

# Climate and development

THE **BNDES'S** CONTRIBUTION  
TO A JUST TRANSITION



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# EXECUTIVE SUMMARY

*The search for a carbon-neutral future depends on sustainable development, which jointly considers economic, environmental and social aspects in order to achieve a just transition. This objective is part of the BNDES's strategy and institutional purpose of "transforming the lives of generations, promoting sustainable development".*

The socioenvironmental and climate agenda has been an integral part of the BNDES's operations for some decades. In addition to being one of the main renewable energy financiers in the world and one of the main supporters of the forest agenda in the country, the Bank has 41% of its portfolio (data from September 2022) dedicated to the green economy. It is also a forerunner in innovative climate action, such as the management of the Climate Fund, as well as in green fundraising.

More recently, the BNDES has intensified the incorporation of environmental, social and climate aspects in its governance and strategy. In addition to adjustments in its purpose, mission and vision, in order to better reflect the relevance given to sustainable development in the institutional strategy, the organizational and committee structures also underwent adjustments. Sustainability policies have been revised to reinforce the commitment to the United Nations's Sustainable Development Goals (SDG) and the Brazilian nationally determined contribution (NDC), and the transparency actions and performance initiatives strengthened.

Internal regulations and procedures aimed at the management of socioenvironmental and climate risk were structured and internal knowledge on the topics of sustainability and climate change strengthened. In parallel, the product portfolio was improved in order to enhance the stimulus to sustainable development and, more specifically, to the socioenvironmental and climate performance of its partners.

## The BNDES's contributions to climate and development

The BNDES's contributions to climate and development are aligned with the national climate strategy. The Bank works in mitigation, already seeing results in the most diverse sectors, such as energy, logistics and urban mobility, land use, land-use change and forestry (LULUCF), agriculture, industry and sanitation, as well as stimulating credit for adaptation.

### Climate commitments

Now, in alignment with the Brazilian NDC and coherently with all actions that are already in progress, the **BNDES is committed to be carbon neutral by 2050, considering scopes 1, 2 and 3 of its emissions inventory**, in addition to others that focus on actions that will occur in the near future. Below are the commitments assumed by our institution:

- i) carbon neutrality by 2050;<sup>1</sup>
- ii) neutralization of emissions in scopes 1, 2 and those related to business travel and employee commuting (home-work) starting in 2025;
- iii) completion of the inventory of the financed emissions of scope 3 for the other BNDES's portfolios in 2023;
- iv) definition, in 2023, of neutrality targets for the direct, indirect and variable income portfolios;
- v) definition, in 2023, of engagement goals to accelerate the transition of its clients to carbon neutrality; and
- vi) incorporation, in 2023, of carbon accounting in the approval processes in support of new projects.

Recognizing the importance of knowing its greenhouse gas (GHG) emissions for the construction of a decarbonization strategy, the BNDES has been making efforts to measure its emissions, including both those from its own activities and those associated with its portfolios. In addition, the BNDES has been developing some initiatives to deepen the incorporation of climate risk in its operations.

<sup>1</sup> Net zero applies when an organization sets a goal to achieve emission reductions across its entire value chain (scopes 1, 2, and 3) over time, and reduces or offsets its residual emissions, whether direct or indirect.

## Climate strategy

To achieve these climate transition commitments, transversal strategies and strategies specific to key sectors were also outlined.

**Transversal strategies include** seeking the engagement of companies and financial institutions that onlend the BNDES's resources, both in relation to the preparation of GHG emission inventories, as well as the definition of transition goals and strategies for emission neutrality and incorporation of good practices related to climate. They also provide for the supply of financial products that promote investments in transition and climate resilience and the advancement in the incorporation of emission inventories and climate aspects in the structuring of infrastructure projects and privatization. The Bank also intends to work with other partners to promote adaptation practices to the effects of climate change and contribute to the structuring of the Brazilian carbon market, deforestation prevention projects and nature-based solutions.

**Sectoral strategies complement transversal approaches.**

Actions focused on **the energy sector** include: supporting the decarbonization of the Brazilian energy grid through energy efficiency projects; the production and use of biogas and biomethane; the generation by renewable sources, including the structuring of green hydrogen projects for domestic and international consumption; in addition to the promotion of carbon capture and storage technologies (CCUS) in biogas/ biomethane activities.

The theme of electrification and use of renewable sources in rail logistics and urban mobility will be one of the central topics of the BNDES's activities **in the logistics and urban mobility sector**, as well as the incentive to high capacity and low emission urban transport, including cycling infrastructure, and support for low-carbon logistics.

Strategies for **land use, land-use change and forestry activities** include investments to prevent, combat and monitor illegal deforestation, acting in the Legal Amazon in an integrated and systemic way to generate sustainable development and recovery activities in degraded areas. In addition, solutions for the sustainable use of forests and biodiversity, in particular the bioeconomy, will be encouraged.

**With a focus on agriculture and livestock**, the BNDES intends to promote sustainability in the value chain of the sector, financing the use of bio-inputs and biofertilizers, and boost the reduction of deforestation through the integration of farming-livestock-forest. In the direct operations of the sector, it will invest in the production and use of biofuels and in the reduction of carbon and methane emissions associated with bovine livestock, in addition to supporting the increase of productivity through the adoption of new technologies, reducing the pressure for the opening of new productive areas.

Among the different **activities of the industry**, it will act to promote decarbonization from energy efficiency and use of renewable energies, replacement of raw materials by alternatives of lower intensity of GHG emissions, as well as carbon capture and circular economy initiatives. The Bank will also act to foster the mining of essential inputs for green economy technologies, such as copper, lithium, nickel and others.

**In the sanitation sector**, the BNDES will promote projects that expand access to services and contribute

to reduce social and regional inequalities, invest in actions to capture and use methane, use biogas, and initiatives for zero generation of waste and composting on a macro scale.

**In the theme of adaptation**, the BNDES will act in line with the National Adaptation Plan (PNA), directing capital to priority adaptation sectors and technologies, including actions with municipalities and states in infrastructure and resilient urban development projects. It also intends to expand its financing lines for adaptation and include mitigants in infrastructure projects, minimizing the effects of physical impacts of climate change such as floods and landslides.

The BNDES recognizes that there is still a lot of work ahead for the country to promote mitigation at the necessary levels and adapt to the adverse effects of climate change. The institution believes that climate urgency must permeate all its actions and be incorporated into the national development approach so that concrete steps can be taken to promote a truly just transition for the Brazilian economy.

**THE INSTITUTION BELIEVES THAT CLIMATE URGENCY MUST PERMEATE ALL ITS ACTIONS AND BE INCORPORATED INTO THE NATIONAL DEVELOPMENT APPROACH SO THAT CONCRETE STEPS CAN BE TAKEN TO PROMOTE A TRULY JUST TRANSITION FOR THE BRAZILIAN ECONOMY.**



# INTRODUCTION

*The needs to find ways for a low-carbon economy has been bringing together different public and private actors for more sustainable and fairer development. In 2015 the Sustainable Development Goals (SDG) were agreed within the United Nations (UN) and a new global agenda has been established with the aim of ending poverty, protecting the environment and climate, and ensuring that people everywhere can enjoy peace and prosperity.*

Conferences of the Parties to the United Nations Framework Convention on Climate Change (COP) have enabled significant advances in models of global cooperation to face climate change and its effects. The Paris Agreement, signed in 2015 at COP 21, was instrumental in establishing a real commitment by countries to reducing greenhouse gas (GHG) emissions by defining nationally determined contributions (NDC), that is, a reduction target for each nation. COP 26, in November 2021, reaffirmed the

consensus established in Paris in 2015 on the need to keep the planet's temperature rise well below 2°C, when compared to pre-industrial levels, and was crucial for defining efforts to limit the target for this increase to 1.5°C. At COP 27 – which is being called the “COP of implementation”, due to the expectation of actually making progress in achieving what was agreed in 2021 – it is expected that progress will be made on topics such as the creation of a financing mechanism from rich to poor countries to compensate for losses and damages resulting from climate change and the definition of a global adaptation target.

## Brazilian goals

Brazil has set a long-term goal of achieving climate neutrality by 2050; a commitment to reduce greenhouse gas emissions by 50% by 2030 (compared to 2005); and a goal of eliminating illegal deforestation by 2028.<sup>2</sup> It also defined sectoral actions in the Guidelines for a

“Climate neutrality” is achieved when CO<sub>2</sub> emissions in the atmosphere are equal to the amount of CO<sub>2</sub> removed in the same period, that is, when the net CO<sub>2</sub> emissions resulting from human action are equal to zero (CEBDS, 2021).<sup>3</sup>

National Strategy for Climate Neutrality.<sup>4</sup> For a continental country such as Brazil, with deep issues of inequality and various social needs, these international commitments point to the need to structure an integrated action in favor of a new development model.

BRAZILIAN NDCS REVISED IN 2021	COMPARISON DATE	DATE OF ARRIVAL
Achieving climate neutrality	N/A	2050
Reduce greenhouse gas emissions by 50%	2005	2030
Eliminating illegal deforestation	N/A	2028

<sup>2</sup> FEDERATIVE REPUBLIC OF BRAZIL. *Paris Agreement: Nationally Determined Contribution (NDC)*. Brasília, DF: Federative Republic of Brazil, 2022. Available at: <https://unfccc.int/sites/default/files/NDC/2022-06/Updated%20-%20First%20NDC%20-%20%20FINAL%20-%20PDF.pdf>. Accessed on: October 28, 2022.

<sup>3</sup> CEBDS – CONSELHO EMPRESARIAL BRASILEIRO PARA O DESENVOLVIMENTO SUSTENTÁVEL. *Como as empresas vêm contribuindo para a neutralidade climática*. 3. ed. Rio de Janeiro: CEBDS, 2021. Available at: [https://cebds.org/wp-content/uploads/2021/11/CEBDS\\_Neutralidade\\_Climatica\\_novembro2021\\_PT-1.pdf](https://cebds.org/wp-content/uploads/2021/11/CEBDS_Neutralidade_Climatica_novembro2021_PT-1.pdf). Accessed on: October 28, 2022.

<sup>4</sup> BRASIL. Ministério do Meio Ambiente. *Diretrizes para uma Estratégia Nacional para Neutralidade Climática*. Brasília, DF: Ministério do Meio Ambiente, 2022. Available at: [https://www.gov.br/mma/pt-br/assuntos/clima/neutralidade/neutralidade-climatica\\_vdefeso.pdf](https://www.gov.br/mma/pt-br/assuntos/clima/neutralidade/neutralidade-climatica_vdefeso.pdf). Accessed on: October 28, 2022.

Reinforcing our commitment to the economic, environmental and social agendas that make up sustainable development, we have adjusted our institutional identity in recent years, having as purpose “Transforming the lives of generations, promoting sustainable development”, as vision “To be the Brazilian sustainable development bank” and as mission “Propose and enable solutions that transform the productive sector and promote sustainable development”. We also incorporated the SDGs into our strategic planning and adhered to the Global Compact – a UN initiative that proposes aligning companies’ operations and strategies to ten universal principles in the areas of human rights, labor, environment and corruption –, making a commitment to its ten principles and contributing to the implementation of the agenda in Brazil.

As a development bank that has been working on important national socioenvironmental agendas for decades, we have the tools and expertise to accelerate the design and implementation of this new integrated development model for the country. Our entire portfolio is being made available for this purpose, including credit products, participation in companies, new project structuring services, provision of guarantees and granting

of non-refundable resources. Combining efforts with the private sector, we have also been working on raising capital for investments with high socioenvironmental impact, innovating with blended finance and matchfunding instruments. Due to the long performance in the socioenvironmental agenda, today we have a differentiated position in the articulation of the public and the private, allowing us to contribute to the preparation and execution of relevant public policies.

In the current global scenario of post-pandemic recovery, our countercyclical action is fundamental not only to reduce the social and economic impacts resulting from this situation, but also to stimulate the innovation and investments necessary for a just transition to a low-carbon economy and a green recovery.

Our strong delivery track record favors the transition to a carbon-neutral and more resilient economy. We are among the most sustainable companies in the world – ranked among the top 2% in Vigeo Eris’ assessment in 2021 and 2022 – and first in the ranking of the most sustainable banks in Brazil, as indicated by the Consumer Protection Institute (IDEC) in the 2020/2021 cycle. We are one of the world’s leading renewable energy financiers,

being the first Brazilian financial institution to issue green bonds in the national and international markets, raising more than US\$ 1 billion in funds to support sustainable development projects in the country. We are also one of the main supporters of the forest agenda in the country and manager of national funds dedicated to the theme, such as the Climate Fund and the Amazon Fund. In September 2022, 41% of our direct credit portfolio was focused on the green economy.<sup>5</sup>

Our role as an inducer, however, goes beyond offering solutions, through the enhancement of our institutional model and our policies, processes and workflows, aiming at sustainable development.

## IN THE CLIMATE AGENDA, WE HAVE MADE A COMMITMENT THAT OUR INSTITUTION WILL BE CARBON NEUTRAL BY 2050, REINFORCING OUR SUPPORT FOR BRAZIL IN THE JUST TRANSITION TO THE COUNTRY’S NEUTRALITY.

<sup>5</sup> It includes renewable energy, agricultural improvements, forests, water and sewage management, public passenger transport, and solid waste management, among other support related to investments in reducing the use of natural resources and materials.



Scopes 1, 2 and 3 are parameters used by the GHG Protocol.<sup>6</sup>

Scope 1 emissions are due to sources that belong to or are controlled by the company, that is, emissions resulting from the company's direct operation.

Scope 2 emissions are indirect, arising from electricity purchased for use in the direct operation of the company.

Scope 3 emissions are all other indirect emissions resulting from the company's performance.

Thus, in the climate agenda, we have made a commitment that our institution will be carbon neutral by 2050, considering scopes 1, 2 and 3, reinforcing our support for Brazil in the just transition to neutrality in the country. This means eliminating net direct or indirect GHG emissions.

This document presents our progress on the climate agenda and the important commitments we are

<sup>6</sup> GREENHOUSE GAS PROTOCOL. *A Corporate Accounting and Reporting Standard*. Washington, DC: World Resources Institute; Geneva: World Business Council for Sustainable Development, [2004]. Available at: <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>. Accessed on: October 28, 2022.

making. However, we must recognize that there is still a lot of work ahead for the country to effectively mitigate and adapt to the adverse effects of climate change. Sustainable development is part of our statements of purpose, mission and vision, reinforcing that climate urgency must permeate all of our actions and be incorporated into our national development approach. Only in this way will we be able to take concrete steps to promote a truly fair transition for the Brazilian economy.

Below are detailed our contributions for several key sectors of the Brazilian economy to mitigate their climate impact and for the country to adapt to changes that cannot be avoided, reducing environmental and social impacts.

The commitments assumed by the organization, the assumptions considered and the sectoral strategies to enable the achievement of the goals are also described.

Finally, we describe our portfolio of solutions, which supports the implementation of the strategy.

## CLIMATE FUND

The Climate Fund Program is intended to apply the portion of reimbursable resources of the National Climate Change Fund, or Climate Fund, whose resources originate from: appropriations consigned in the annual budget law of the Federal Government; donations made by national and international entities, public or private; resources from interest and amortization of financing; and other modalities determined in Law 12,114/2009.

The Climate Fund is one of the instruments of the National Policy on Climate Change and constitutes a fund of an accounting nature, linked to the Ministry of the Environment, with the purpose of guaranteeing resources to support projects or studies and financing projects that aim to mitigate climate change.

The BNDES supports, through resources from the fund, the implementation of projects, the acquisition of machinery and equipment and technological development related to the reduction of greenhouse gas emissions and adaptation to climate change and its effects.

The years 2021 and 2022 were, respectively, the second and third biggest Climate Fund contracting values through the BNDES's operations since its creation, with R\$ 215 million in 2021 and R\$ 195 million in 2022 until September.



# THE BNDES'S CONTRIBUTIONS TO ALIGN CLIMATE AND DEVELOPMENT

*Our main commitment on the climate agenda is to support Brazil in the just transition to a carbon-neutral economy.*

*Next, we discuss the results that are being achieved by the country in the national strategy for climate neutrality and the contributions of the BNDES to it.*

We support projects that prevent the emission of GHGs in various sectors. During COP 26, we launched the NDC Panel, a complement to the SDG Panel,<sup>7</sup> focusing on climate, which shows our disbursements to the energy, forestry, urban mobility, biofuels and solid waste sectors that contribute to Brazil's GHG emission reduction goals.<sup>8</sup>

Only in the energy, urban mobility, forestry, biofuels, street lighting, solid waste and transport sectors, for which we already have a calculation methodology,<sup>9</sup> we predict that our projects approved since 2015 are contributing to avoid the emission of 86.6 million tons of CO<sub>2</sub> throughout their useful lives, which is equivalent to 32 years of emissions from the current fleet of cars in the city of São Paulo (SP).<sup>10</sup>

SECTORS	TONS OF CO2 IN EMISSIONS AVOIDED BY PROJECTS SUPPORTED BY THE BNDES*	WHICH ARE EQUIVALENT TO:
Renewable energy	76.2 million	Produce the energy consumed in the state of Rio de Janeiro for 27 years
Urban mobility	7.9 million	Three years without cars in the city of São Paulo (SP)
Native forests	499 thousand	Plant 3,133 soccer fields
Biofuels	624 thousand	85 days without cars in the city of São Paulo (SP)
Street Lighting	279 thousand	Produce the energy consumed in the state of Rio de Janeiro for 36 days
Solid waste	725 thousand	Plant 5,328 soccer fields
Transport (railways and waterways)	408 thousand	55 days without cars in the city of São Paulo (SP)
<b>Total</b>	<b>86.6 million</b>	<b>32 years without cars in the city of São Paulo (SP)</b>

\* Total emissions that will be prevented by projects in these sectors throughout their useful lives. Financing projects approved by the BNDES between January 2015 and the second quarter of 2022 are considered, as well as projects structured by the BNDES whose auction took place in the same period.

<sup>7</sup> BNDES – BANCO NACIONAL DE DESENVOLVIMENTO ECONÔMICO E SOCIAL. Estatísticas operacionais do Sistema BNDES. *BNDES*, August 11, 2022. Available at: <https://www.bndes.gov.br/wps/portal/site/home/transparencia/estatisticas-desempenho>. Accessed on: October 28, 2022.

<sup>8</sup> On the BNDES website, the NDC Panel and the calculation methodology used are found: BNDES – BANCO NACIONAL DE DESENVOLVIMENTO ECONÔMICO E SOCIAL. Painel NDC – contribuição para as metas de redução de emissões do Brasil. *BNDES*, Rio de Janeiro, [200-]. Available at: <https://www.bndes.gov.br/wps/portal/site/home/desenvolvimento-sustentavel/resultados/emissoes-evitadas/emissoes-evitadas/>. Accessed on: October 28, 2022.

<sup>9</sup> The calculation of avoided emissions included projects receiving support from the BNDES in the direct modality for credit operations and privatization projects structured by the BNDES and was carried out, with the exception of the biofuel and transport sectors, using the Climate Fund tool: BNDES – BANCO NACIONAL DE DESENVOLVIMENTO ECONÔMICO E SOCIAL. Programa Fundo Clima – ferramenta de cálculo de redução de GEEs. *BNDES*, Rio de Janeiro, [200-]. Available at: <https://www.bndes.gov.br/wps/portal/site/home/financiamento/produto/fundo-clima/ferramenta-calculo-reducao>. Accessed on: October 28, 2022.

<sup>10</sup> Calculation performed considering tCO<sub>2</sub>e issued by the fleet of the city of São Paulo (SP) on a typical day of 2015.

## NEW SOLUTIONS TO SOCIAL ISSUES

The BNDES structures solutions to social and income generation issues that directly affect the country's climate agenda. This is the case, for example, of the **Amazon Guarantee**, a program being structured that aims to grant guarantee to financing in forest bioeconomy activities in the North region and that will also contribute to reduce the pressure for deforestation in the region. Aimed at clients such as family farmers, rural family entrepreneurs, aquaculturists and fishermen, traditional communities, agrarian reform settlers, indigenous peoples and entities constituted as associations or cooperatives, the program, still in the pre-operational phase, may increase access to credit for those who live on sustainable forest activities. The program also provides non-refundable resources from the BNDES Socioenvironmental Fund to pay for Technical Assistance and Rural Extension ("ATER") services to be provided to the final borrowers of credits related to the program.

The launch in 2022 of the **FEP Bioeconomy** – an initiative that aims to support state networks and federal institutes present in the Legal Amazon to implement technical and professional training in the new high school, focusing on the value chains of the bioeconomy – also deserves to be highlighted. The initiative takes place within the scope of technical cooperation concluded with the Ministry of Education and will have an executing partner to prepare a study containing diagnoses of value chains and training gaps for the offer of courses, as well as plans for the implementation of priority technical courses in the states of the Legal Amazon. The intention is

to strengthen the value chains of the bioeconomy in the Amazon, with better use of local economic potential and having managers, teachers and students as agents of transformation. The project has R\$ 7.4 million in non-reimbursable resources from the BNDES and estimates to reach 50,000 students per year and promote the improvement of professional qualification for the bioeconomy in the Amazon, contributing to the increase in quality of life, the generation of employment and income, as well as the conservation and sustainable use of the ecosystem.

Education was also a pillar of the matchfunding **New Paths**, launched in 2022 and which will have resources from the BNDES and partners to enable professional qualification projects for people in conditions of social vulnerability or low income, increasing their employability in the sectors of industry 4.0, technology and green qualification, the latter being a topic of great relevance for a country that can position itself as a green power in the world.

Another example is the **Roots Pilot Project**, an initiative of the BNDES in coordination with the National Institute of Colonization and Agrarian Reform (Incra) and with a partnership of potential donor institutions, which aims to support integrated actions of land regularization, environmental recovery, social infrastructure and bioeconomy in settlement projects of agrarian reform located in municipalities in the states of the Legal Amazon. The proposal represents a new modality for the use of non-reimbursable resources, via the BNDES Socioenvironmental Fund, which reinforces the role of the BNDES advocacy in the implementation of public policies, through the articulation and strategic alignment of

public and private partners. The first stage of the pilot in the state of Amapá is underway and the expected impact is to benefit 1,600 families in four settlement projects that total 120,000 hectares of area. The general objective of the initiative is to provide greater economic integration to 15,000 families from remote areas of the Legal Amazon, forest restoration and preservation of one million hectares of the Amazon Forest.

Caring for the populations who live in the forest so that they are defenders of their preservation requires not only training and knowledge actions to generate income in a sustainable way, but also the provision of basic health services for their survival and well-being. Recognizing a large care gap in the North (and also Northeast) region, with many municipalities counting on a critical rate of less than one doctor for every 1,000 inhabitants, the BNDES launched in 2022 the **matchfunding Together for Health** whose objective is to expand the access of the Brazilian population to health and improve the provision of the Unified Health System (SUS) services in the North and Northeast regions of the country – mainly through the strengthening of primary care and the use of telemedicine to bring care to the most remote regions of the territory. The goal is to raise up to R\$ 100 million in non-refundable resources from partners, and the BNDES is responsible for contributing the same amount through the Socioenvironmental Fund, thus doubling the resources that will be directed to public and philanthropic health units that serve SUS, more precisely in investments aimed at works, equipment acquisition, health campaigns and computerization projects and management improvements.

With a leading role in the financing of clean energy – we are the third largest global funder of renewable energy, according to BloombergNEF – we have an important role to play in the national energy transition. Since 2021, we have not financed coal-fired thermal plants and have stopped financing thermal plants exclusively from oil derived from petroleum and coal mining to supply thermal plants.

The BNDES's climate agenda is seen in an integrated way to the social agenda. It is important to remember that many of the climate and environmental solutions face social issues such as land regularization in territories that currently suffer deforestation or the need to generate income from sustainable forest activities. Work needs to be done to ensure that the transition to a carbon-neutral economy benefits all, reducing inequalities and preventing the effects of climate adversity on the most vulnerable populations. In this context, the BNDES has been supporting since 2013, for example, climate adaptation projects in the Northeast region of the country, such as the installation of cisterns that have already benefited more than 125,000 people.<sup>11</sup>

<sup>11</sup> The BNDES supported the implementation of 32,139 cisterns, between 2013 and 2019, and was considered a conservative average that each benefited four people.

Below are detailed some of the contributions of the BNDES to face the climate challenge in key themes.

## The BNDES's contributions to sectoral mitigation initiatives

### Performance of the BNDES in energy

Brazil has one of the cleanest energy grids in the world, with a 46.1%<sup>12</sup> share of renewable energy, while the world average is 14.1%.<sup>13</sup> When only the electric grid is analyzed, this percentage is even more impactful, reaching 83.0%<sup>14</sup> of national production, while in the world it corresponds to only 26.1%.<sup>15</sup> The national climate strategy predicts that the share of renewable

<sup>12</sup> EPE – EMPRESA DE PESQUISA ENERGÉTICA. Matriz Energética Nacional 2020 – ano base 2019. EPE, Brasília, DF, 2020 Available at: <https://www.epe.gov.br/pt/publicacoes-dados-abertos/publicacoes/balanco-energetico-nacional-2020>. Accessed on: October 28, 2022.

<sup>13</sup> IEA – International Energy Agency. *World Energy Balances 2019*. Paris: OECD Publishing, 2019. Available at: [https://www.oecd-ilibrary.org/energy/worldenergy-balances-2019\\_3a876031-en](https://www.oecd-ilibrary.org/energy/worldenergy-balances-2019_3a876031-en). Accessed on: October 28, 2022.

<sup>14</sup> EPE – EMPRESA DE PESQUISA ENERGÉTICA. Matriz Energética Nacional 2020 – ano base 2019. EPE, Brasília, DF, 2020 Available at: <https://www.epe.gov.br/pt/publicacoes-dados-abertos/publicacoes/balanco-energetico-nacional-2020>. Accessed on: October 28, 2022.

<sup>15</sup> IEA – International Energy Agency. *World Energy Balances 2019*. Paris: OECD Publishing, 2019. Available at: [https://www.oecd-ilibrary.org/energy/worldenergy-balances-2019\\_3a876031-en](https://www.oecd-ilibrary.org/energy/worldenergy-balances-2019_3a876031-en). Accessed on: October 28, 2022.

energy in the Brazilian matrix may increase even more.<sup>16</sup> Renewable energy and energy efficiency are essential to mitigate climate change as energy consumption (including electricity, heating and transportation) accounts for about 75% of global GHG emissions and approximately 23%<sup>17</sup> of Brazilian emissions.

The BNDES has historically supported the development of clean energies in the country. In the five-year period 2017-2021 alone, the Bank approved projects that add 9.4 GW of renewable sources to the Brazilian energy grid, representing an increase of almost 29% in installed renewable capacity.<sup>18</sup> The energy generated would be enough to supply more than 17 million households in a year, equivalent to the consumption of the state of Paraná in 2021.

<sup>16</sup> BRASIL. Ministério do Meio Ambiente. *Diretrizes para uma Estratégia Nacional para Neutralidade Climática*. Brasília, DF: Ministério do Meio Ambiente, 2022. Available at: [https://www.gov.br/mma/pt-br/assuntos/clima/zoneiodesertificacao/clima/diretrizesparaumaestrategianacionalparaneutralidadedeclimatica\\_vdefeso.pdf](https://www.gov.br/mma/pt-br/assuntos/clima/zoneiodesertificacao/clima/diretrizesparaumaestrategianacionalparaneutralidadedeclimatica_vdefeso.pdf). Accessed on: October 28, 2022.

<sup>17</sup> BRASIL. Ministério da Ciência, Tecnologia e Inovações. *Estimativas anuais de emissões de gases de efeito estufa no Brasil*. 6. ed. Brasília, DF: Ministério da Ciência, Tecnologia e Inovações, 2022. Available at: <https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/sirene/publicacoes/estimativas-anuais-de-emissoes-gee/arquivos/6a-ed-estimativas-anuais.pdf>. Accessed on: October 28, 2022.

<sup>18</sup> Renewables without hydroelectric plants.

Of the 9.4 GW supported by the BNDES, there were 6.9 GW in wind and 1.9 GW in centralized solar, which represented respectively 28% and 22.5% of the expected increase in each source for the country in the period 2020-2029 in the Ten-Year Energy Expansion Plan (PDE), prepared by the Ministry of Mines and Energy and the Energy Research Company.

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**In the electricity sector, the projects approved between 2000 and 2021 for renewable sources, such as wind farms, solar plants, small hydroelectric plants and biomass generation,<sup>19</sup> represent 22 GW, which would be equivalent to the energy required to serve 43.2 million families in this period. This increase in capacity represents 60% of the expansion of the renewable electricity sector in the country.**

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<sup>19</sup> In line with the Brazilian NDC on the Paris Agreement, large hydroelectric power plants generation projects are not considered. Between 2000 and 2021, the capacity of the Brazilian system went from 73 GW to 180 GW, with 70% of the expansion financed by the Bank. Considering large hydroelectric plants, renewable sources represent 85% of the total financed capacity.

In addition to the role in the insertion of new renewable sources, the BNDES contributed to the strengthening of the production chain. The Bank structured and articulated, together with the business community and government entities, the impetus for the installation of the wind energy supply chain in the country. Currently, the industry has the main wind turbine manufacturers in the world and a robust supply chain giving them support. This industry is able to supply the projects in the country, providing security for investments, and also to export parts and components to other markets. The social impact of the establishment of this industrial base resulted in the generation of qualified jobs in the country, along the entire production chain, and also in areas close to the projects, mainly in states of the Northeast region such as Bahia, Ceará and Pernambuco.

Also, in line with the national climate strategy that plans to increase the participation of biofuels in the Brazilian energy grid towards climate neutrality,<sup>20</sup>

<sup>20</sup> BRASIL. Ministério do Meio Ambiente. *Diretrizes para uma Estratégia Nacional para Neutralidade Climática*. Brasília, DF: Ministério do Meio Ambiente, 2022. Available at: [https://www.gov.br/mma/pt-br/assuntos/clima/ozoniodesertificacao/clima/diretrizesparaumaestrategianacionalparaneutralidadeclimatica\\_vdefeso.pdf](https://www.gov.br/mma/pt-br/assuntos/clima/ozoniodesertificacao/clima/diretrizesparaumaestrategianacionalparaneutralidadeclimatica_vdefeso.pdf). Accessed on: October 2022

the BNDES has contributed on several fronts in the biofuels sector, such as expansion of production capacity, technological development and formulation of public policies. Since 2007, the projects supported by the Bank have made it possible to increase the annual production of ethanol by about 10 billion liters (one third of Brazil's current production), enough to supply 200 million vehicle tanks, and more than 3,000 MW in electricity generation capacity. In addition, the institution supported in the same period the expansion of biofuel storage capacity by 40,000 m<sup>3</sup>. The technological promotion historically carried out by the BNDES has brought results, such as the increasing investment in new varieties of sugarcane and in the development of second-generation ethanol (E2G), which increases by up to 45% the productivity of ethanol per hectare and whose viability today is evidenced in the implementation of the third E2G plant in Brazil scheduled for 2023, all of which had the support of the BNDES. In addition to these, the innovations that today enable the generation of biogas and biomethane – which will allow the sector to grow through increased productivity, without the need to expand new agricultural areas – also deserves



## CHAFARIZ COMPLEX

The Chafariz Complex, of the Neoenergia group, with a total installed capacity of 471 MW – of which 370 MW financed by the BNDES –, located in the municipalities of Santa Luzia, São José do Sabugi, São Mamede and Areia de Baraúnas, all in the state of Paraíba, is one of the largest wind projects supported by the BNDES. The project is expected to contribute to the climate, avoiding the emission of 65,000 tCO<sub>2</sub>e/year.\* In addition, the expected generated energy should meet the equivalent of more than 840 thousand households.

THE PROJECT IS EXPECTED  
TO AVOID THE EMISSION OF



**65,000 tCO<sub>2</sub>e/YEAR**

\* According to estimates by Neoenergia.



Photo: Neoenergia

to be highlighted. The potential of biogas in Brazil is almost forty times higher than current production and, if well used, would allow to add a 34.5% generation capacity of electricity demand or, alternatively, replace up to 70% of diesel consumption.<sup>21</sup>

Today, the BNDES is one of the three largest clean energy financiers in the world, according to BloombergNEF. It is estimated<sup>22</sup> that the projects supported by the Bank in the period 2015-2021 are responsible, throughout their useful life, for avoiding emissions of approximately 76 million tCO<sub>2</sub>e, which corresponds to the emissions of energy production necessary to supply the state of Rio de Janeiro for more than 27 years.

<sup>21</sup> ASSOCIAÇÃO BRASILEIRA DO BIOGÁS – ABIÓGÁS. Biogás no Brasil: conhecendo o mercado no país. *Abiogás*, São Paulo, [2021]. Available at: [https://abiogas.org.br/wp-content/uploads/2021/01/Infograficos-Abiogas\\_D\\_2021-1.pdf](https://abiogas.org.br/wp-content/uploads/2021/01/Infograficos-Abiogas_D_2021-1.pdf). Accessed on: November 9, 2022.

<sup>22</sup> The estimates were performed in a grouped way from the sum of the installed capacities (in megawatts) by generation segment (wind, solar, etc.). The Greenhouse Gas Reduction Calculation Tool of the Climate Fund Program was used: BNDES – BANCO NACIONAL DE DESENVOLVIMENTO ECONÔMICO E SOCIAL. Programa Fundo Clima – ferramenta de cálculo de redução de GEE's. *BNDES*, Rio de Janeiro, [200-]. Available at: <https://www.bndes.gov.br/wps/portal/site/home/financiamento/produto/fundo-clima/ferramenta-calculo-reducao>. Accessed on: 28 out. 2022.

### BNDES RENOVABIO

Created in 2021, the BNDES RenovaBio Program stimulates the energy efficiency of companies that produce biofuels, encouraging the adoption of more efficient technologies and better productive and environmental practices, offering a reduction in the interest rate to those who achieve the emission reduction goals stipulated by the program. The objective is to reinforce the Federal Government's policy related to RenovaBio, which aims to reduce the carbon intensity of the fuel grid in the transport sector, seeking to increase the productive efficiency and supply of biofuels. Since its launch in 2021, about R\$ 800 million in financing has been approved. It is estimated at 515,000 tCO<sub>2</sub>e the emissions to be avoided by the operations approved in the first year of the program, equivalent to 70 days of the emission of the fleet of cars in the city of São Paulo (SP).

IT IS ESTIMATED THAT THE PROJECTS SUPPORTED BY THE BANK IN THE PERIOD 2015-2021 ARE RESPONSIBLE, THROUGHOUT THEIR USEFUL LIFE, FOR AVOIDING EMISSIONS OF APPROXIMATELY 76 MILLION TCO<sub>2</sub>E.

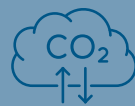




## JANAÚBA SOLAR COMPLEX

The Janaúba Solar Complex, of the Brookfield group, with a total installed capacity of 700 MW, located in the municipality of Janaúba, in the state of Minas Gerais, is one of the largest solar projects supported by the BNDES. The project is expected to contribute to the climate by avoiding the emission of 118,000 tCO<sub>2</sub>e/year. In addition, the expected generated energy should meet the equivalent of more than 930 thousand households.

THE PROJECT IS EXPECTED  
TO AVOID



**118,000** tCO<sub>2</sub>e/ANO



Photo: Elera



## Performance of the BNDES in logistics and urban mobility

Brazil is a country of continental dimensions, with a population of about 215 million people<sup>23</sup> – 85% of these people live in large urban centers.<sup>24</sup> These characteristics of the country create challenges for logistics and urban mobility – such as the need to increase investments in sustainable infrastructure, reducing GHG emissions.

Urban mobility and logistics projects are of great importance for achieving concrete results towards the low-carbon economy and for meeting the goals assumed by Brazil in the Paris Agreement (formalized in the NDC), since transport activities in Brazil are responsible for about 13% of national net CO<sub>2</sub> emissions.<sup>25</sup>

<sup>23</sup> IBGE – INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA. Projeção da população do Brasil e das Unidades da Federação. IBGE, Rio de Janeiro, [200-]. Available at: <https://www.ibge.gov.br/apps/populacao/projecao/index.html>. Accessed on: October 28, 2022.

<sup>24</sup> IBGE EDUCA. População rural e urbana. *IBGE Educa*, Rio de Janeiro, [200-]. Available at: <https://educa.ibge.gov.br/jovens/conheca-o-brasil/populacao/18313-populacao-rural-e-urbana.html#:~:text=De%20acordo%20com%20dados%20da,brasileiros%20vivem%20em%20C3%A1reas%20rurais>. Accessed on: October 28, 2022.

<sup>25</sup> BRASIL. Ministério da Infraestrutura. Empresa de Planejamento e Logística. *Anuário estatístico de transportes 2010-2020*. Brasília, DF: Ministério da Infraestrutura: EPL, 2020. Available at: <https://www.gov.br/infraestrutura/pt-br/assuntos/dados-de-transportes/AnuarioEstatisticoTransportes2020QRcode21.06.2020.pdf>. Accessed on: October 28, 2022.

In the case of urban mobility, a study by the BNDES<sup>26</sup> suggests that the mobility deficit in the 15 largest metropolitan regions is R\$ 360 billion (2020 prices). Eliminating this deficit requires greater provision of public transport, which generates less pollution, consumes less energy and causes fewer accidents than individual transport.

In the case of logistics, the Guidelines for a National Strategy for Climate Neutrality of the Ministry of the Environment establish that investments should focus on the rail system, in order to increase the transport of cargo on rails, and on the waterway system, which can still be expanded by at least 15,000 km, a distance greater than that from Brasilia to Qatar.

Since 2015, the BNDES has supported (i) the implementation of the VLT and the expansion of the BRT, both in Rio de Janeiro (RJ); (ii) the implementation of the BRT in Sorocaba (SP); (iii) the expansion of the subway in Salvador (BA); and (iv) Line 6 of the São Paulo subway (SP). In addition, these projects aim to serve 1.96 million users per day, and predict,

<sup>26</sup> SANTOS, R. T. et al. Demanda por investimentos em mobilidade urbana no Brasil. *BNDES Setorial*, Rio de Janeiro, n. 41, p. 79-134, 2015. Available at: <https://web.bnades.gov.br/bib/jspui/handle/1408/4301>. Accessed on: October 28, 2022.

throughout their useful life, to avoid the emission of 7.9 million tCO<sub>2</sub> – equivalent to 2.9 years of emission of the car fleet of the city of São Paulo (SP), today, the largest in Brazil.

The São Paulo subway Line 6 project is a highlight and involves 15 new stations, 132 new cars, expansion of the subway system by 15 km, in addition to social investments in communities around the stations. The forecast is to serve 633 thousand users per working day, which represents about 5% of the city's population.

With regard to railways, the BNDES operations approved between 2017 and 2021 are associated with the following deliveries: (i) expansion of 24 TKU/year in cargo capacity; (ii) four expanded railway yards; (iii) 11 new yards built; (iv) 1,622 railway wagons purchased; and (v) 25,687 modernized railway wagons.

It is estimated that our projects approved since 2015 in transport (railways and waterways) are contributing to avoid the emission of 408 thousand tCO<sub>2</sub>e, equivalent to 55 days of the emission of the fleet of cars in the city of São Paulo (SP).



## SALVADOR SUBWAY

The BNDES supported the implementation of the Salvador and Lauro de Freitas Subway System, in the metropolitan region of Salvador (BA). The project, which started commercial operation in January 2016, contributed to avoiding the emission of more than 119,000 tons of CO<sub>2</sub> between 2018 and 2021, according to estimates made in the Climate Fund tool.

EMISSIONS AVOIDED  
BETWEEN 2018 AND 2021

**119,000**  
TONS OF CO<sub>2</sub>

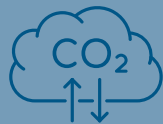


Photo: Acervo BNDES/André Telles Fotografia

## Performance of the BNDES in land use, land-use change and forestry

Land use, land-use change and forestry (LULUCF) are the largest sources of GHG emissions in Brazil, corresponding to 38% of GHG emissions in 2020.<sup>27</sup>

Changes in land use in the Amazon biome – especially deforestation – are the main cause. Deforestation also has effects such as loss of biodiversity, reduction of the regular availability of water resources, increased erosion, changes in the microclimate and changes in the rainfall regime.

The Brazilian NDC establishes that the country should achieve net zero emissions by 2050 and eliminate illegal deforestation by 2028. In addition, in the Guidelines for a National Strategy for Climate Neutrality, it is proposed as a measure to restore and reforest 18 million hectares of forests by 2030. The BNDES supports through various instruments activities such as the restoration of biomes, the development of production chains and

<sup>27</sup> BRASIL. Ministério da Ciência, Tecnologia e Inovações. *Estimativas anuais de emissões de gases de efeito estufa no Brasil*. 6. ed. Brasília, DF: Ministério da Ciência, Tecnologia e Inovações, 2022. Available at: <https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/sirene/publicacoes/estimativas-aneais-de-emissoes-gee/arquivos/6a-ed-estimativas-aneais.pdf>. Accessed on: October 28, 2022.

the concession of parks and forests aiming at their conservation and sustainable use. In the 2017-2021 period, the Bank disbursed R\$ 3 billion for this agenda. These projects include reimbursable and non-refundable amounts for native and planted forests.

Specifically for the restoration of native forests, using non-refundable resources, projects that contemplate the restoration of 2,585 hectares of native forests – equivalent to about 3,133 football fields – were approved, allowing the removal of 499,000 tCO<sub>2</sub>e from the atmosphere.

With regard to parks and forests, our work in structuring projects allowed, in 2022, the success of the auctions of the Iguaçu National Park, the state

parks of Caracol, Tainhas and Turvo, in Rio Grande do Sul and the State Park of Serra do Conduru, in the south of Bahia. There are 78 assets in the sector, including parks and forests, currently being structured by the BNDES, corresponding to a concession potential of 17.8 million hectares.

In addition, the BNDES, through the Project Structuring Fund (FEP), an instrument that supports technical studies, research or the structuring of projects that promote the economic and social development of Brazil, is conducting a technical and legal study to develop an economic model of public forest concessions based on remuneration for conservation and recovery.

### LIVING FOREST

Launched in 2022, Living Forest is an initiative in the form of matchfunding with companies and governments whose objective is to finance, with non-refundable resources, ecological restoration projects in Brazilian biomes with native species and agroforestry systems. The goal is to raise R\$ 1 billion, with which it is estimated that up to 66,000 hectares can be restored, resulting

in the removal of up to 18 million tCO<sub>2</sub> from the atmosphere over 25 years, equivalent to almost seven years of emission of the car fleet of the city of São Paulo (SP). By September 2022, 15 entities had already formalized the partnership with the BNDES, mobilizing resources totaling R\$ 680 million, of which R\$ 250 million from the BNDES Socioenvironmental Fund.

## CONCESSIONS OF CONSERVATION UNITS OF NATIONAL PARKS AND FORESTS

The concession of natural and urban parks is a management format for these assets that enables the transfer of ecotourism support services focusing on areas, attractions and facilities intended for public use, preceded by private sector investments for requalification, modernization, operation and maintenance of these units. The forest concession is a form of public forest management that allows the delegation, to legal entities selected by bidding, of the right to carry out sustainable forest management, in order to allow the exploitation of timber and non-timber forest products and forest services. The forest concession is an important tool to implement the national conservation policy and allows better management of public environmental assets, contributes to the fight against illegal activities, generates social and environmental benefits and promotes long-term economic development on a sustainable basis.

The BNDES also strengthened environmental inspection in the country. There are more than 1,700 inspection missions supported over the years, as well as more than 124 million hectares of rural properties registered in the Rural Environmental Registry (CAR), totaling 1 million properties registered through the support of the Amazon Fund. Added to this effort is the strengthening of 326 federal, state and municipal environmental agencies. The actions supported on the sustainable production axes led to 195 protected areas

supported and more than 74 million hectares of forest directly managed as a result of supported projects.

The maintenance of the standing forest also involves the promotion of income generation projects of local populations dependent on the bioeconomy, thus reducing the incentive to deforestation in search of more profitable economic activities. In this social vision integrated to the climate agenda, the Amazon Fund contributed to the generation of income of R\$ 250 million, benefiting more than 207 thousand people.

## PUBLIC CALL FOR STRUCTURES IN BLENDED FINANCE

The forest bioeconomy<sup>28</sup> is among the three strands selected for the first public call for blended finance structures from the BNDES, launched in 2022. Aligned with the 2030 Agenda and inspired by good practices advocated by the Organization for Economic Cooperation and Development (OECD) and multilateral bodies, such as the International Finance Corporation (IFC), the BNDES saw hybrid finance as an option to be tested, for its leverage potential, both of resources and different stakeholders. The objective is to foster the impact

ecosystem and leverage resources for socioenvironmental projects and innovation that can be replicable and scalable in the long term. Of the 26 proposals received by the public notice on the bioeconomy theme, four go to the final phase, with the disclosure of the winners scheduled for November 2022. In the end, up to R\$ 90 million will be made available from the BNDES Blended Finance statutory fund budget to select up to 12 proposals in the forest bioeconomy, urban development and circular economy areas.

<sup>28</sup> For the purpose of the notice, the concept of forest bioeconomy involved “biological products, services and processes – including intensive investments in knowledge (encompassing the appreciation and dissemination of traditional knowledge of traditional peoples and communities) and technological innovation – that add value to biomass and enable the structuring of sustainable productive arrangements and the development of biomaterials, with a circular approach, generation of work and income, and retention of value for the local population, while preserving and expanding forests and other biodiversity areas”.





## APREMAVI

The project of the Association for the Preservation of the Environment and Life (Apremavi) received support from the BNDES for the restoration of 320 hectares of Atlantic Forest in degraded areas of the upper and middle Itajaí Valley and the North Plateau, in the state of Santa Catarina. The project, completed in April 2022, benefited about 700 small landowners, municipal parks and private national heritage reserves (RPPN), protecting springs, riverbanks and conservation units.

THE PROJECT HAS RESTORED

**320 HECTARES**  
**OF ATLANTIC FOREST**



Photo: Apremavi

## Performance of the BNDES in agriculture and livestock

According to the Food and Agriculture Organization of the United Nations (FAO), Brazil is the fourth largest agricultural producer in the world.<sup>29</sup> Greener agriculture is essential for sustainable development as it contributes to ending hunger while combating climate change.

According to the Brazilian Agricultural Research Corporation (Embrapa), Brazil<sup>30</sup> is responsible for feeding eight hundred million people. Given its natural, technical and commercial advantages, the country will be responsible for much of the growth in food supply needed in the coming years.

Brazil's main strategy for coping with climate change in agriculture is the implementation of the Sectoral Plan for Adaptation and Low Carbon Emission in Agriculture with a view to sustainable development 2020-2030 (ABC+ Plan).

<sup>29</sup> ROSS, S. 4 Countries That Produce the Most Food. *Investopedia*, New York, August 2, 2022. Available at: <https://www.investopedia.com/articles/investing/100615/4-countries-produce-most-food.asp#citation=56>. Accessed on: October 28, 2022

<sup>30</sup> CONTINI, E.; ARAGÃO, A. O Agro brasileiro alimenta 800 milhões de pessoas. *Embrapa*, Brasília, DF, mar. 2021. Available at: <https://www.embrapa.br/documents/101180/26187851/Popula%C3%A7%C3%A3o+alimentada+pelo+Brasil/5bf465fc-ebb5-7ea2-970d-f53930b0ec25?version=1.0&download=true>. Accessed on: October 28, 2022.

### SOWING CLIMATE RESILIENCE IN RURAL COMMUNITIES IN THE NORTHEAST

The strengthening of agroforestry systems and support for adaptation to climate change are the focus of the project Sowing climate resilience in rural communities in the Northeast, a partnership between the BNDES, the International Fund for Agricultural Development (IFAD) and the Green Climate Fund (GCF) to finance projects that increase food security for low-income family farmers. With an estimated budget of US\$ 202.5 million, the project must be implemented in up to four states in the

Northeast to be defined depending on interest and indebtedness with the BNDES. The ultimate goal is to serve 250,000 families, focusing on women, youth and traditional communities. 21,000 cisterns and 16,000 domestic wastewater treatment and reuse units will be installed, in addition to 84,000 hectares of resilient productive agroforestry systems for family farming in collective areas and schools. The project will contribute to reducing carbon emissions of up to 11 million tCO<sub>2</sub>e.

The plan has as its guiding axes the confrontation of the adverse impacts of climate change, the increase of resilience and the sustainability of the agriculture and livestock sector. The BNDES is strongly inserted in the theme of sustainability in the field, through the execution of the Agricultural and Livestock Plans of the Federal Government (PAP).

The Brazilian agricultural policy is defined by the Ministry of Agriculture, Livestock and Supply and, with regard to credit, especially for investments, the BNDES plays an important role in each PAP. There are approximately R\$ 25 billion per harvest year transferred through more than thirty partner financial

institutions, present throughout the national territory. They are resources that enable the most varied purposes of investment: acquisition of capital goods, execution of projects, irrigation, storage, integration of forestry farming (ILPF), low-carbon agriculture, bioeconomy, agroecology, among others.

There are many merits of the BNDES's participation in the offer of credit to the sector. An example is the association between the credit made available for the purchase of machinery and equipment and increases in productivity and more efficient land use. A positive variation of 1% in the volume of credit from the BNDES for the acquisition of agricultural machinery and equipment is associated with

positive variations of 0.22% in agricultural productivity and 0.07% in agriculture and livestock productivity, in addition to the intensification of land use, with the replacement of pasture by crop.<sup>31</sup>

In particular, in its contribution to sustainability, the BNDES is one of the operators of the ABC Program, specifically focused on adapting to climate change and low carbon emissions in agriculture and livestock, which disbursed R\$ 3.6 billion between 2017 and 2021. The support to agriculture and livestock cooperatives by the BNDES also deserves to be highlighted for its multiplier effect of socioenvironmental responsibility practices in the field. In the last four years, there have been more than one hundred cooperatives supported by the Bank, comprising more than 455 thousand members and more than 165 thousand employees. Among the direct projects supported, the implementation of renewable electricity generation plants from the use of biogas from agro-industrial waste by three different cooperatives in Paraná stands out.

<sup>31</sup> SANT'ANNA, A. A.; MACHADO, L.; SOUZA, P. Avaliação de efetividade dos financiamentos do BNDES para compra de máquinas e equipamentos agrícolas. Relatório de Avaliação de Efetividade, Rio de Janeiro, v. 4, n. 10, p. 3-43, 2022. Available at: [https://web.bnades.gov.br/bib/jspui/bitstream/1408/21844/3/RAE\\_v.%204%2c%20n.%2010%2c%20jan.%202022.pdf](https://web.bnades.gov.br/bib/jspui/bitstream/1408/21844/3/RAE_v.%204%2c%20n.%2010%2c%20jan.%202022.pdf). Accessed on: October 28, 2022.

### PRODUCTION OF LOW-CARBON BOVINE MEAT AND MILK

In the context of livestock, Brazil is today the largest exporter and second largest producer of beef in the world, behind only the United States.<sup>32</sup> Due to the importance of the sector in the national emissions framework, the construction of low-carbon solutions is fundamental in the national climate agenda. Aware of this, the BNDES and the Ministry of Agriculture, Livestock and Supply (Mapa) launched in 2022 a public call for the selection of a partner to elaborate a technical study on the theme "production of low-carbon beef and milk", which had as its winner the consortium of the companies Imaflora, Agrotools, WayCarbon, WRI and DSM, led by Fundação Getulio Vargas (FGV). The study will have two main products: (i) the development of a product life cycle analysis calculator, which is characterized by a method for measuring and certifying carbon emissions from inputs in agricultural production to industrial processing and (ii) the indication of incentive mechanisms that stimulate investments in reducing emissions, both in the agricultural stage and in the industrialization of bovine meat and milk. In summary, the initiative aims to serve as a basis for the development of strategies and business models that adopt low-carbon technologies in the production of meat and milk in Brazil, stimulating sustainability through the evaluation and certification of avoided carbon emissions.

<sup>32</sup> UNITED STATES. Department of Agriculture. Foreign Agricultural Service. Record Brazil Meat Exports in 2023. *Foreign Agricultural Service*, Washington, DC, Oct. 12, 2022. Available at: [https://apps.fas.usda.gov/psdonline/circulars/livestock\\_poultry.pdf](https://apps.fas.usda.gov/psdonline/circulars/livestock_poultry.pdf). Accessed on: November 9, 2022. (Livestock and Poultry: World Markets and Trade).

THE SUPPORT TO AGRICULTURE AND LIVESTOCK COOPERATIVES BY THE BNDES ALSO DESERVES TO BE HIGHLIGHTED FOR ITS MULTIPLIER EFFECT OF SOCIOENVIRONMENTAL RESPONSIBILITY PRACTICES IN THE FIELD.





## PLANTAR RONDÔNIA

With the support of the BNDES, the Plantar Rondônia project prepared and implemented forest restoration projects in 1,540 properties (2,525.54 hectares) of family farmers, structured two nurseries, which have already produced more than 3.5 million seedlings, distributed and used to restore the legal reserve areas and permanent preservation of rural properties, and benefited more than 2,600 families with technical assistance and rural extension. In addition, the project also produced specialized information with the objective of planning and monitoring the results of forest regeneration in terms of stored carbon and avoided emissions.

STRUCTURING OF **TWO NURSERIES**,  
WHICH HAVE ALREADY PRODUCED



**3.5 MILLION SEEDLINGS**



Photo: Plantar Rondônia – Rioterra

## Performance of the BNDES in industry

Industrial processes represent approximately 6.1% of Brazilian GHG emissions,<sup>33</sup> in line with the world standard.<sup>34</sup> The national climate strategy for the sector consists of promoting new standards of industrial processes, including the development, production and commercialization of new technologies less intensive in GHG emissions, which contribute to the strengthening of low-carbon industrial production.

In its long-term strategy, the BNDES established as priority actions (i) to foster operations with a positive environmental impact; (ii) to develop production chains related to sustainability; (iii) to support the execution of a new business model in the face of the climate neutrality proposal; (iv) to promote eco-efficiency, the reduction of CO<sub>2</sub> emissions and the circular economy; and (v) to maintain and improve export credit lines that encourage sustainability.

<sup>33</sup> BRASIL. Ministério da Ciência, Tecnologia e Inovações. *Estimativas anuais de emissões de gases de efeito estufa no Brasil*. 6. ed. Brasília, DF: Ministério da Ciência, Tecnologia e Inovações, 2022. Available at: <https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/sirene/publicacoes/estimativas-aneais-de-emissoes-gee/arquivos/6a-ed-estimativas-aneais.pdf>. Accessed on: October 28, 2022.

<sup>34</sup> RITCHIE, H.; ROSER, M. Emissions by sector. *Our World in Data*, [s. l.], 2020. Available at: <https://ourworldindata.org/emissions-by-sector>. Accessed on: October 28, 2022.

Between 2017 and 2021, the BNDES disbursed R\$ 401 million in credit for energy efficiency projects in the industry. In 2022, until August, this disbursement already totals R\$ 206 million.

In 2022, in the fields of innovation support and the industrial environmental, social and governance (ESG) agenda, the BNDES established the largest partnership ever made with non-refundable resources from the Technological Fund (BNDES Funtec), with the Brazilian Industrial Research and Innovation Company (Embrapii), with a budget of R\$ 170 million that can leverage investments of up to R\$ 500 million over the next four years in circular economy projects, forest bioeconomy, biofuels, connectivity and digital transformation, health technologies, among other topics, with a special focus on promoting projects in the Legal Amazon region. The partnership has been successful in capturing projects and has already contracted a portfolio of innovative projects with industrial companies in the amount of R\$ 46 million in its first six months.

The BNDES has also advanced in the support of the broadband internet provider segment, which has managed to bring telecommunication services to smaller cities and municipalities in the most remote

regions of Brazil. This contributes to making inspection and monitoring services more effective, in addition to generating income for local production chains. The support has a diversified portfolio of instruments in direct and indirect credit operations (which made possible, between 2018 and 2022, a portfolio of about R\$ 1 billion), and also with guarantee instruments. More than 2,000 companies benefited from these resources, 43% of which were in the North (4%) or Northeast (39%) regions. In these regions, the support generated more than 240,000 new connections and brought connectivity to more than 700,000 people.

### BNDES ESG CREDIT

Following the concept of sustainability linked loan, BNDES ESG Credit offers a reduction in the interest rate linked to the fulfillment of pre-established sustainability goals. Among its objectives, we highlight the stimulation of sustainable technologies in sectors with greater environmental impact, such as mining, metallurgy and steel. In 2022, R\$ 142 million were contracted through the product. The experience brought by the first operations and the demand reported by other productive sectors have been considered as inputs for review and expansion of the program, with regard to the list of sectors served and the list of supportable indicators.

The climate agenda has also been incorporated into export support. In June 2022, the BNDES Executive Board approved the creation of the category “efficient equipment” at BNDES Exim Pre-shipment, granting better financial conditions to the export of capital goods registered in the BNDES System as “low carbon mobility”, “low carbon emission” or “4.0 machines”. It is estimated that the BNDES financing of efficient equipment can reach the mark of US\$ 110 million annually. Between July and October 2022 alone, the Bank approved US\$ 11.6 million in financing in this new category.

## Performance of the BNDES in sanitation

Sanitation corresponds to approximately 4.2% of Brazilian GHG emissions,<sup>35</sup> which is in line with the world average of 3%.<sup>36</sup>

<sup>35</sup> These emissions are composed of 60.9% solid waste disposal, 31.5% sewage treatment and disposal, and 6.2% industrial effluent treatment. BRASIL. Ministério da Ciência, Tecnologia e Inovações. *Estimativas anuais de emissões de gases de efeito estufa no Brasil*. 6. ed. Brasília, DF: Ministério da Ciência, Tecnologia e Inovações, 2022. Available at: <https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/sirene/publicacoes/estimativas-aneais-de-emissoes-gee/arquivos/6a-ed-estimativas-aneais.pdf>. Accessed on: October 28, 2022.

<sup>36</sup> RITCHIE, H.; ROSER, M. Emissions by sector. *Our World in Data*, [s. l.], 2020. Available at: <https://ourworldindata.org/emissions-by-sector>. Accessed on: October 28, 2022.

The financing projects approved by the BNDES from 2017 to 2021 foresee 109 thousand water connections and 299 thousand sewage connections. However, in recent years, it was through the structuring of concession projects and public-private partnerships (PPP) that the BNDES contributed more decisively to the expansion of water and sewage services.

From 2019 to September 2022, seven auctions were held for 11 projects structured by the BNDES Project Factory, which resulted in the signing of nine concession contracts with investment commitments estimated at R\$ 48 billion. There are also eight projects in the Bank's structuring portfolio, which are in different phases, with estimated investments of R\$ 25 billion. On the whole, these projects will benefit about 35 million people with access to quality water and collection and treatment of environmentally sustainable sewage, including 22.5 million people with the improvement of the service already provided. There is more than R\$ 103 billion in mobilized capital, including grants worth R\$ 29 billion and investments of R\$ 73.6 billion foreseen in the sector from the project structuring action.

Brazil faces a major challenge to universalize access to sanitation services. The goal established by the New Legal Framework for Sanitation (Law 14,026, of July 15, 2020) for 2033 is to reach 90% of households with collected and treated sewage and 99% of access to treated water. The projects structured by the BNDES and already auctioned will contribute to reduce by 10.4% the deficit of 35 million people without access to treated water and by 10.1% the deficit of 100 million people without access to sewage collection and treatment. These percentages are still expected to grow significantly in the following years, with projects under structuring. Water insecurity is one of the consequences of climate change. The projects structured by the BNDES provide adaptation to this effect by increasing water security due to the reduction of losses, the reduction of pollution of water bodies and the protection of water sources. In addition, operators, in search of greater efficiency, are implementing measures to reduce electricity consumption, contracting renewable energy sources (such as solar), instituting processes to treat the sludge generated by sewage treatment plants (such as initiatives to produce fertilizers from sludge) and reducing losses among other mitigating measures that reduce greenhouse gas emissions.

As a development inducing agent, the BNDES is studying the best socioenvironmental and climate practices adopted in the market and analyzing ways to incorporate them both in the modeling of the structuring of sanitation privatization projects and in the form of obligations for the future private concessionaire to comply.

Thus, it is expected to improve the governance related to the climate issue in the concessionaires and to measure and price the investments and maintenance costs inherent to the GHG emission reduction measures and the estimates of investments and maintenance costs of infrastructure resilient to the new climate projections and extreme events.

With regard to solid waste, the national strategy for climate neutrality foresees the closure of dumps. Since 2019, the closure of 645 of the 3,257 existing dumps has been promoted. Contributing to this goal, the BNDES supported projects that foresee the addition of 18.6 million m<sup>3</sup> of landfill capacity in the 2017-2021 five-year period.

## The BNDES's contributions to adaptation initiatives

Climate change is a reality, and the disruptions associated with it are particularly worrying for a country such as

Brazil, located in the tropical region (consequently, subject to greater impacts), with a relevant part of the territory bathed by the sea, and where agribusiness is responsible for 20% of the country's gross domestic product (GDP) and 30% of employment.<sup>37</sup>

According to projections of the 6th IPCC report,<sup>38</sup> if emissions continue to increase at the current level, heat deaths in Brazil are expected to increase by 8% by 2090. Droughts are expected to become a more frequent phenomenon, especially in the Northeast, where a 22% reduction in rainfall is expected throughout this century and the transition to a desert climate is foreseen. At the same time, extreme rainfall events also become more likely.

Agriculture is particularly subject to the effects of climate change. Changes in the patterns and distribution of events, such as temperature

rise, insufficient water supply, risk of extreme precipitation and floods, tend to reduce the potential of agricultural activity.

The results of emission mitigation will be felt over the years, with the reduction of the speed of increase of the global temperature. Meanwhile, it is necessary to adapt, preparing Brazil to deal with the effects of climate change and be more resilient to extreme events.

In the climate adaptation agenda, the BNDES has developed management tools that incorporate the theme in our operations, reducing the portfolio's financial risk while inducing the adoption of best climate risk management practices by our clients. In addition, the Bank has products that can be used for adaptation actions, such as the recovery of degraded areas, the recovery of forests and protection of springs and the strengthening of the resilience and adaptability of states and municipalities to the adversities brought by climate change. It also supports integrated actions at the municipal level in sectors such as sanitation, transport and the environment, which are essential to the development of the climate adaptation agenda in the country.

<sup>37</sup> THE WORLD BANK GROUP. *Climate risk country profile: Brazil*. Washington, DC: The World Bank Group, 2021. Available at: [https://climateknowledgeportal.worldbank.org/sites/default/files/2021-07/15915-WB\\_Brazil%20Country%20Profile-WEB.pdf](https://climateknowledgeportal.worldbank.org/sites/default/files/2021-07/15915-WB_Brazil%20Country%20Profile-WEB.pdf). Accessed on: November 9, 2022.

<sup>38</sup> BRASIL. Ministério da Ciência, Tecnologia e Inovações. *Estimativas anuais de emissões de gases de efeito estufa no Brasil*. 6. ed. Brasília, DF: Ministério da Ciência, Tecnologia e Inovações, 2022. Available at: <https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/sirene/publicacoes/estimativas-anuais-de-emissoes-gee/arquivos/6a-ed-estimativas-anuais.pdf>. Accessed on: October 28, 2022.





## CISTERNS

Through the Cisterns Program, a public policy under the current responsibility of the Ministry of Citizenship, the BNDES supported the implementation of water cisterns for production, an important tool for climate adaptation, promoting food security and income generation for low-income rural families in the Brazilian semi-arid region. The projects, which also include resources for training, purchase of inputs (seeds and seedlings) and infrastructure for the formation of gardens, have already deployed more than 32 thousand cisterns, benefiting more than 125 thousand people, between 2013 and 2019. To date, the results have revealed on average a 64% reduction in the monthly cost of acquiring water from the benefited families and a 62% increase in their direct income.

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MORE THAN  **125 THOUSAND PEOPLE**  
**BENEFITED** FROM THE PROJECT

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Photo: BNDES Collection/André Telles Fotografia – Fabio Chieppe

# THE BNDES'S JUST NEUTRALITY STRATEGY

## Context

*This section presents the objectives and assumptions of the BNDES's climate strategy, as well as global neutrality commitments and transversal and sectoral mitigation strategies to be discussed and implemented by the Bank within its climate agenda, which are fundamental parts of the BNDES's strategic planning.*

## Objectives

- i) Implement the BNDES's Social, Environmental and Climate Responsibility Policy;<sup>39</sup>
- ii) Contribute to the implementation of laws, decrees and decarbonization guidelines of the Federal Government, as well as to other international climate agreements signed by the country;
- iii) Contribute to the development and consolidation of the national carbon market, as well as to the support of nature-based solutions; and
- iv) Induce the just transition to carbon neutrality of the economy considering regional socioeconomic aspects.

## Assumptions

- Encouragement of practices, innovations, development and incorporation of technologies aimed at decarbonization;
- Compatibility of the BNDES's portfolios with the decarbonization trajectory of the sectors of the Brazilian economy; and
- Additionality in the BNDES's performance in relation to sectoral decarbonization and aspects of social development.

<sup>39</sup> BNDES – BANCO NACIONAL DE DESENVOLVIMENTO ECONÔMICO E SOCIAL. Política de Responsabilidade Social, Ambiental e Climática do Sistema BNDES (PRSAC). BNDES, Rio de Janeiro, 2022. Available at: <https://www.bndes.gov.br/wps/portal/site/home/desenvolvimento-sustentavel/o-que-nos-orienta/prsac-e-seus-instrumentos/politica-responsabilidade-social-ambiental-climatica>. Accessed on: October 28, 2022.

## THE BNDES'S GLOBAL NEUTRALITY COMMITMENTS

- i) Carbon neutrality by 2050;<sup>40</sup>
- ii) Neutralization of emissions in scopes 1, 2 and those related to business travel and employee commuting (home-work) starting in 2025;
- iii) Completion of the inventory of the financed emissions of scope 3 for the other BNDES portfolios in 2023;
- iv) Definition, in 2023, of neutrality targets for the direct, indirect and variable income portfolios;<sup>41</sup>
- v) Definition, in 2023, of engagement goals to accelerate the transition of its clients to carbon neutrality; and
- vi) Incorporation, in 2023, of carbon accounting in the approval processes in support of new projects.

<sup>40</sup> Net zero applies when an organization sets a goal to achieve emissions reduction across its entire value chain (scopes 1, 2, and 3) over time, and reduces or offsets its residual emissions, whether direct or indirect.

<sup>41</sup> Transactions in the form of direct credit refer to those in which the client relates to the BNDES without the intermediation of a financial agent, directly negotiating the conditions and guarantees of the financing. In the indirect modality, the accredited financial agent assumes the risk of the credit operation with the BNDES, passing on the Bank's resources to the final client. The BNDES System's variable income portfolio includes shares, debentures and fund shares.

## CARBON MARKET

Brazil has the opportunity to move a carbon credit investment market of US\$ 7.5 billion by 2030, with the generation of thousands of direct and indirect jobs.

The BNDES works on three fronts related to carbon: supply, demand and market organization.

From the perspective of supply, we are seeking to provide more and more green solutions aimed at a low-carbon economy, launching products such as BNDES ESG Credit, matchfunding Living Forest, and BNDES Renovabio, among others, in addition to structuring green assets in partnership with several federative levels, through the Service Bank.

From the demand angle, the objective is to develop the voluntary market for the commercialization of carbon credits, stimulating the decarbonization of the economy and the achievement of the goals of the Paris Agreement. For this, we have already launched two public call notices for the acquisition of carbon credits in the voluntary market. The calls involve the purchase of carbon credits by BNDESPAR of securities predominantly of REDD+ origin (reduction of emissions from deforestation and forest degradation), reforestation and energy. The first public call for carbon credits in the voluntary market, held in March 2022, involved a budget of R\$ 10 million. The second, in September of the same year, had a budget of R\$ 100 million.

Regarding the organization of the market, we participate in working groups with several organizations, such as CVM, B3, multilateral organizations and consultancies, combining public and private interest in the construction of green solutions and supporting, on the public side, the improvement in regulatory development and public instruments; and, on the private side, seeking to address demands from the corporate sector, to help companies adapt to this new reality and achieve their ESG goals.

## Recent BNDES's advances in governance related to its social, environmental and climate responsibility

On July 1, 2022, Res. CMN 4.945/2021 entered into effect, updating the regulatory framework that provides for the Socioenvironmental and Climate Responsibility Policy (SECRP) and the actions for its effective implementation. Thus, the BNDES developed initiatives aimed at adapting its internal framework to comply with this new milestone.

One of them was the publication, in a single document and easily accessible on the Bank's website, of the Exclusion and conditional support list, containing the activities that the BNDES does not support, due to its high exposure to socioenvironmental risks, and the activities that it supports conditionally, in sectors with greater potential for negative impact. The BNDES also released the list of sustainable products and services, aimed at supporting the green economy and social development, and coordinated the revision of the Socioenvironmental Operations Management



Regulation, containing the criteria for assessing and treating socioenvironmental risk in its operations.

It is also worth mentioning the creation of the BNDES System's Social, Environmental and Climate Responsibility Committee, a permanent body that aims to advise the BNDES Board of Directors in the performance of its duties related to the monitoring of SECRP and the actions established with a view to its effectiveness.

The governance of the strategic discussion of the ESG theme at the executive level was also reinforced, with the reformulation of the Sustainability Committee (SC). The SC was linked to the Executive Board, providing greater participation of the upper hierarchy of the institution and the recommendation of discussions of an executive and strategic nature.

In addition, the main activities related to the sustainability agenda were mapped to better distribute them among the Bank's teams. The strategic and transversal activities were concentrated in the planning unit, due to its proximity to the theme. Thematic nuclei were maintained in the corporate relationship and investor relations units, as well as an area dedicated to socioenvironmental operations – the Public and Socialenvironmental Management Division (AGS).

Finally, the policy itself was updated. The BNDES pioneered the establishment of its first Socioenvironmental Responsibility Policy in 2010 and then carried out the third revision of its policy (the previous ones occurred in 2014 and 2019). The incorporation of the climate dimension into the document is noteworthy, as well as the strengthening of governance with the attribution of responsibilities to new actors, such as Internal Audit, which will assess processes related to SECRP and actions with a view to its effectiveness. Our SECRP now has four general principles and ten strategic guidelines, with emphasis on principle four "Action in line with Brazilian public standards and policies, considering international pacts and agreements that promote sustainable development and the transition to a carbon-neutral economy, such as the sustainable development objectives, within the scope of the 2030 Agenda, and the Nationally Determined Contribution, by Brazil, in the Paris Agreement".

In order to comply with the principles and guidelines established in our SECRP, teams from our various units work with the support of teams specialized in the socioenvironmental theme. We summarize below the organization chart of our sustainability governance.

### TRAINING IN ESG & CLIMATE

The BNDES has been implementing a series of initiatives aimed at raising awareness, engaging the Bank's collaborators, and offering training to the operational and executive staff with regards to socioenvironmental and climate-related issues. This training seeks to strengthen sustainable development as a strategic objective at the BNDES, as well as enhance the Bank's leadership in moving towards a carbon-neutral economy. From among these initiatives, we wish to highlight the webinar "Coffee and culture: ESG trends and purpose-based decision making" and the fulfillment of thematic modules by the BNDES's executive body, such as "Introduction to ESG practices at the BNDES", "Sustainable finance: risks, opportunities, and the role played by the BNDES", and "Human capital: the importance of our organization's intangible assets". More than one hundred employees have also completed the course "Climate Change Fundamentals", and a series of supplementary content on the subject is available, including lectures, workshops and other courses from FIA Business School, who has been contracted to provide them to the BNDES's operational and executive bodies throughout 2023.

## Sustainability governance

### BOARD OF DIRECTORS

- » Strategic-level direction and oversight
- » Approve and review the SECRP in addition to other attributions in order to ensure its effectiveness in the BNDES actions
- » Operation: monthly (or extraordinary) meetings

### SOCIAL, ENVIRONMENTAL AND CLIMATE RESPONSIBILITY COMMITTEE

- » Advisory to the Board of Directors in the approval and review of SECRP and assistance in assessing the adherence of the actions implemented by the BNDES to SECRP, proposing recommendations for improvement
- » Members: directors and possibility of external members
- » Operation: bimonthly (or extraordinary) meetings

### EXECUTIVE BOARD

- » Executive conduct of the BNDES activities in accordance with SECRP, observing the strategic direction of the Board of Directors
- » Supervises and directs the Sustainability Committee, with the objective of validating and monitoring the implementation actions of the SECRP
- » Operation: weekly (or extraordinary) meetings

### SUSTAINABILITY COMMITTEE (SC)

- » Executive discussion on actions related to SECRP and implementation – tactical and operational level
- » Members: executive directors and superintendents responsible for planning and for divisions involved in public and socioenvironmental management, credit, market and project structuring operations
- » Operation: bimonthly (or extraordinary) meetings

### TECHNICAL TEAMS

- » Technical-operational discussions, details and implementation
- » Members: technicians appointed by the Sustainability Committee
- » Assignment: advising the Sustainability Executive Committee

## Inventory and climate risks

### The BNDES's advances in the measurement of its GHG emissions

Aware of the importance of knowing its GHG emissions to build a decarbonization strategy, the BNDES has been making efforts to measure its emissions, including both those arising from its own activities and those associated with its portfolios.

In 2021, the Bank resumed the measurement of GHG emissions from its administrative activities and has been structuring itself to calculate the financed emissions from its loan portfolio and equity interests. In 2022, internal exercises were carried out to calculate financed GHG emissions. Emissions from BNDESPAR's portfolio of listed companies were measured for the 2021 base year. The GHG inventory of the variable income portfolio of the listed companies was calculated by WayCarbon consultancy, under the Cooperation Agreement between the BNDES and the UK Pact of the British Government. The figures show an issue of 21.91 MtCO<sub>2</sub>e for the year 2021, representing 94.3% of this portfolio's exposure, calculated using an

internationally recognized PCAF (Partnership for Carbon Accounting Financials) methodology.

We also calculate GHG emissions for financed vehicles (buses and trucks) and agricultural machinery (tractors, harvesters, sprayers and irrigators). As for the non-automatic direct credit portfolio, we are working to collect the necessary data to calculate the emissions of the sectors with the highest exposure: energy, urban mobility (subways and BRTs), vessels and platforms, aircraft and highways.

The calculation of the emissions of direct and indirect credit portfolios, as well as the portfolio of equity interests of listed companies, at this time, is an internal exercise for the staff to acquire the necessary knowledge to implement the process of calculating the inventory of emissions financed in their flow of analysis and monitoring of operations. The Bank is designing an announcement for the hiring of a consultancy specialized in the climate agenda to provide, among other things, technical support in structuring the calculation process and external reporting of the complete carbon inventory of the BNDES. As soon as such inventory is ready, the information shall be

made public. In addition to this inventory, the BNDES has been studying the possibility of requesting that its clients start sending emissions calculations from projects that are being analyzed by the Bank, adding more precision to its inventory.

In addition to being required to report its carbon inventory to the regulator, to meet Res. BCB 151/2021 of 10/06/2021, the BNDES voluntarily adhered to the Brazilian GHG Protocol Program, at the national level, and to the Carbon Disclosure Project (CDP), at the international level. In both platforms, in addition to being considered good practice, it is strongly recommended that companies report the scope 3 of their activities, which in the case of the BNDES are the financed emissions. According to the CDP, for the financial sector, the financed emissions represent 700 times the emissions of scopes 1 and 2 (direct emissions of the company).

From the measurement of its carbon exposure, by calculating its complete GHG inventory, the Bank will be able to manage its transition risk more accurately and take the necessary mitigating measures to protect its assets and decarbonize its portfolio fairly, in a way that brings benefits to Brazilian society.

## Recent BNDES's advances in the incorporation of climate risk in its activities

The BNDES has been developing some initiatives aimed at deepening the incorporation of climate risk in its operations and meeting the requirements stipulated in Res. CMN 4,943/2021, which provides for the structure of risk management and capital management and the policy of disclosure of information of financial institutions.

Among these initiatives, a highlight is the development of a methodology for climate risk assessment in projects directly supported by the Bank, which is being applied, on a pilot basis, during the second half of 2022. The methodology is essentially based on the assessment of the transition and physical risks associated with the project, as well as the client's climate management capacity, based on public data as well as on the completion of questionnaires. After this pilot process, the result will be evaluated and a procedure will be designed to be incorporated into the day-to-day life of the teams involved.

In addition, we reviewed our credit risk rating methodologies, adjusting the weights of ESG aspects and incorporating climate risk aspects into sector risk assessment methodologies. In each classification it is possible to determine the impact of ESG and climate aspects on the risk assessment of companies.

In addition and as mentioned above, the BNDES is preparing a public bid notice for the hiring of consultancy specialized in the climate agenda, with the objective of inserting the analysis of climate scenarios both in the formulation of the climate strategy and in integrated risk management. The design of the notice will take into account the requirements of Res. CMN 4,943/2021 and Res. Bacen 139/2021, both published on September 15, 2021, so that the Bank can comply with them in the short term.

Considering the recent and specialized nature of the topic and the certainty that new databases and external methodologies will still be developed to better assess this risk and scale of its effect on the Bank's operations, all these works should undergo improvements in the future. The expansion of these risk analyses to other BNDES's activities is part of the Bank's planning for the coming years.

## Transversal strategies

Effective coping with climate change requires direct action by the BNDES on different fronts and spheres of influence. Therefore, the Bank's transversal strategies include engagement initiatives with different stakeholders. Climate-related issues will increasingly be addressed in an integrated manner with existing governance, management strategies, results analysis frameworks, and business plans. The Bank will articulate to build internal capacities and expand the supply of financial products aimed at investments associated with climate resilience and the transition to a carbon-neutral economy.

The Bank will seek the engagement of companies to prepare GHG emission inventories with greater coverage (including scope 3) and define transition goals and strategies for emission neutrality. It will also work on inducing good practices on climate change management.

With the government and other financial agents, the BNDES will promote adaptation practices to the effects of climate change and will contribute to the structuring of the Brazilian carbon market, deforestation prevention projects and nature-based solutions.

### TRANSVERSAL STRATEGIES

- i. Engagement of companies in the direct credit and shareholding portfolio to present an inventory of GHG emissions (scopes 1, 2 and 3) and define neutrality goals and transition strategies for net zero;
- ii. Engagement and mobilization of financial agents, public and private, to present an inventory of GHG emissions (scopes 1, 2 and 3) as well as in the alignment of their portfolios and promotion of mitigation and adaptation of the effects of climate change practices;
- iii. Provision of financial products that promote investments associated with the transition to a carbon-neutral economy and climate resilience;
- iv. Evaluation and possible inclusion of internal carbon price in the financial analysis of variable income instruments, the credit portfolio and the Bank's guarantee instruments;
- v. Advance in the incorporation of emission inventories and other climate aspects in the structuring of infrastructure and privatization projects;
- vi. Improvement of climate risk management, in line with regulatory guidelines and best practices;
- vii. Contribution to the construction and consolidation of the Brazilian carbon market, as well as nature-based solutions; and
- viii. Contribution to the development of just transition strategies to a carbon-neutral economy for sectors or regions economically exposed to sectors at high risk of climate transition.

## Sectoral mitigation strategies

The BNDES has identified key sectors for action in the context of climate strategy. Actions focused on the **energy sector** include: (i) support for the decarbonization of the Brazilian energy grid through energy efficiency projects, (ii) production and use of biogas and biomethane, in addition to (iii) generation by renewable sources, including the structuring of green hydrogen projects for domestic and international consumption. This action will contribute to Brazil becoming an export platform, leveraging the potential of a clean energy grid. In addition, the Bank will promote carbon capture and storage technologies (CCUS) in biogas/biomethane activities.

The theme of electrification and use of renewable sources in **rail logistics and urban mobility** will be one of the central topics of the BNDES's activities in the logistics and urban mobility sector, as well as the incentive to high capacity and low emission urban transport, including cycling infrastructure, and support to low carbon logistics.

Strategies for **land use, land-use change and forestry** activities include investments to prevent, combat and monitor illegal deforestation, acting in the Legal Amazon in an integrated and systemic way to generate sustainable development, as well as activities to recover degraded areas such as forests, springs, river basins, pasture areas and agricultural areas. In addition, solutions for the sustainable use of forests and biodiversity, especially the bioeconomy, will be encouraged.

With a focus on **agriculture and livestock**, the BNDES intends to promote sustainability in the sector's value chain, financing the use of bio-inputs and biofertilizers and boosting the reduction of deforestation through the integration of crop-livestock-forest. In the direct operations of the sector, the Bank will invest in the production and use of biofuels and in the reduction of carbon and methane emissions associated with bovine livestock. The Bank will also support increased productivity in the sector through the adoption of new technologies, reducing the pressure to open new production areas.

Among the different activities of the industry, the BNDES will act to promote decarbonization from energy efficiency and use of renewable energies, replacement of raw materials by alternatives of lower intensity of GHG emissions, as well as carbon capture and circular economy initiatives. The improvement of instruments and the promotion of projects aimed at energy efficiency and clean energy, circular economy, and advanced materials, among others, will be among the priorities of the BNDES. The Bank will also act to foster the mining of essential inputs for green economy technologies, such as copper, lithium, nickel and others.

In **sanitation**, the BNDES will promote projects that expand access to services and contribute to reduce social and regional inequalities, invest in actions to capture and use methane, use biogas, and initiatives for zero generation of waste and composting in macro-scale.

## Sectoral mitigation strategies



### ENERGY

- i.** Modernize and decentralize the grid and contribute to carbon neutrality;
- ii.** Support the digitalization, efficiency, diffusion of renewables, modernization of assets, and resilience to the availability of natural resources;
- iii.** Develop new solutions to support distributed generation and energy efficiency;
- iv.** Foster the generation of renewable energy and green hydrogen projects, leveraging the potential of the clean energy grid;
- v.** Foster innovation in clean energy technologies, including nuclear energy;
- vi.** Foster distributed generation for decarbonization of isolated and remote systems;
- vii.** Contribute to the feasibility of pilot projects for energy storage systems;
- viii.** Do not support new generation operations exclusively using coal or oil derived from petroleum and the production of coal destined for thermoelectric plants, without prejudice to other prohibitions foreseen in the Exclusion List;
- ix.** Encourage the decarbonization of production (carbon capture – CCUS, platform electrification, energy efficiency);
- x.** Encourage complementary actions between natural gas, biogas/biomethane, hydrogen and other fuels;
- xi.** Promote CCUS technology in biogas/biomethane activities, which enable negative emissions;
- xii.** Stimulate the production of sustainable and low carbon footprint fuels (green diesel or renewable hydrogenated diesel – HVO, biokerosene – BioQAV or Sustainable Aviation Fuel – SAF, synthetic fuels, green methanol, low carbon hydrogen production) – implementation of biorefineries, expansion/requalification of existing refineries, research and development of new fuels;
- xiii.** Promote synergy and transfer of know-how from the oil and gas (O&G) sector at sea for offshore wind and solar generation, using platform support navigation;
- xiv.** Support conversion of exhausted O&G fields into natural gas or CO<sub>2</sub> storage locations; and
- xv.** Support circular economy actions: reduction of environmental impacts in the decommissioning phase of production fields, adequate destination and dismantling of platforms and their effluents.

## Sectoral mitigation strategies

### LAND USE, LAND-USE CHANGE AND FORESTRY



- i.** Develop and promote actions aimed at the conservation, preservation, reduction of deforestation and enhancement of native forests;
- ii.** Acting in the Legal Amazon in an integrated and systemic way, generating sustainable development and overcoming the challenges of the region;
- iii.** Forest Conservation:
  - a.** Support actions to prevent, monitor and combat illegal deforestation;
  - b.** Support actions aimed at reducing the levels of illegality in the forest chain;
- iv.** Forest Recovery:
  - a.** Support the recovery of native forests, springs and river basins;
  - b.** Foster the land and environmental regularization of rural properties and possessions;
  - c.** Encourage the recovery of degraded pasture and agricultural areas;
- v.** Biodiversity:
  - a.** Contribute to the expansion of the biodiversity conservation and sustainable exploitation agenda, including the forest bioeconomy and its various related activities; and
  - b.** Identify the dependencies and exposure of the BNDES to chains linked to biodiversity.

### AGRICULTURE AND LIVESTOCK



- i.** Promote the sustainability and competitiveness of biofuel and food production, especially climate aspects, such as low-carbon and precision agriculture, stimulating energy and productive efficiency gains;
- ii.** Support reduction of carbon and methane emissions associated with bovine livestock, with greater traceability of the herd, as well as through initiatives for low-carbon agriculture, reduction of gas production in bovine digestion, and reuse of associated methane for the production of biogas;
- iii.** Stimulate innovation and projects of new biofuels (2G ethanol, biomethane, HVO, BioQAV, bio-jet fuel and alcohol-to-jet); and
- iv.** Promote, especially in the Amazon, the Agroforestry System (AFS).

### LOGISTICS AND URBAN MOBILITY



- i.** Promote the use of clean sources, modal integration and resilience;
- ii.** Promote and support urban mobility projects for the implementation of medium and high capacity and low emission systems, with incentives to increase the quality of services (decarbonization, increased energy efficiency, reduction of travel time and costs with accidents) and cycling infrastructure;
- iii.** Encourage electromobility and hybridization of urban mobility; and
- iv.** Encourage the electrification and increase of the railroad logistics network.

### INDUSTRY



- i.** Promote industrial decarbonization through the following fronts: energy efficiency in production processes, exchange of energy sources for renewable sources, exchange of raw materials for less carbon- and/or biological-intensive alternatives, electrification and digitalization, carbon capture and circular economy;
- ii.** Encourage the structuring of production chains related to the technological routes of the green economy;
- iii.** Encourage mining for the exploitation of minerals and metals essential for green economy technologies such as copper, lithium, nickel etc.
- iv.** Support the production chain of bioelectrified vehicles; and
- v.** Support the formulation and dissemination of public policies for vehicular decarbonization, with special emphasis on bioelectrification.

### SANITATION



- i.** Encourage support to projects for the use of biogas and energy generation – capture and use of methane; and
- ii.** Promote actions of the circular economy and zero waste generation and macro-scale composting initiatives.



## Adaptation Strategy

The effects of climate change already cause different socioeconomic impacts and the results of efforts to mitigate climate change will still take time to be observed, making the action fronts for adaptation and increased resilience increasingly relevant. The BNDES will act in line with the National Adaptation Plan (PNA), directing capital to priority adaptation sectors and technologies, including actions with municipalities and states in infrastructure projects and resilient urban development. Also in infrastructure investments, the Bank will expand its financing lines for adaptation, and will include mitigating factors in infrastructure projects, minimizing the effects of physical impacts of climate change such as floods and landslides.

In our strategic planning, we have the following topics related to adaptation:



### ADAPTATION

- i. Act in line with the National Adaptation Plan (PNA), in directing capital to priority adaptation sectors and technologies;
- ii. Support the development and implementation of infrastructure plans focused on the adaptation of municipalities and states, especially in the most vulnerable urban areas;
- iii. Promote projects for urban development with climate resilience aimed at adaptation actions in municipalities and states, focusing on nature-based solutions; and
- iv. Include climate risk mitigants in the modeling of infrastructure projects, in particular the physical risks related to floods and landslides.



# JUST TRANSITION SUPPORT

*The BNDES is a great resource mobilizer for the climate issue. Since 2015, we have invested more than R\$ 116 billion in green economy. If we add social investments,<sup>42</sup> the total resources since 2015 will be R\$ 243.6 billion. In addition, as of September 2022, 41% of our direct lending portfolio was focused on green economy and 68% of it on ESG assets, which add up the green economy and social portfolios.*

<sup>42</sup> The green economy indicator includes the renewable energy and energy efficiency categories, hydroelectric power plants above 30 MW, public passenger transport, freight transport, water and sewage management, solid waste management, forests, agricultural improvements, climate change adaptation and disaster risk management. The social development indicator includes the health, education, productive inclusion, public management, urban and regional development and social responsibility categories. BNDES – BANCO NACIONAL DE DESENVOLVIMENTO ECONÔMICO E SOCIAL. *Taxonomia de sustentabilidade do BNDES: revisão 2021*. Rio de Janeiro: BNDES, 2022. Available at: [https://www.bnades.gov.br/wps/wcm/connect/site/b1906bb0-20a6-468e-bfaa-eb747c13ee4d/BNDES\\_TaxonomiaSustentabilidade\\_site.pdf?MOD=AJPERES&CVID=o8STBoJ](https://www.bnades.gov.br/wps/wcm/connect/site/b1906bb0-20a6-468e-bfaa-eb747c13ee4d/BNDES_TaxonomiaSustentabilidade_site.pdf?MOD=AJPERES&CVID=o8STBoJ). Accessed on: October 28, 2022.

The BNDES is also a precursor in innovative climate actions, such as the management of the Climate Fund, as well as in green funding, being the first financial institution to issue green bonds outside the country in 2017, and also the pioneer in the issuance in the domestic market, in 2020.

To deliver the sector strategies described above, we have several solutions to support the green economy, which include credit, guarantees, services, non-refundables and participations. These solutions are described below, highlighting their general role in addressing environmental and climate challenges, as well as their contribution in each sector.

MORE THAN  
**116 BILLION**  
INVESTED IN  
green economy, since 2015

## FUNDING

In May 2017, the BNDES became the first Brazilian bank to issue green bonds in the international market. The US\$ 1 billion bond has a term of seven years and was listed on the Luxembourg Green Stock Exchange. The funds are intended to finance investments related to new and existing wind and solar energy projects.

In October 2020, the Bank was again a pioneer in launching the first Green Financial Letter in the national market, in the amount of R\$ 1 billion and a two-year term, also to finance investments related to new and existing wind and solar energy projects.

An important advance for future funding happened in April 2021, when the BNDES released its Sustainability Bond Framework, expanding the possibilities of raising the Bank through green, social and sustainable bonds in Brazil and abroad.

The BNDES also makes funding with multilateral organizations, with a current portfolio of approximately US\$ 7.2 billion in active ESG-backed funding contracts (base date of 06.30.2022), with entities such as the Inter-American Development Bank (IDB), Japan Bank for International Cooperation (JBIC), Kreditanstalt für Wiederaufbau (KfW), New Development Bank (NDB) and Agence Française de Développement (AFD), mainly supporting renewable energy projects, energy efficiency, urban mobility and micro, small and medium-sized enterprises (MSME).

FAMILY	PROGRAM, LINE OR PRODUCT	PURPOSE, CONDITIONS AND SOURCES OF RESOURCES	FINANCING ITEMS BY SECTOR/THEME					
			AGRICULTURE AND LIVESTOCK, LAND USE, LAND-USE CHANGE AND FORESTRY	ENERGY	INDUSTRY	LOGISTICS AND URBAN MOBILITY	SANITATION	ADAPTATION
FINANCING AND CREDIT	Climate Fund	Enable projects related to the reduction of GHG emissions and adaptation to climate change. Grants direct financing for the implementation of projects, acquisition of machinery and equipment and technological development related to the theme, with reduced rates and terms of up to 25 years. Uses resources from the Federal Government's Climate Fund.	Projects of replanting of native forests; carbon management and service (for credit generation); and climate-related innovation.	Projects of renewable energy; carbon management and service (purchase of credits from the energy sector); and climate-related innovation.	Projects of improvement of efficiency and sustainability; charcoal; carbon management and service (purchase of credits from the industrial sector); sustainable cities; and climate-related innovation.	Projects of urban mobility; carbon management and service (purchase of credits from the transport sector); sustainable cities; and climate-related innovation.	Projects of solid waste; carbon management and service (purchase of credits from the waste sector); sustainable cities; and climate-related innovation.	Strengthening the resilience and adaptability of states and municipalities to risks related to climate and natural disasters; production of efficient machinery and equipment; forest recovery and protection of springs.
	Climate Fund – Efficient Machinery and Equipment	Encourage the use of machines and equipment with higher energy efficiency indexes or that contribute to the reduction of GHG emissions. It uses resources from the Federal Government's Climate Fund to grant financing directly with the BNDES and indirectly through accredited financial agents.	Electric or hybrid trucks; efficient machinery and equipment; photovoltaic generating systems; wind turbines up to 110 kw.	Photovoltaic generating systems; wind turbines up to 110 kw; engines powered by biogas, inverters or frequency converters, solar collectors/ heaters and LED lighting fixtures for public lighting; installation services of the goods referred to in the items above, except LED lighting fixtures for public lighting (observing the maximum limit of 30% of the total amount financed).	Machines and equipment registered in the Brazilian Labeling Program (PBE) or with Procel seal. In the case of machinery and equipment for which PBE provides the energy efficiency rating, only those of classification A or B shall be accepted.	Buses and trucks, electric or hybrid, with traction energy provided by electrical devices or by combination of electrical devices and internal combustion engine; and ethanol-powered buses.	Biogas power generator sets; efficient machinery and equipment.	N/A
	BNDES ESG Credit	Encourage companies to advance in their ESG performance. Grants direct financing with free credit – without the need for an investment project – to companies that commit to improving their sustainability commitments and indicators. Those that meet the minimum compensation and achieve the social goals and/or the stipulation by the program will have a reduction in the interest rate of up to 30%.	Wood chain facing reforestation.	Manufacturers of equipment for the renewable energy and energy efficiency chain.	Mining companies, steel and small internet providers.	Manufacturers of low-carbon vehicles.	Manufacturers of waste treatment equipment (gases and solids) and biodigesters.	N/A

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FAMILY	PROGRAM, LINE OR PRODUCT	PURPOSE, CONDITIONS AND SOURCES OF RESOURCES	FINANCING ITEMS BY SECTOR/THEME					
			AGRICULTURE AND LIVESTOCK, LAND USE, LAND-USE CHANGE AND FORESTRY	ENERGY	INDUSTRY	LOGISTICS AND URBAN MOBILITY	SANITATION	ADAPTATION
FINANCING AND CREDIT	BNDES Finem – Environment	Encourage companies to carry out environmental projects. The line comprises BNDES Finem, the BNDES's main solution for financing projects. It provides financing for initiatives to recover and conserve ecosystems and biodiversity, reduce the use of natural resources and recover degraded areas with different conditions. Its conditions depend on the types of projects, but, in general, the minimum amount of financing is R\$ 40 million (for energy efficiency the minimum is R\$ 20 million) and the total term is limited to twenty years (for buses and trucks with low carbon traction technology, it is 34 years).	Investments in recovery and conservation of ecosystems and biodiversity; eco-efficiency; products or processes that use inputs from renewable sources as raw materials, or that cause a lower environmental impact (excluding sugarcane); recovery of degraded, mined or contaminated areas.	Investments in products or processes that use inputs from renewable sources as raw materials or that cause less socioenvironmental impact; purchase and production of buses and trucks with low-carbon traction technologies, and machines and equipment with higher energy efficiency indexes or that contribute to reducing GHG emissions; reduction of energy consumption and increased efficiency of the domestic energy system.	Investments in products or processes that use inputs from renewable sources as raw materials or that cause less socioenvironmental impact; purchase and production of buses and trucks with low-carbon traction technologies, and machines and equipment with higher energy efficiency indexes or that contribute to reducing GHG emissions; reduction of energy consumption and increased efficiency of the domestic energy system.	Investments in purchase and production of buses and trucks with low carbon traction technologies, and machinery and equipment with higher energy efficiency indexes or that contribute to reducing GHG emissions; increase the capacity of companies to reduce and mitigate environmental risks.	Investments in eco-efficiency and products or processes that use inputs from renewable sources as raw materials, or that cause less environmental impact (excluding sugarcane); reduction of energy consumption and increased efficiency of the domestic energy system.	Recovery of degraded areas; reduction of the intensity of the use of natural resources; maintenance and recovery of ecosystems and biodiversity; management and training systems.
	BNDES Parks and Forests	Enable the implementation of parks and forests projects. It offers direct financing to investment projects within the scope of public concessions of natural or urban parks and forest concessions, with a minimum financing value of R\$ 20 million and a maximum value of R\$ 80 million per economic group. Total term of up to 25 years.	Recovery of environmental liabilities; recovery and conservation of ecosystems and biodiversity; reduction of the use of natural resources.	N/A	N/A	N/A	N/A	N/A
	ABC Program	Stimulate projects that contribute to the reduction of environmental impacts caused by agricultural and livestock activities. It offers indirect financing, through partner financial agents, with reduced rates and terms ranging from 10 to 12 years.	Implementation and maintenance of açai, cocoa, olive and walnut forests; recomposition and maintenance of permanent preservation or legal reserve areas; no-tillage; pasture recovery.	N/A	N/A	N/A	N/A	N/A

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FAMILY	PROGRAM, LINE OR PRODUCT	PURPOSE, CONDITIONS AND SOURCES OF RESOURCES	FINANCING ITEMS BY SECTOR/THEME					
			AGRICULTURE AND LIVESTOCK, LAND USE, LAND-USE CHANGE AND FORESTRY	ENERGY	INDUSTRY	LOGISTICS AND URBAN MOBILITY	SANITATION	ADAPTATION
FINANCING AND CREDIT	BNDES Finame – Low Carbon	Encourage the use of equipment with less environmental and climate impact. The line comprises BNDES Finame, the BNDES's main solution for financing machinery and equipment. It offers differentiated conditions for financing equipment that contributes to reducing GHG emissions.	Acquisition and commercialization of electric or hybrid trucks; efficient machinery and equipment; photovoltaic generating systems; wind turbines up to 110 kw.	Acquisition and commercialization of photovoltaic generating systems classified as type A; wind turbines up to 110 kw; solar heaters/collectors and installation services.	Acquisition and commercialization of machines and equipment with higher energy efficiency indexes or that contribute to the reduction of GHG emissions.	Acquisition and commercialization of buses and electric trucks, hybrids or other models with electric traction; buses and trucks exclusively powered by biofuel; gas for heavy-duty vehicles and their respective supply equipment and other machinery and equipment; items accredited by the BNDES under the specific low-carbon mobility methodology.	Acquisition and commercialization of biogas power generating groups; efficient machinery and equipment.	N/A
	BNDES RenovaBio	Stimulate the certification of biofuel producers and increase the energy efficiency of the agroindustrial sector, meeting the objectives of RenovaBio public policy. It is a subprogram of BNDES Finem, which provides for the possibility of reducing the basic contractual remuneration when improving the client's energy efficiency score.	Direct support linked to environmental, social and/or governance performance goals for the production of biofuels certified under the RenovaBio policy.	Direct support linked to environmental, social and/or governance performance goals for the production of biofuels certified under the RenovaBio policy.	N/A	N/A	N/A	N/A

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FAMILY	PROGRAM, LINE OR PRODUCT	PURPOSE, CONDITIONS AND SOURCES OF RESOURCES	FINANCING ITEMS BY SECTOR/THEME					
			AGRICULTURE AND LIVESTOCK, LAND USE, LAND-USE CHANGE AND FORESTRY	ENERGY	INDUSTRY	LOGISTICS AND URBAN MOBILITY	SANITATION	ADAPTATION
FINANCING AND CREDIT	BNDES Finem – sectoral lines	Enable companies to carry out investment projects in the country. The lines make up BNDES Finem, the main solution for financing the BNDES's projects. They offer financing for investment projects, public or private, aimed at generating and increasing productive capacity, in the various sectors of the economy, with conditions that vary.	Investments in production, storage and processing of human food and animal feed.	Investments in expansion and modernization of energy generation infrastructure from renewable and thermoelectric natural gas sources in the country; implementation, expansion, modernization, construction and assembly of infrastructure and/or services for the flow and transport by pipelines, liquefaction and regasification terminals of natural gas, biogas, biomethane; implementation, expansion, modernization, construction and assembly of infrastructure and/or services for natural gas processing and compression units and in natural gas storage facilities and services and of natural gas liquids; implementation, expansion or modernization of infrastructure and/or services for the distribution of piped natural gas, compressed natural gas and liquefied natural gas and in the natural gas supply network for vehicles; implementation, expansion, modernization, construction, integration and assembly of facilities and/or services in activities for the development of natural gas production, as well as investments in deactivation of end-of-life production systems (decommissioning); public or private projects aimed at generating and increasing capacity production in the various sectors of the economy; implementation, expansion, modernization, construction, integration and assembly of facilities and/or services for biorefinery, for the production of synthetic fuels, hydrogen and bioproducts, and for fuel storage.	N/A	Investments in projects of public interest aimed at urban mobility; expansion and modernization of the country's logistics infrastructure (highways, railways, waterways, ports, airports and logistics operator terminals).	Investments in public or private projects aimed at the universalization of access to basic sanitation services and the recovery of environmentally degraded areas.	Sectoral lines allow the use of resources in activities that enable adaptation to the new climate scenario and the challenges of a less GHG-emitting economy.

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FAMILY	PROGRAM, LINE OR PRODUCT	PURPOSE, CONDITIONS AND SOURCES OF RESOURCES	FINANCING ITEMS BY SECTOR/THEME					
			AGRICULTURE AND LIVESTOCK, LAND USE, LAND-USE CHANGE AND FORESTRY	ENERGY	INDUSTRY	LOGISTICS AND URBAN MOBILITY	SANITATION	ADAPTATION
FINANCING AND CREDIT	BNDES Credit Services 4.0	Stimulate the use and development of technological services related to industry 4.0. It offers financing for contracting technological services, accredited by the BNDES, associated with the optimization of production, the feasibility of advanced manufacturing projects and the implementation of smart city solutions and other similar ones.	Internet of Things (IoT); digitalization; productive and energy efficiency.	Productive and energy efficiency.	Lean manufacturing; advanced manufacturing; Internet of Things (IoT); technological development of new products and processes; basic industrial technologies; and productive and energy efficiency.	N/A	Internet of Things (IoT); digitalization; productive and energy efficiency.	N/A
	BNDES Debentures in Public Offerings	Encourage corporate business plans and infrastructure projects with incentives for ESG practices. Subscription of debentures by the BNDES for investments: (i) in renewable energy, energy efficiency, urban mobility, solid waste, water, sewage, health, education and forest management; (ii) that promote social inclusion or low-carbon economy; or (iii) that assist in the achievement of the SDGs.	Forest management.	Renewable energy; energy efficiency; investments promoting low-carbon economy.	Industry 4.0; expansion of the energy efficiency of the processes; use of biomass and charcoal as fuels.	Urban mobility.	Solid waste.	N/A
SHAREHOLDINGS	Investment funds	Foster the venture capital industry; support companies and projects that may result in development for the country; induce best management and corporate governance practices; and act in partnership with other investors. It includes funds to support companies of all sizes, operating in various sectors related to development, prioritizing environmental and social issues.	Support for small-, medium- and large-sized companies operating in the sector through different credit funds.	Support for small-, medium- and large-sized companies operating in the sector through different credit funds.	Support for small-, medium- and large-sized companies operating in the sector through different credit funds.	Support for small-, medium- and large-sized companies operating in the sector through different credit funds.	Support for small-, medium- and large-sized companies operating in the sector through different credit funds.	Support for small-, medium- and large-sized companies operating in the sector through different credit funds.

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FAMILY	PROGRAM, LINE OR PRODUCT	PURPOSE, CONDITIONS AND SOURCES OF RESOURCES	FINANCING ITEMS BY SECTOR/THEME					
			AGRICULTURE AND LIVESTOCK, LAND USE, LAND-USE CHANGE AND FORESTRY	ENERGY	INDUSTRY	LOGISTICS AND URBAN MOBILITY	SANITATION	ADAPTATION
SECTORAL GUARANTEE FUNDS	FG Energia	Encourage the implementation of energy efficiency projects, promoting the reduction of GHG emissions and increasing the productivity/competitiveness of small and medium-sized Brazilian companies through the provision of guarantees. For the guarantee claim, it is necessary for the company to make an estimate of the energy savings generated by its project (the BNDES website provides an electronic questionnaire for this). By proving the savings, the company is able to request a guarantee for lines from the BNDES or other financial agents.	N/A	Energy efficiency projects, including the replacement of fossil fuels by renewables.	N/A	N/A	Energy efficiency projects, including the replacement of fossil fuels with waste.	N/A
	Amazon Guarantee Program	Expand access to credit for the development of forest bioeconomy activities in the North region. Through the program, the BNDES grants partial guarantee to assumed pecuniary obligations, aiming to expand access to credit for activities related to the productive chains of Brazilian biodiversity that value the standing forest, especially those carried out by family farmers, rural family entrepreneurs, and traditional communities and settlements.	Timber and non-timber forest management; aquaculture and fishing arrangements; alternative ecologically and agroforestry-based production systems; and community-based tourism.	N/A	N/A	N/A	N/A	N/A
SERVICES	BNDES Project Structuring	Support public entities, aiming to promote a partnership with the private sector for the execution of projects of public interest, other privatization measures or financial solutions that enable the participation of private capital in public investments. This support can be given through coordination, direct execution and assistance to the performance of specialized technical services, among other initiatives that enable the conclusion of partnership contracts with the private sector.	Preparation of studies for structuring concessions of state and federal parks in protected areas, with a focus on ecotourism; visitation, environmental education and generation of resources for preservation; preparation of studies for structuring forest concessions for the practice of sustainable management (includes exploration of timber, non-timber products and services).	N/A	N/A	Preparation of studies for structuring highway, railroad and urban mobility concessions.	Preparation of studies for structuring sanitation concessions.	N/A

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FAMILY	PROGRAM, LINE OR PRODUCT	PURPOSE, CONDITIONS AND SOURCES OF RESOURCES	FINANCING ITEMS BY SECTOR/THEME					
			AGRICULTURE AND LIVESTOCK, LAND USE, LAND-USE CHANGE AND FORESTRY	ENERGY	INDUSTRY	LOGISTICS AND URBAN MOBILITY	SANITATION	ADAPTATION
NON-REFUNDABLES	Amazon Fund	Encourage actions to prevent, monitor and combat deforestation, and promote the conservation and sustainable use of the Legal Amazon. It also supports the development of deforestation monitoring and control systems in the rest of Brazil and other tropical countries.	Management of public forests and protected areas; environmental control, monitoring and inspection; sustainable forest management; economic activities developed from the sustainable use of vegetation; ecological and economic zoning, territorial planning and land regularization; conservation and sustainable use of biodiversity; and recovery of deforested areas.	N/A	N/A	N/A	N/A	Non-reimbursable support to projects in the areas of public forest management and protected areas; environmental control, monitoring and inspection; sustainable forest management; economic activities developed from the sustainable use of vegetation; ecological and economic zoning, territorial planning and land regularization; conservation and sustainable use of biodiversity; recovery of deforested areas. Support for projects to strengthen primary responses and land use planning are also supported.
	BNDES Socioenvironmental Fund	Promote social inclusion. It prioritizes projects that seek to provide significant improvement in the living conditions of low-income populations. It offers non-refundable support for social investments in the areas of employment and income generation, health, education, environment and/or linked to regional and social development. The fund offers support in the modalities of "continued support", being able to receive requests for support at any time; and "public selection, promotion and award", in which it fosters projects of specific themes, from notices or promotion plans launched by the BNDES.	Projects, investments or actions that seek to mitigate and adapt to climate change encompassing, but not limited to, environmental regularization, monitoring and control of deforestation of Brazilian biomes, development of forest-based production chains and projects for the recovery, conservation and preservation of the environment.	N/A	N/A	N/A	N/A	Projects, investments or actions that seek to mitigate and adapt to climate change, including, but not limited to, environmental regularization, monitoring and control of deforestation of Brazilian biomes, development of forest-based production chains, recovery, conservation and preservation of the environment projects.

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