and approved its first policy on the subject on July 19, 2018. The current Climate Action Policy sets the framework for the Group's strategy and business model in the fight against climate change, in line with the Paris Agreement and the 2030 Agenda. The company is committed to providing leadership (directly and through alliances), raising awareness (impacts, challenges and benefits of decarbonization) and contributing to a neutral and sustainable future.

The Policy also includes a commitment to implement the recommendations of the Task Force on Climate Change Related Financial Disclosures (TCFD) Working Group on identifying and reporting long-term risks and opportunities related to climate change. Since 2021, Neoenergia has considered the TCFD recommendations as one of its basic principles for corporate management and reporting of non-financial indicators.

The adoption of these recommendations is reflected in the CDP Clima 2023 questionnaire, where Neoenergia obtained an A- score, placing it among the leading companies in terms of environmental performance in what is considered the most important initiative of the financial sector in terms of climate change mitigation. The report, in turn, reflects the communication of the company's management of climate risks and opportunities in day-to-day operations.

Neoenergia is committed to reducing the emission intensity of energy production from the level of 61 grams of CO_2e and per kWh verified in 2021, to 36 grams of CO_2e and per kWh generated in 2025 and 20 grams of CO_2e and per kWh generated in 2030, with the aim of achieving carbon neutrality before 2040. Between 2017 and 2023, the intensity of emissions per kilowatt of energy generated decreased from 128 gCO_2e/kWh to 3.6 gCO_2e/kWh. The 2023 figure, as well as that of 2022 (1.3 gCO_2e/kWh), reflect atypical years. In 2022, the Termopernambuco thermoelectric plant, with a natural gas combined cycle, did not start operating for commercial purposes. In 2023, the plant operated for a few days in the last two months of the year due to ONS orders.

Other environmental commitments include: to digitize 83% of high and medium voltage networks by 2025 and 90% by 2030; to increase the electrification of its own light-duty fleet to 50%; and to achieve a 100% sustainable fleet (flex, hybrid and electric vehicles) by 2030, contributing to lower GHG emissions in the corporate inventory.

The company understands that it is necessary to internalize the scientific base as premises and baseline of our environmental goals. For example, in 2022 it will join the Climate Ambition Accelerator Program and the Climate Action Platform, the Brazil Network of the UN Global Compact to set science-based climate targets, the Science-Based Targets Initiative (SBTi), and in 2023 it will join the Global Compact's Forward Faster Initiative. In 2023, it also deepened the exercise of building the goals to continue in discussions with senior leadership, aiming to submit science-based goals to SBTi by 2025 and obtain approval for this initiative.

To meet its emissions reduction commitment, the company will continue to promote a fully integrated business model to foster renewable generation and digitalization, coupled with an investment plan for a zero-carbon future.

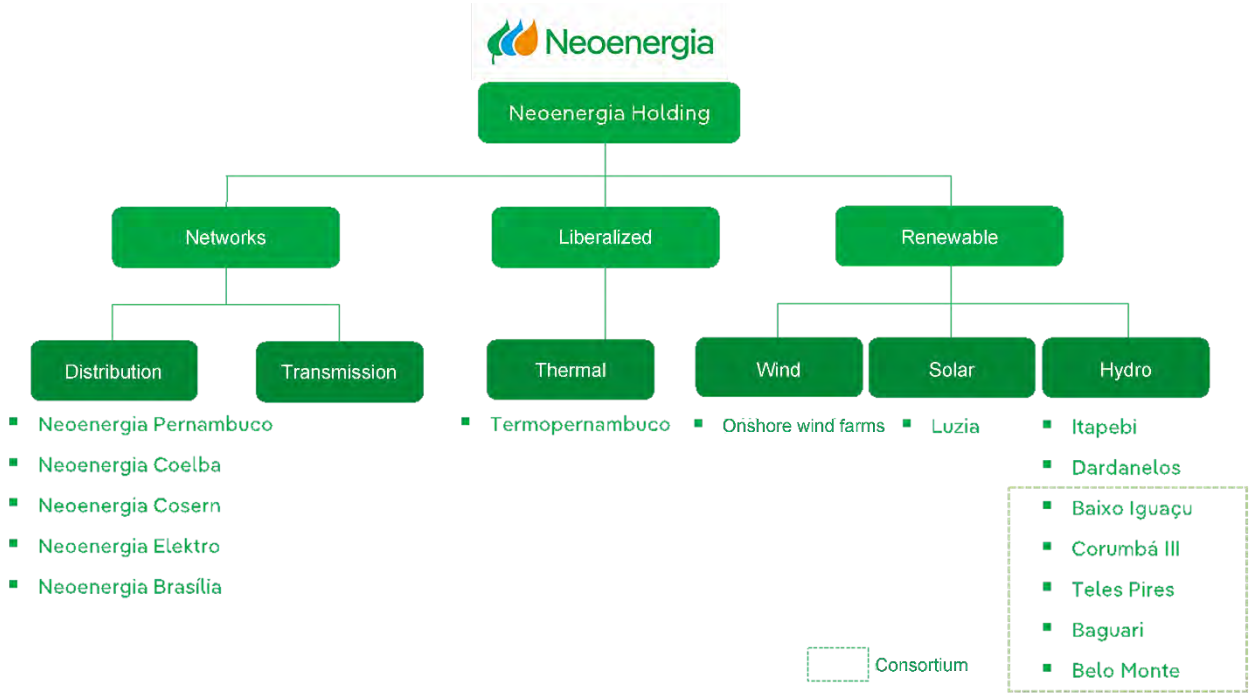
03. Organizational limits

3. Organizational limits

The consolidation of Neoenergia's GHG emissions is approached from a shareholding perspective. This item reflects changes only for Hydraulic Generation companies, in which the participation quotas in each company are considered, namely: HPP Itapebi (100%), HPP Dardanelos (100%), HPP Corumbá (70%), HPP Baixo Iguaçu (70%), HPP Teles Pires (51%), HPP Baguari (51%) and HPP Belo Monte (10%). The other companies are 100% of Neoenergia and, thus, their emissions are reported in full.

The Greenhouse Gas Inventory of the Neoenergia Group takes into account the emissions of the projects in operation, so that the activities of installation of new projects are not included, as well as the other aspects described in the item "Exclusions".

The information included in the scope of the GHG inventory corresponds to the corporate structure of the Group, which consists of the holding company and its operating subsidiaries, as shown below:



Luzia solar park (PB)

04.
Operational limits and exclusions

4. Operational limits and exclusions

In this report, the Greenhouse Gases considered are as follows:

- CO_2 (Emissions from fixed and mobile combustion).
- SF_6 (Fugitive emissions expressed as CO_2 eq).
- CH_4 (Fugitive emissions and associated fuel consumption expressed as CO_2 eq.)
- N_2O (Emissions associated with fuel consumption expressed as CO_2 eq).

Neoenergia defines the scope of its direct and indirect emissions for the operations carried out within the organization's limits, with the classification of GHG emissions according to NBR-ISO 14064:2018: as well as the guidelines of the Brazilian GHG Protocol Program.

Scope 1 - Direct GHG emissions

Direct GHG emissions from sources owned or controlled by the Company during the operational phase. These include:

- Emissions from own electricity generation facilities (fuel consumption).
- Methane (CH_4) and nitrous oxide (N_2O) emissions associated with fuel consumption.
- Fugitive emissions of hexafluoride (SF_6) in distribution networks.
- Emissions associated with displacement of employees with fleet vehicles (combustion of mobile sources).
- Emissions associated with fugitive refrigerant gas emissions (CFCs).
- Non-generation emissions associated with changes in land use: by volume of vegetation generated in pruning activities.

Scope 2- Indirect GHG Emissions

Indirect GHG emissions are those that come from the generation of external electricity consumed by the organization. These emissions are:

- Emissions associated with electricity consumption during shutdown at thermal plants; hydraulic, wind and substation renewables.
- Emissions associated with electricity consumption in Group buildings.
- Emissions associated with losses in electricity transmission and distribution. (Only third party electricity will be considered in order to avoid double counting).

Scope 3- Other indirect emissions

Refers to the remainder of indirect emissions that are a consequence of the company's activities, but that occur in sources that are not owned and that are not controlled by the company. These other emissions are:

- Emissions associated with employee air travel.
- Emissions associated with the supply chain.
- Emissions associated with the transportation of employees from their residence to the workplace.
- Emissions associated with energy purchased for sale to end customers.
- Upstream emissions (WTT) of purchased and consumed fuels.

4.1 Exclusions

Emissions that are difficult to incorporate into the company's management system (difficulty in obtaining source values to calculate emissions, impossibility of tracking data, etc.) may be excluded from the GHG report, provided that their total amount is less than 2% of the group's total emissions. This set includes:

- Fugitive emissions from maintenance of CO_2 fire extinguishers.
- Emissions associated with projects in the implementation phase.

HPP Itapebi (BA)

05. Quantification of emissions

5. Quantification of emissions

This item details the corporate emissions of the Neoenergia Group in each of the three scopes, divided by emission sources, namely

2023 EMISSIONS (tCO_2e)

	2021	2022	2023
Scope 1: Direct emissions	985,834	84,570	104,025
Scope 2: Indirect emissions	641,731	331,650	208,392
Scope 3: Other indirect emissions	2,380,006	1,372,262	1,678,035

SCOPE 1: DIRECT EMISSIONS (tCO_2e)

Emissions Category	GHG Protocol Category	2021	2022	2023
Power generation emissions (fuel consumption)	Stationary Combustion	921,137	19,337	49,484
Generator emissions (diesel)	Stationary Combustion	50	28	85
Methane (CH_4) emissions from combustion in generation and non-generation facilities	Stationary Combustion	18	22	23
Nitrous oxide (N_2O) emissions from combustion in generation and non-generation facilities	Stationary Combustion	26	53	44
Fugitive emissions of SF_6	Fugitive Emissions	6,731	3,579	2,900
Fugitive emissions of refrigerant gases	Fugitive Emissions	1,394	2,343	3,666
Mobile combustion emissions (fleet vehicles)	Mobile Combustion	31,844	28,420	29,819
Land use change (vegetation management and pruning)	Land hange and Use	24,634	30,608	18,004

SCOPE 2: INDIRECT EMISSIONS (tCO_2e)

		2021	2022	2023
Emissions associated with auxiliary power consumption during machine shutdowns	Electricity consumption	2,130	583	615
Electricity consumption in buildings	Electricity consumption	2,016	802	782
Power transmission and distribution losses	T&D Losses	637,585	330,265	206,995*

* In 2023, Neoenergia emits 206,995 T CO_2e related to technical losses and 107,802 T CO_2e and commercial losses, for a total of 314,797 T CO_2e of transmission and distribution losses for the Neoenergia Group.

SCOPE 3: OTHER INDIRECT EMISSIONS (tCO_2e)

		2021	2022	2023
Employee travel emissions	Business trips	541	1,411	2,785
Emissions associated with the supply chain.	Purchased goods and services	508,456	494,854	958,956
Emissions associated with the displacement of employees to their workplace	Travel from home to work	7,041	19,482	5,911
Emissions associated with the purchase of energy for sale to the final consumer	Fuel and energy related activities not included in Scopes 1 and 2	1,653,886	850,060	698,550
Upstream purchased fuel emissions (WTT)	Fuel and energy related activities not included in Scopes 1 and 2	210,082	6,455	11,833

To clarify the issue of reporting GHG emissions related to T&D losses (Scope 2, Category 3), the Brazilian GHG Program established a policy in March 2023 that all indirect emissions related to technical and non-technical losses in distribution must be accounted for and reported by the organizations that own or control electricity distribution operations. Thus, Neoenergia reports 206,995 technical losses tCO_2e due to transmission and distribution losses, and 107,802 tons CO_2 and commercial losses.

According to the guidelines of the Brazilian GHG Program, gases that are not covered by the Kyoto Protocol must be reported separately from gases that are covered by the Protocol. During the collection of raw data, the Neoenergia Group identified the use of the refrigerant gas R22, which represents 3,666 tCO_2 equivalent.

Furthermore, 14,074 metric tons of Scope 1 and 2,118 metric tons of Scope 3 CO_2 of biogenic origin resulting from the use of biofuels were identified.

The GHG emissions in tons of CO_2 equivalent from each of the Neoenergia Group's businesses (distribution, transmission, wind and hydro renewables, Termopernambuco and Neoenergia *holding*, are presented in Annex A.1.

06. Emission intensity

6. Emission intensity kWh of energy generated

The emission intensity per energy production is the ratio between the amount of energy produced by the Neoenergia Group and the amount of greenhouse gas emissions per energy production, expressed in grams of carbon dioxide equivalent per kilowatt hour of energy produced (gCO_2e/kWh). The following is the evolution of this indicator over time.

EMISSION INTENSITY PER ENERGY GENERATED (gCO_2e/kWh)

2017	2018	2019	2020	2021	2022	2023
128	73	70	53	61	1.3	3.6

Between 2017 and 2021, the intensity of emissions decreased from 128 gCO_2e/kWh to 61 gCO_2e/kWh. In 2022, the emission intensity was 1.3 gCO_2e/kWh, but it represents an atypical situation due to the fact that its natural gas-fired thermoelectric plant was not activated by the National System Operator (NSO) for commercial purposes. In 2023, the plant operated for a few days in the final two months of the year, and the emission intensity was 3.6 gCO_2e/kWh. The greater use of gas and its associated emissions by Termopernambuco was related to internal operation and maintenance test activities of the machines. When the plant starts operating at a more steady pace, the intensity should return to a level close to that of 2021, but on a downward trajectory to meet the Group's ESG commitment to limit emissions intensity to 20 gCO_2e/kWh by 2030.

In 2023, the installed generation capacity of the Neoenergia group will decrease from 5,100 MW in 2022 to 4,394 MW in 2023 due to an active rotation strategy, with 88% (3.862 MW) coming from renewable sources. The reduction reflects an agreement with Eletrobras whereby Neoenergia acquired 100% of the Dardanelos plant (261 MW) in exchange for its 51% interest in the Teles Pires and Baguari plants (corresponding to 999 MW). However, these two hydropower plants were included in the inventory because the agreement was signed in September. All new construction and expansion of expected installed generating capacity is based on renewable energy sources. During the year, work was completed on the Oitis wind farm complex, located between Piauí and Bahia, with an installed capacity of 566.5 MW.

Distribution Operations Center

07.
Base year

7. Base year

Neoenergia considers 2017 as the base year, which is the historical basis of the GHG inventory according to ISO 14064-1:2018.

The definition of the base year is due to the fact that in 2017, the Neoenergia Group incorporated Elektro Holding, and from then on it became one of the largest private groups in the Brazilian electricity sector in terms of number of customers. As a result of this operation, the shareholding control was assumed by the Iberdrola Group, which increased its stake in Neoenergia from 39% to 52.45%.

The base year update will be revised whenever there is any significant change in the composition of the companies that is reflected in significant changes in the Greenhouse Gas emission data.

2017 EMISSIONS (tCO_2e) – NEOENERGIA GROUP

Scope 1: Direct emissions	1,592,332
Scope 2: Indirect emissions	535,496
Scope 3: Other indirect emissions	4,422,855

SCOPE 1: DIRECT EMISSIONS (tCO_2e)

Emissions Category	GHG Protocol Category	tCO_2e
Power generation emissions (fuel consumption)	Stationary Combustion	1,568,890
Methane (CH_4) emissions from combustion in generation and non-generation facilities	Stationary Combustion	725
Nitrous Oxide (N_2O) emissions from combustion in generation and non-generation facilities	Stationary Combustion	864
Fugitive emissions of SF_6	Fugitive Emissions	2,560
Emissions in buildings (fuel consumption)	Fugitive Emissions	11
Mobile combustion emissions (fleet vehicles)	Mobile Combustion	19,282
Total emissions in tons of CO_2 equivalent		**1,592,332**

SCOPE 2: INDIRECT EMISSIONS (tCO_2e)

Emissions Category	GHG Protocol Category	tCO_2e
Emissions associated with auxiliary power consumption during machine shutdowns.	Electricity consumption	256
Electricity consumption in buildings	Electricity consumption	4,279
Power transmission and distribution losses	Technical and non-technical losses	530,962
Total emissions in tons of CO_2 equivalent.		**535,496**

SCOPE 3: OTHER INDIRECT EMISSIONS (tCO_2e)

Emissions Category	GHG Protocol Category	tCO_2e
Employee travel emissions	Business trips	3,150
Emissions associated with fuel transportation	-	-
Emissions associated with the supply chain.	Purchased goods and services	477
Emissions associated with the displacement of employees to their workplace	Travel from home to work	31,081
Emissions associated with the purchase of energy for sale to the final consumer	Fuel and energy related activities not included in Scopes 1 and 2	4,178,009
Upstream emissions from purchased fuel	Fuel and energy related activities not included in Scopes 1 and 2	210,138
Total emissions in tons of CO_2 equivalent		**4,422,855**

08. Uncertainty and Maximum Relative Importance

8. Uncertainty and Maximum Relative Importance

Uncertainty determines the dispersion of values that could reasonably be attributed to the quantity of the quantified aspect. The estimated uncertainty of emissions is a combination of the uncertainties associated with the emission factors and the corresponding activity data.

The emission factors used to carry out the Neoenergia GHG Inventory are collected from official and specific sources for each source category. These emission factors are selected to minimize uncertainty. Unless there is clear evidence to the contrary, probability density functions are assumed to be normal.

The maximum relative importance determines the acceptable level at which an individual error or aggregation of errors, omissions, and misstatements can affect the GHG report.

A maximum relative importance level of 5% has been established with respect to total emissions, except for those installations that are subject to regulatory verification.

Electric truck in the maintenance activities of the distributors

09.
Quantification methodologies

9. Quantification methodologies

9.1. Direct emissions (scope 1)

9.1.1 Emissions from electric power generation facilities (fuel consumption)

Direct stationary combustion emissions resulting from the combustion of any type of fuel used in stationary (fixed) equipment.

We measured the carbon dioxide (CO_2) emissions produced by the fixed combustion of fossil fuels in thermal generation facilities.

- Combined cycles.
- Diesel oil generation plant.

Methodology

The calculation of direct emissions is based on activity data by fuel consumption and emission factors calculated or obtained from official sources.

$$\text{Emission } CO_2 \text{ (t)} = \text{DA (GJ)} * \text{FE } \left(\frac{t\,CO_2}{GJ}\right)$$

Combined gas cycle:

Termopernambuco Plant (Termope). CO_2 emissions come from burning fuels:

Natural gas fuel

- Gas consumption: it is obtained from readings of the meters of the gas supply company (Sm^3).
- The Net Calorific Value (LCV) is provided by the gas supplier company, as well as the value of the Emission Factor (EF).
- CO_2 emissions: The emission data are provided by IBAMA's Potentially Polluting Activities System

Diesel oil as auxiliary fuel:

- Consumption: they are controlled on the specific platform "PIM - Integrated Measurement Platform" of the company Neoenergia Pernambuco.
- CO_2 emissions calculated according to the GHG Tool (fossil fuel CO_2 emissions) (does not consider biogenic CO_2 emissions).

The plant directly enters into Sygris (Group's non-financial information collection and management system)the data provided by Ibama.

9.1.2 Other emissions from electric power generation facilities (CH_4 and N_2O)

We calculated the emissions of CO_2e produced by CH_4 and N_2O from the combustion of fossil fuels in the different power generation facilities.

The calculation of CH_4 and N_2O emissions is based on activity data (fuel consumption), i.e., CH_4 and N_2O emissions are a function of fuel consumption (in volume) by the factor published in the GHG Calculation Tool.

9.1.3 Fugitive emissions of hexafluoride (SF_6)

The methodology for quantifying the amount of CO2 equivalent of SF6 leakage is to determine the leakage in tons and multiply it by the PCG published by the Intergovernmental Panel on Climate Change (IPCC) for a 100-year horizon (values taken from AR5).

9.1.4 Mobile combustion emissions

The quantification methodology used to calculate direct emissions is based on activity data (fuel consumption) by the emission factor obtained from specific official sources indicated in the calculation tool of the Brazilian GHG Protocol Program.

9.1.5 Emissions associated with land use change

To calculate emissions from land use change, the amount of material generated by the Group's vegetation management activities was taken into account. From a conservative approach and based on IPCC studies

(https://www.ipcc nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_04_Ch4_Forest_Land.pdf), it was assumed that of the volume generated by the activities, 47% of the mass is carbon. For the conversion of C to CO_2, the ratio of 44/12 was used, following the IPCC guidelines

(https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_02_Ch2_Generic.pdf).

9.2. Indirect emissions (scope 2)

9.2.1 Emissions associated with the consumption of electricity in shutdown of thermal, renewable and hydroelectric plants.

Calculation of the emissions related to the energy consumed during the shutdown of the machines in the plants, applying the emission factor of the energy matrix of the corresponding country, in the case of Brazil, communicated by the Ministry of Science and Technology.

9.2.2 Emissions associated with electricity consumption in buildings.

To calculate the CO_2e emissions, the emission factor of the Brazilian generation matrix corresponding to the energy consumed in buildings or offices, provided by the Ministry of Science and Technology, is used.

9.2.3 Emissions associated with grid losses in power distribution and transmission.

The transmission and distribution of electricity leads to losses in the network, so that, to satisfy a certain final consumption, a slightly larger generation is necessary. There are several reasons and factors that contribute to these losses, the most important of which is the Joule Effect.

In this section, we will calculate the emissions resulting from these losses in the grid, by the energy distributed or transmitted through the grid (which we call third-party energy).

The generation itself is subtracted from the energy transported or distributed to avoid double counting of emissions that we have already considered in the direct scope.

Losses are associated with the energy distributed and transmitted in our networks, and include technical and non-technical distribution losses and technical transmission losses.

To perform the emission calculation, the emission factor of Grid Brasil is applied in the reference year provided by the Ministry of Science and Technology.

9.3 Calculation of other indirect emissions (scope 3)

9.3.1 Emissions associated with the transportation of employees for work reasons.

The emissions associated with the transportation of employees on air travel, from which the distances covered by the emission factors specific to the means of transport are obtained, come from the United States Environmental Protection Agency (EPA).

9.3.2 Emissions associated with the supply chain.

The objective of Iberdrola, Neoenergia's parent company, is to have an estimate of the GHG emissions of its suppliers. For this, it has the Go Supply tool for supplier management, which allows the management of environmental data from suppliers.

The calculation is done on a global level and extrapolated to all subholdings as issues per invoiced euro.

How the calculation is done:

Suppliers are asked, through the GoSupply tool, to complete an environmental questionnaire asking if they calculate or have a greenhouse gas inventory, in relation to scope 1 and 2 emissions.

Total invoicing is requested for the year in which they report the gases.

The following calculations are made based on the collected data:

- Scope 1 and 2 emissions are associated with the total turnover of companies providing data
- The emissions / euros invoiced ratio (emissions / turnover) is calculated.
- To determine the emissions corresponding to Neoenergia, this ratio is multiplied by the turnover with the Group in the current year in relation to the total turnover of Iberdrola in the year inventoried.

9.3.3 Emissions associated with the transportation of employees from their residence to the workplace.

During the 2022 fiscal year, the campaign to raise awareness and measure greenhouse gas emissions in the transportation of employees from their homes to their workstations was carried out. In this sense, a questionnaire was sent to the employees of the Neoenergia Group to calculate their emissions via an emissions calculator tool. The tool calculates emissions in displacements, from the emission factors of the Brazilian GHG Program. The data collected from the questionnaire are placed in a database and extrapolated to all direct workers of the Neoenergia Group.

9.3.4 Emissions associated with energy purchased for sale to end customers.

From the energy supplied to the market, the energy produced by itself is subtracted; the difference will give us the energy purchased for sale to the end customer.

From the volume of energy purchased, the share of green energy acquired (zero emission) is removed. The emission factors of the Brazilian generation matrix in 2022, provided by the Ministry of Science and Technology, are applied to the final amount.

9.3.5 Upstream emissions (WTT) of fuels purchased and consumed.

They are the CO2 emissions obtained from the application of the upstream emission factor, WTT, of each fuel used. (Emission factor provided by DEFRA).

Annexes

A.1. GHG Inventory by Neoenergia Business

Emissions (tCO_2e)	NETWORKS - DISTRIBUTION					
	Neoenergia Pernambuco		Neoenergia Cosern		Neoenergia Elektro	
	2022	2023	2022	2023	2022	2023
Scope 1: Direct emissions	27,352	28,892	4,446	3,505	16,586	17,235
Scope 2: Indirect emissions	122,394	57,009	22,678	18,659	51,677	43,913
Scope 3: Other indirect emissions	457,975	5,807	259,610	160	287,694	276

Emissions (tCO_2e)	NETWORKS - DISTRIBUTION			
	Neoenergia Coelba		Neoenergia Brasília	
	2022	2023	2022	2023
Scope 1: Direct emissions	33,353	23,309	1,694	24,800
Scope 2: Indirect emissions	116,109	101,393	26,501	124,129
Scope 3: Other indirect emissions	556,249	662	184,507	819

Emissions (tCO_2e)	NETWORKS - TRANSMISSION	
	2022	2023
Scope 1: Direct emissions	56	30
Scope 2: Indirect emissions	22,022	14,997
Scope 3: Other indirect emissions	0	0

Emissions (tCO_2e)	RENEWABLES – WIND (FEB)	
	2022	2023
Scope 1: Direct emissions	498	9
Scope 2: Indirect emissions	0	77
Scope 3: Other indirect emissions	0	0

Emissions (tCO_2e)	RENEWABLES – HYDRO					
	HPP Itapebi		HPP Dardanelos		HPP Corumbá III	
	2022	2023	2022	2023	2022	2023
Scope 1: Direct emissions	70	68	0	7	3	1
Scope 2: Indirect emissions	27	23	2	11	7	9
Scope 3: Other indirect emissions	0	0	0	0	0	0

Emissions (tCO_2e)	RENEWABLES – HYDRO							
	HPP Baixo Iguaçu		HPP Teles Pires		HPP Baguari		HPP Belo Monte	
	2022	2023	2022	2023	2022	2023	2022	2023
Scope 1: Direct emissions	1	1	6	5	1	1	1	1
Scope 2: Indirect emissions	2	3	0	0	1	0	0	0
Scope 3: Other indirect emissions	0	0	0	0	0	0	0	0

Emissions (tCO_2e)	LIBERALIZED – TERMOPERNAMBUCO	
	2022	2023
Scope 1: Direct emissions	49	29,079
Scope 2: Indirect emissions	543	488
Scope 3: Other indirect emissions	1,223	6,429

Emissions (tCO_2e)	HOLDING	
	2022	2023
Scope 1: Direct emissions	455	107
Scope 2: Indirect emissions	44	0
Scope 3: Other indirect emissions	596	698,550

DECLARAÇÃO DE CONFORMIDADE

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DECLARAÇÃO DE VERIFICAÇÃO

Nº 367.087/24

Esta **Declaração de Verificação** documenta que o Organismo de Verificação (OV) citado abaixo realizou atividades de verificação de acordo com *as Especificações de Verificação do Programa Brasileiro GHG Protocol e* a norma ABNT NBR ISO 14064-3:2007.

Organização Inventariante (OI)
Nome da OI: NEOENERGIA S/A
Responsável pelo Inventário: Lucas Cavicchioli
E-mail: lucas.cavicchioli@neoenergia.com
Organismo de Verificação (OV)
Nome do OV: Associação Brasileira de Normas Técnicas – ABNT
Verificador Líder: Marina Brito
E-mail: marina.brito@abnt.org.br

As emissões de gases de efeito estufa (GEE) informadas pela Organização Inventariante em seu inventário de emissões, de 1º de janeiro até 31 de dezembro de **2023,** são verificáveis e cumprem os requisitos do Programa Brasileiro GHG Protocol, detalhados nas *Especificações do Programa Brasileiro GHG Protocol de Contabilização, Quantificação e Publicação de Inventários Corporativos de Emissões de Gases de Efeito Estufa (EPB)*.

Nível de Confiança

O Organismo de Verificação (OV) atribuiu o seguinte nível de confiança ao processo de verificação:

☒ Verificação com nível de **confiança limitado**

"Não há indícios de que o inventário de gases de efeito estufa da organização inventariante para o ano de **2023** não esteja materialmente correto, não seja uma representação justa dos dados e informações de GEE e não tenha sido preparado de acordo com as EPB."

As limitações do processo de verificação foram: Análise de dados secundários.

ABNT Associação Brasileira de Normas Técnicas
Av. Treze de Maio, 13 – 28º Andar – Centro – **Rio de Janeiro – RJ** – CEP 20031-901
Rua Conselheiro Nebias, 1.131 – Campos Elíseos – **São Paulo – SP** – CEP 01203-002

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Descrição do Escopo da Verificação

O inventário do ano de **2023** da Organização Inventariante foi verificado dentro do seguinte escopo:

Limites Organizacionais	Limites Operacionais
☒ Controle Operacional ☒ Participação Societária	☒ Escopo 1 ☒ Escopo 2 – Abordagem baseada em localização ☐ Escopo 2 – Abordagem baseada em escolha de compra ☒ Escopo 3

☒ Foram excluídas da verificação: Emissões fugitivas por manutenção dos extintores de incêndio de CO2 e emissões associadas aos empreendimentos em fase de implantação.

Instalações visitadas

Lista de todos os locais visitados durante a verificação e a data de cada visita.

Nome do Local	Relação do Local com a holding	Endereço	Data da Visita
Usina Termopernambuco	Unidade	Av. Portuaria, S/N - Porto Suape - PE	07/05/2024

Total de emissões verificadas em toda a organização, segundo a abordagem de Controle Operacional

	Emissão de GEE em toneladas de CO_2 equivalente (tCO_2e)			
GEE	**Escopo 1**	**Escopo 2** Abordagem baseada na localização	**Escopo 2** Abordagem baseada em escolha de compra	**Escopo 3**
CO_2	-	-	-	-
CH_4	-	-	-	-
N_2O	-	-	-	-
HFCs	-	-	-	-
PFCs	-	-	-	-
SF_6	-	-	-	-
NF_3	-	-	-	-
TOTAL	104.016,000	208.380 ,000	-	1.678.035,000
CO_2 Biogênico	14.074,000	-	-	2.118,000

Total de remoções verificadas em toda a organização, segundo a abordagem de Controle Operacional

	Remoção de CO_2 biogênico (tCO_2e)			
GEE	**Escopo 1**	**Escopo 2** Abordagem baseada na localização	**Escopo 2** Abordagem baseada em escolha de compra	**Escopo 3**
CO_2 Biogênico	-	-	-	-

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Total de emissões verificadas em toda a organização, segundo a abordagem de Participação Societária

	Emissão de GEE em toneladas de CO_2 equivalente (tCO_2e)			
GEE	**Escopo 1**	**Escopo 2** Abordagem baseada na localização	**Escopo 2** Abordagem baseada em escolha de compra	**Escopo 3**
CO_2	-	-	-	-
CH_4	-	-	-	-
N_2O	-	-	-	-
HFCs	-	-	-	-
PFCs	-	-	-	-
SF_6	-	-	-	-
NF_3	-	-	-	-
TOTAL	104.025,000	208.392,000	-	1.678.035,000
CO_2 Biogênico	14.074,000	-	-	2.118,000

Total de remoções verificadas em toda a organização, segundo a abordagem de Participação Societária

	Remoção de CO_2 biogênico (tCO_2e)			
GEE	**Escopo 1**	**Escopo 2** Abordagem baseada na localização	**Escopo 2** Abordagem baseada em escolha de compra	**Escopo 3**
CO_2 Biogênico	-	-	-	-

Comentários Adicionais

A organização utiliza um sistema de gestão de dados de GEE, o Sygris, que não informa os dados de emissões para os seis gases/família de gases de GEE separadamente em toneladas métricas de CO2 equivalente.
Unidades que individualmente emitiram mais de 10.000 tCO2e no Escopo 1:
Usina Tubarão – 20.495 tCO2e emitidos no Escopo 1
Usina Termopernambuco – 29.079 tCO2e emitidos no Escopo 1

Conflitos de Interesse (CDI)

Eu, Marina Brito, certifico que nenhum conflito de interesse existe entre Organização Inventariante e o Organismo de Verificação, ou qualquer dos indivíduos membros da equipe de verificação envolvidos na verificação do inventário, conforme definido no capítulo *3.2.1 das Especificações de Verificação do Programa Brasileiro GHG Protocol*.

Marina Brito — (Verificador Líder)

14/06/2024 — Data

☒ Reconhecimento de assinatura digital[1]

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DECLARAÇÃO DE CONFORMIDADE
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Conclusão do Verificador sobre o Inventário de Emissões de GEE

Como responsáveis pelas atividades de verificação do inventário de GEE da Organização Inventariante, atestamos que as informações contidas neste documento são verdadeiras.

Marina Brito	14/06/2024
(Verificador Líder)	Data

☒ Reconhecimento de assinatura digital[1]

Mariana Fellows Garcia	14/06/2024
(Revisor Independente)	Data

☒ Reconhecimento de assinatura digital[1]

Autorização

Eu, Lucas Cavicchioli, aceito os resultados desta declaração de verificação.

	14/06/2024
Lucas Cavicchioli	Data

☒ Reconhecimento de assinatura digital[1]

Rio de Janeiro, 14 de junho de 2024.

Guy Ladvocat
Gerente de Certificação de Sistemas

[1]Ao marcar a caixa "Reconhecimento de assinatura digital", concordo que esta declaração de verificação seja considerada "feita por escrito" e "assinada" para todos os fins e que quaisquer registros eletrônicos serão considerados "feitos por escrito". Renuncio expressamente a todo e qualquer direito de negar a obrigatoriedade jurídica, a validade ou a executoriedade desta declaração de verificação e de quaisquer documentos a ela relacionados com base em que tenham sido elaborados e concluídos eletronicamente.
Esta declaração é suportada por contrato de atendimento à norma e procedimentos da ABNT, sendo válida somente assinada pelo Gerente de Certificação de Sistemas. Sua validade pode ser confirmada no seguinte endereço eletrônico: www.abnt.org.br. Para informações adicionais: sustentabilidade@abnt.org.br. CNPJ: 33.402.892/0001-06

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