



GREEN BONDS REPORT

2022

RESOURCE USE
DISCLOSURE



USE OF RESOURCES

TOTAL (IN THOUSANDS)
BRL 1,134.767 USD 223.516

Check out the details of the initiatives on the following links for each project.

2022

JANUARY TO DECEMBER
USD 5.0769*

NATIVE FOREST RESTORATION AND CONSERVATION OF BIODIVERSITY

(IN THOUSANDS)

BRL 7,088

USD 1,396

CONTROL OF INVASIVE EXOTIC SPECIES

BRL 2,607

USD 514

MATAS LEGAIS PROGRAM

BRL 1,053

USD 207

MATAS LEGAIS SEEDLINGS PROGRAM

BRL 69

USD 14

SOCIAL FORESTS

BRL 202

USD 40

CRESCER FLORESTAL PROGRAM

BRL 211

USD 41

BIODIVERSITY MONITORING PROGRAM

BRL 712

USD 140

ENVIRONMENTAL PROTECTORS PROGRAM

BRL 50

USD 10

ECOLOGICAL PARK

BRL 2,064

USD 407

KLABIN CAIUBI PROGRAM

BRL 121

USD 24

ADAPTATION TO CLIMATE CHANGE

(IN THOUSANDS)

BRL 6,554

USD 1,291

ASSET SECURITY – SC

BRL 6,554

USD 1,291

*Average of the U.S. dollar in the period.

SUSTAINABLE FORESTRY MANAGEMENT

(IN THOUSANDS)

BRL 1,076,962

USD 212,130

PURCHASE OF WOOD

BRL 1,038,947

USD 204,642

FORESTRY

BRL 33,335

USD 6,566

FARMER CERTIFICATION

BRL 3,928

USD 774

FORESTRY CERTIFICATION

BRL 752

USD 148

RENEWABLE ENERGY

(IN THOUSANDS)

BRL 10,088

USD 1,987

RENEWABLE ENERGY GENERATION

BRL 10,088

USD 1,987

PRODUCTS THAT ARE ECO-EFFICIENT AND/OR ADAPTED TO THE CIRCULAR ECONOMY, PRODUCTION TECHNOLOGIES AND PROCESSES

(IN THOUSANDS)

BRL 30,816

USD 6,070

ELECTROSTATIC PRECIPITATOR

BRL 6,908

USD 1,361

ENVIRONMENTAL STUDIES

BRL 4,488

USD 884

IMPROVEMENTS IN ENVIRONMENTAL PERFORMANCE MANAGEMENT

BRL 6,031

USD 1,188

IMPROVEMENTS IN SOLID WASTE MANAGEMENT

BRL 1,946

USD 383

AEROLITH STUDY

BRL 86

USD 17

INNOVATION PROJECTS – BIOREFINERY

BRL 1,340

USD 264

INNOVATION PROJECTS – BARRIERS

BRL 1,492

USD 294

CARBON CREDIT
PROJECT STUDIES

BRL 167
USD 33

ANALYSIS OF CHIPPER RENOVATION
SCENARIOS

BRL 8,357
USD 1,646

CLEAN TRANSPORTATION

(IN THOUSANDS)

BRL 20

USD 4

CHARGING STATION FOR ELECTRIC
TRUCKS

BRL 20
USD 4

WASTE AND WASTEWATER
MANAGEMENT

(IN THOUSANDS)

BRL 2,000

USD 394

INSTALLATION OF COOLING TOWERS IN ETPS

BRL 2,000
USD 394

SUSTAINABLE WATER MANAGEMENT

(IN THOUSANDS)

BRL 1,239

USD 244

STUDIES FOR
RIVER WITHDRAWAL REPLACEMENT

BRL 134
USD 26

INSTALLATION OF A WATER RECOVERY
SYSTEM FROM THE ASH CONVEYORS

BRL 246
USD 49

INSTALLATION OF A TURBOPUMP WATER
RECOVERY SYSTEM

BRL 75
USD 15

WATER RECOVERY FROM
FIBER PRESSING

BRL 192
USD 38

INSTALLATION OF RAINWATER REUSE AND
OSMOSIS SYSTEM

BRL 592
USD 117



A tall, slender Araucaria tree stands prominently in the center of a dense forest. The tree has a thick, columnar trunk and a canopy of horizontal branches with clusters of green needles. The background shows a vast expanse of forest stretching to the horizon under a blue sky with scattered white clouds. A dark purple rectangular box with a green border is overlaid on the lower part of the image, containing the word 'CONTENTS' in white, bold, uppercase letters.

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A young southern tiger cat (Leopardus guttulus) is perched on a tree branch in a forest. The cat has a brown and black spotted pattern and is looking down. The background is filled with green foliage and brown leaves.

PRESENTATION

Southern tiger cat (*Leopardus guttulus*) at the Klabin Ecological Park



Aerial view (partial) of the Klabin Ecological Park

PRESENTATION

Once again, Klabin reports on the use of green bond resources, reinforcing the Company's commitment to transparency and advancing steadily towards a more sustainable operation. This document is part of the Sustainable Finance page, launched in 2022 on the [ESG Dashboard](#), which contains all the progress reports on financial instruments linked to sustainability. [The Sustainability Report](#) complements the company's ESG accountability platform.

This material presents to the reader the application of the funds with audited financial data since the first issuance of the green bonds. Additionally, we provide an overview how ESG is integrated into the Company's long-term strategy, with data related to environmental benefits also verified by a specialized auditor.

In 2022, Klabin maintained its trajectory toward the fulfillment of its sustainability agenda for 2030, the Klabin Sustainable Development Goals (KSDGs), aligned with the global agenda of the United Nations (UN). Significant accomplishments highlight the Company's position among those that stand out for their efforts in managing the impacts of their activities. Among them is the presence, for the second year in a row, on CDP's Triple A List for the Water Management, Forestry and Climate Change programs, positioning Klabin among the leading companies in the transition to the new sustainable economy.

Reinforcing this recognition is the Company's third consecutive year on the Dow Jones Sustainability Index Global list, which assesses and highlights world-leading companies in ESG performance, as well as our tenth consecutive year on B3's Corporate Sustainability Index (ISE), which brings together the shares of companies with a high degree of commitment to sustainability in business and the country.

Furthermore, Klabin was listed in The Sustainability Yearbook 2022, which gathers the leading companies in sustainability in their segments. To make up the list, S&P Global selects 30% of the best-rated companies and, out of those, 15% in each industry.

**KLABIN IS THE ONLY COMPANY
IN LATIN AMERICA TO PLACE IN THE
TOP 1% OF THE RANKING BASED ON
THE S&P GLOBAL ESG SCORES**

Klabin participated in important events throughout 2022, such as the United Nations General Assembly, in New York (USA), in September. As we are members of the CFO Task Force for the Sustainable Development Goals (SDGs), we had the opportunity to have the only Brazilian CFO invited to the forum, participating in a panel about targets linked to the SDGs. Another highlight was the participation of Klabin's CEO, Cristiano Teixeira, who joined the Climate Justice panel on "SDGs in Brazil".



The solid sustainable finance strategy, in which the Sustainability-Linked Bond (SLB) case is inserted, earned Klabin the Golden Tombstone award from the Brazilian Institute of Finance Executives (IBEF), evaluated as one of the most important fundraising financial operations in Brazil. We also participated in the 27th United Nations Climate Change Conference, COP27, as representatives of private business leaders in Latin America.

The company's demonstrated commitment to sustainability propitiates its increased exposure to green financial resources. They include: the issuance of two green bonds; repap of Notes 2049 – attested by a Second-Party Opinion (SPO) issued by Sustainalytics; the issuance of the Sustainability-Linked Bond in January 2021, in the amount of USD 500 million and maturing in 2031; and the hiring of the Revolving Credit Facility (RCF), a revolving credit line in the amount of USD 500 million and maturing in October 2026. This list also includes the recent renegotiation of the agreement with IDB Invest, IFC, and JICA¹ in the total amount of USD 800 million and maturing in 2029 and 2032, resulting from the amendment to the financing agreement linked to the execution of the Puma II Project. These are financing lines characterized as Sustainability-Linked, because their cost is conditioned to the annual performance of an environmental indicator.

With the RCF, SLBs, and the IDB/IFC/JICA agreement renegotiation, Klabin commits to achieving three ESG goals by 2030, with interim targets in 2025 and 2027. The associated targets relate to industrial solid waste, reduction of specific water consumption in the production process, and reinsertion of threatened or endangered species into the ecosystems where we operate. These are three of the 23 public goals that make up the KSDGs and are enhanced through these sustainable financial operations.

With 30% of the debt associated with Klabin's sustainability performance, we reaffirm our leadership in the segment of debt securities linked to sustainable targets, integrating the financial strategy with Klabin's 2030 Agenda and the Company's expansion. By publicizing our initiatives and accounting for the application of green bond funds, we hope to contribute to the decision making of capital market participants and other stakeholders. We reinforce, once again, our commitment to sustainable performance that contributes to the prosperity of the planet.

Marcos Paulo Conde Ivo

Chief Financial and Investor Relations Officer

¹Institutions recognized globally for supporting sustainable companies and projects that aim to achieve financial results and maximize economic, social and environmental development.



Biodiversity Circuit, Klabin Ecological Park

IN THIS REPORT, KLABIN DETAILS THE USE OF GREEN BOND RESOURCES IN THE ALLOCATION PERIOD FROM JANUARY 2022 TO DECEMBER 2022.

The funds were earmarked for initiatives that meet the eligibility criteria for issuing green bonds, respecting the four pillars that make up the Green Bonds Principles.

The investments presented in this report are aligned with Klabin's Sustainable Development Goals (KSDGs), from Klabin's 2030 Agenda which, in turn, are in line with the United Nations' Sustainable Development Goals. This agenda formalizes the Environmental, Social and Governance (ESG) aspects fundamental to the Company and to the global urgencies of society and the planet.

The initiatives detailed here indicate the origin of the amount allocated (Green Bond 2027/Green Bond 2049) and also reference the categories of the Green Bond Transparency Platform¹ under which they fall.

To learn more about Klabin's green bond issuance, as well as the resource use history, refer to the Management Report on Eligible Projects (Appendix A), the Resource Use Statement (Appendix B) and the Assurance Statement at the end of this report.

KLABIN'S GREEN BOND ISSUANCES



¹The Green Bond Transparency Platform was developed by the Inter-American Development Bank (IDB), which supports the harmonization and standardization of green bond reporting in Latin America and the Caribbean by providing references for the dissemination of best practices.



NATIVE FOREST RESTORATION AND CONSERVATION OF BIODIVERSITY

Scaly-headed parrot (*Pionus maximiliani*), at the Klabin Ecological Park



ACTIONS FOR NATIVE
FOREST RESTORATION
AND CONSERVATION
OF BIODIVERSITY.

USD, in thousands

1,396

INVESTED IN INITIATIVES AND
PROJECTS IN THE PERIOD



30 PIPING GUAN
INDIVIDUALS, AN ENDANGERED
SPECIES ON THE NATIONAL
LEVEL AND EXTINCT LOCALLY,
WERE RELEASED IN A PROJECT
FOR REINTRODUCTION
INTO THE WILD



16 MUNICIPALITIES
WERE BENEFITED BY THE MATAS
LEGAIS PROGRAM IN PARANÁ
AND SANTA CATARINA

BIODIVERSITY AND FOREST CONSERVATION AND RESTORATION

NATIVE FOREST RESTORATION AND CONSERVATION OF BIODIVERSITY



Mosaic forest management in Paraná

USD, IN THOUSANDS

1,396

**INVESTED
IN THE PERIOD**

Klabin was one of the first companies to adopt forestry management in a mosaic format, which mixes planted forests and conserved native forests, increasing the forest productivity index. Ecological corridors formed using this technique allow the transit of animals in large areas, contributing to the preservation of fauna and flora and the conservation of water resources. The Company develops a broad biodiversity research and conservation program, promoting monitoring in its forests

and helping to ensure the survival of endangered species such as the pygmy brocket, howler monkey and puma.

Of Klabin's total area, approximately 46% corresponds to planted areas, while 42% of the land is allocated to the conservation and maintenance of biodiversity. Klabin's RPPNs are located in the states of Paraná and Santa Catarina.

Considered areas with high biodiversity value, they are conservation units dedicated exclusively to scientific studies,

environmental protection and water resource preservation, contributing to the conservation of biodiversity in the Atlantic Forest biome. At the Serra da Forofa Complex RPPN, in Santa Catarina, the Center for Nature Interpretation, inaugurated in 2019, reinforces this action front.

Divided between Permanent Preservation Areas (APPs), Legal Reserves (RLs and Private Natural Heritage Reserves (RPPNs) including the Klabin Ecological Park (PEK)

Green bond resources allocated for restoration and conservation from January to December 2022 were applied in the following initiatives:

MATAS LEGAIS PROGRAM

Promoted in partnership with the Association for the Preservation of the Environment and Life (Apremavi), the Matas Legais Program instructs small and medium-sized rural farmers in Paraná and Santa Catarina to act in a more efficient, profitable and environmentally-friendly manner on their properties, through rural property landscape planning actions, conservation, environmental education and forestry development. It also encourages the practice of forestry actions using planted forests, the enrichment of secondary forests, and the recovery of riparian forests, supporting the conservation of water sources.

MATAS SOCIAIS PROGRAM – PLANNING SUSTAINABLE PROPERTIES

A partnership between Klabin, Apremavi and Sebrae, the Matas Sociais Program – Planning Sustainable Properties helps rural farmers in Paraná and Santa Catarina in the adaptation to environmental legislation, recovery of degraded areas, conservation of forest remnants, and diversification of income sources.

Through the planting of seedlings, demarcation of Legal Reserves and Permanent Preservation Areas, and also the recovery of springs, the program has achieved important results in the preservation of local biodiversity, in addition to having strengthened family agriculture and cooperativism among the farmers assisted.

EXOTIC SPECIES CONTROL

This covers the control of exotic species dispersion in native areas, contributing to the recovery of degraded areas in the forest restoration process. The work is performed in the Klabin forests in Paraná and Santa Catarina by field teams that hike across the areas and remove the exotic trees by mowing and cutting.

ONGOING BIODIVERSITY MONITORING PROGRAM

Green bond funds financed maintenance activities for the program developed by Klabin, which aims to verify the impacts of forest management on the behavior of species and adopt prevention and mitigation measures.

The program is run in Parana, Santa Catarina and Sao Paulo.

The results of the monitoring conducted (see indicators in the table at the end of the text) demonstrate, in addition to new records, the permanence and identification of endangered species in Klabin's areas. Biodiversity monitoring also allows for further learning and constant updating of biological wealth in the monitored areas, recognizing the permanent species for the farms over time and allowing the identification of maintained conservation in Areas of High Conservation Value (AAVCs).

KLABIN ECOLOGICAL PARK

Klabin runs an Ecological Park on the Monte Alegre Farm, in Telêmaco Borba (PR), dedicated to conservation and to studying the behavior of endangered species, promoting their reproduction and reintroduction into the environment. The site also houses wild animals at risk and unable to return to their natural habitat, such as those hit by vehicles on local roads. Created in the 1980s, about 180 specimens from 50 different species live in the Park, which, since 2014, also acts as a rehabilitation center for wild animals.

With an expansive area of 9,852 hectares, 91.6% of which consist of natural forests, the location has a significant concentration of flora and fauna specimens important to biodiversity, in addition to Areas of High Conservation Value.

The allocated green bond resources were used for the conservation of the park's structures, the cost of the technical team dedicated to the animals, and to the continuity of the environmental preservation projects. These include the project to reintroduce the piping guan (Aburria jacutinga), a species threatened with extinction at the state, national, and global levels, which in 2022 achieved a major milestone: the release of ten individuals, after an adaptation period, in the Klabin Ecological Park's Atlantic Forest reserve.

Another milestone in 2022 was the reopening of the Park to the community after a period of renovations. The new visitation structure, which includes 800 meters of trails,

designed to offer an inclusive experience for people with disabilities, was also the result of green bond resources, with costs included in this report.

ENVIRONMENTAL EDUCATION INITIATIVES FOCUSED ON THE CONSERVATION OF BIODIVERSITY

Growing Up Project

Conducted in partnership with Sesi, this project involves continuous training of direct and indirect employees of Klabin’s forestry operations on environmental issues, health, family management, quality of life and professional growth, among other topics.

Environmental Protectors

Since 2005, Klabin has supported the Protetores Ambientais Program, an initiative of the Environmental Military Police of Santa Catarina, which aims to train pre-adolescents to act as multipliers in environmental education. In 2020, 60 students were trained in the municipality of Lages.

So far, 17 classes have already been involved in the program across several municipalities in the Company’s operating region.

Klabin Caiubi Program

This program focuses on training teachers to disseminate concepts of ecological awareness and contribute to the formation of citizens aware of their responsibilities to the environment.

The initiative is supported by municipal administrations in the cities where it is held, institutions and professional partners.

Klabin has been promoting the Program in Parana since 2001 and began activities in Santa Catarina in 2007. Since 2019, it has been conducted in communities near the corrugated board plants in Feira de Santana (BA). In the period of January to December 2022, green bond resources were allocated and editions adapted to the remote teaching format in the municipalities of Lages, Correia Pinto, Otacílio Costa, Petrolândia and Monte Carlo in Santa Catarina; and in Paraná, in Telêmaco Borba, Ortigueira, Imbaú and Tamarana.

Over the 20 years of Caiubi's existence, 6,527 educators have been trained, 499,514 students benefited and 1,804 schools assisted by the initiative.



Araucária Trail

Located in the municipality of Correia Pinto (SC), in the vicinity of Klabin operations, the Araucária Trail is 1,260 meters long and is interspersed with the native forest of the company's forest areas. Since 2007, its purpose has been to receive teachers and students who participate in the Caiubi Program, in addition to the general public. Visitors receive information of an environmental nature about Klabin and its social and environmental actions. So far, more than 5,000 visitors have already visited the trail.



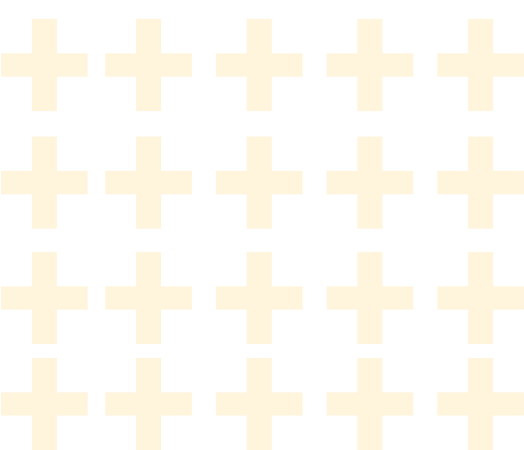
Clinical veterinary care, Klabin Ecological Park

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Matas Legais Program		
Number of native species seedlings donated*	January/2022 to December/2022	65,894 seedlings in PR and 85,591 seedlings in SC
Areas delineated as Legal Reserves and Permanent Preservation Areas (hectares)	January/2022 to December/2022	2,648.3 (total hectares in PR and SC)
Social Forests		
Number of municipalities benefited by the Matas Sociais Program	January/2022 to December/2022	16 municipalities, 11 in PR and 5 in SC
Number of native species seedlings donated*	January/2022 to December/2022	41,714 seedlings in PR and 8,983 seedlings in SC
Areas delineated as Legal Reserves and Permanent Preservation Areas	January/2022 to December/2022	154.2 hectares in PR and 2.04 hectares in SC
Number of springs registered for conservation/restoration	January/2022 to December/2022	74 in PR and 18 in SC
Exotic species control		
Areas covered by exotic species control activities (hectares)	January/2022 to December/2022	9,839.25 hectares in PR and 5,738.12 hectares in SC
Biodiversity continuous monitoring program		
Fauna and flora species identified	January/2022 to December/2022	861 species of fauna, 715 of which have conservation status recognized by the International Union for Conservation of Nature (IUCN) and, of these, 26 are endangered 1,968 species of flora, 526 of which have conservation status recognized by the IUCN and, of these, 39 are endangered (data from PR, SC and SP)
Klabin Ecological Park		
Births of reproduced animal species	January/2022 to December/2022	6 individuals, 4 of which are vinaceous-breasted amazon parrots (<i>Amazona vinacea</i>) and 2 brown howler monkeys (<i>Alouatta guariba</i>). All are on the IUCN Red List of Threatened Species

*Indicators aligned with the Klabin Sustainable Development Goals (KSDGs). Learn more on the ESG Dashboard.

Endangered animals, according to the IUCN Red List	January/2022 to December/2022	10% of endangered species, considering the total number of species in the herd and sheltered animals (101 species, 10 endangered)
Assistance actions for wild animals	January/2022 to December/2022	More than 2,000 actions (rescue, management, release, environmental enrichment, road accidents, clinical care, among others)
Endangered species contemplated in reintroduction actions and/or population reinforcement	January/2022 to December/2022	2 species: <i>Aburria jacutinga</i> and <i>Amazona vinacea</i> , both undergoing a population strengthening process
Crescer [Growing Up] Project		
Number of participants	January/2022 to December/2022	9,079 in PR and 3,364 in SC
Environmental projects		
Students benefited/classes graduated	January/2022 to December/2022	Training of 42 students in the municipality of Lages (SC)

*Indicators aligned with the Klabin Sustainable Development Goals (KSDGs). Learn more on the [ESG Dashboard](#).





SUSTAINABLE FORESTRY MANAGEMENT



FORESTRY, PURCHASE OF WOOD
AND RESPONSIBLE MANAGEMENT
MICROPLANNING

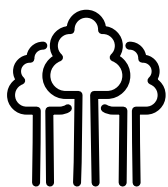
USD, in thousands

212,130 INVESTED IN INITIATIVES AND
PROJECTS IN THE PERIOD

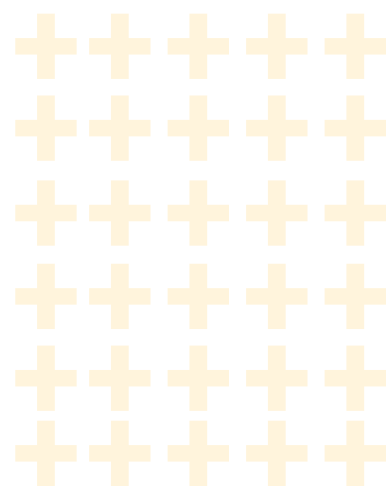


ABOUT
50%

OF THE TOTAL TIMBER DESTINED FOR
PRODUCTION IS ACQUIRED FROM
THIRD-PARTY FORESTS



MORE THAN
216,000
HECTARES
OF MANAGED AREA
IN FORESTRY
ACTIVITIES



FORESTRY

SUSTAINABLE FOREST MANAGEMENT



Pine seedlings at the Klabin Nursery in Santa Catarina

Klabin’s forestry activities, conducted throughout the year, had green bond funds allocated from January to December 2022. Examples of the benefited activities include providing seedlings for planting forests, preparing the soil, and fighting leaf-cutting ants, as well as planting,

replanting, fertilization and cultural treatments. The main purpose of this work is to maintain the planted forests to ensure the supply of timber to the industrial units in a sustainable manner and without harming associated natural ecosystems.

USD, IN THOUSANDS

6,566
INVESTED
IN THE PERIOD

PERFORMANCE INDICATOR

PERIOD

ENVIRONMENTAL BENEFITS

Total managed area (in hectares)

January/2022 to December/2022

408,354 hectares in PR and 82,681 in SC

FOREST CERTIFICATION

SUSTAINABLE FOREST MANAGEMENT

To ensure compliance with the principles and criteria of FSC® certification (Forest Stewardship Council®), a schedule of periodic internal and external audits is part of Klabin’s environmental management system. Internal audits are conducted by own employees trained to check the forestry processes based on FSC® Controlled Wood. External audits, on the other hand, are carried out annually by an FSC®-accredited entity for conducting assessments of the Forestry Management certification system. Green bond funds were allocated to audit-related activities in part of the Company’s forest units.



Eucalyptus forest in Paraná

USD, IN THOUSANDS

148

**INVESTED
IN THE PERIOD**

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Total internal audits	January/2022 to December/2022	99 in PR and 51 in SC
Total external audits	January/2022 to December/2022	4 in PR and 2 in SC

FOREST CERTIFICATION PROGRAM FOR SMALL AND MEDIUM FARMERS

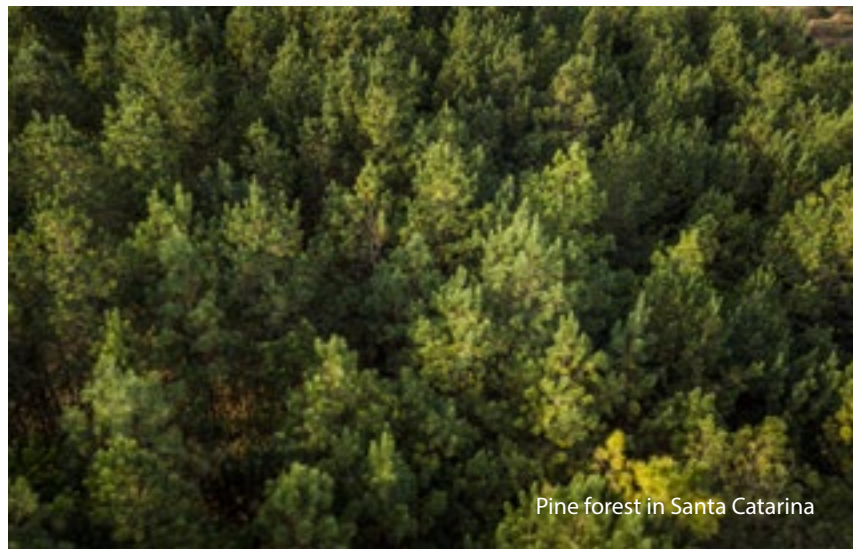
USD, IN THOUSANDS

774

INVESTED IN THE PERIOD

Most of the wood used in Klabin’s production processes comes from its own pine and eucalyptus forests, with FSC® certification (FSC-C022516). Approximately 50% of the total wood intended for production is acquired from third-party forests, members of the Fomento Florestal [Forestry Incentive] Program or independent producers. The allocated green bond funds were used for the acquisition of wood from January to December 2022.

Since 2014, Klabin maintains the Forest Certification Program for Small and Medium Rural Farmers, considering the FSC® SLIMF standard (created in partnership with Klabin), in the region of Campos Gerais, Paraná, intended for producers that participate in



Pine forest in Santa Catarina

the Fomento Florestal Program as well as independent producers. Purchases from these producers reinforce the Company’s commitment to prioritizing the use of certified wood deriving from sustainable production processes.

The certification is an affirmation that the timber producer operates with social and environmental responsibility and follows global forestry management standards. The certification also adds

value to the wood marketed by these producers, with benefits extending throughout the entire production chain.

Klabin finances the process along with rural producers in Paraná and Santa Catarina, which rely on specialized consultants. The program began in Paraná in 2013 and has been underway in Santa Catarina since 2017, with the first group certification of producers in Santa Catarina in 2019.

SUSTAINABLE FOREST MANAGEMENT

PERFORMANCE INDICATOR

Total areas owned by certified small and medium-sized rural producers (in hectares)

PERIOD

January/2022 to December/2022

ENVIRONMENTAL BENEFITS

108,816.26 hectares in PR
7,249.78 hectares in SC

PURCHASE OF WOOD

To ensure the sourcing of timber purchased from independent suppliers that do not participate in the Fomento Florestal Program, Klabin maintains the Controlled Timber Program, where suppliers have their properties assessed based on specific methodology related to FSC® chain of custody certification, including economic management aspects, environmental compliance and social impacts. These producers undergo annual maintenance audits, carried out by the Institute for Agricultural and Forest Management and Certification (Imaflora).

USD, IN THOUSANDS

204,642

**INVESTED
IN THE PERIOD**



Controlled Timber Program evaluates properties of independent timber suppliers

SUSTAINABLE FOREST MANAGEMENT



PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Certified wood from producers participating in the Small and Medium Producers Certification Program	January/2022 to December/2022	4,197,237.19 tons
Wood from producers participating in the Madeira Controlada Program	January/2022 to December/2022	2,475,035 tons



ADAPTATION TO CLIMATE CHANGE

Klabín Forest Unit in Angatuba (SP)



FIRE PREVENTION MEASURES,
PROPERTY PROTECTION AND
MANAGEMENT MICROPLANNING

USD, in thousands

1,291

INVESTED IN INITIATIVES AND
PROJECTS IN THE PERIOD



PROPERTY SECURITY

STRUCTURE ACTIVELY MONITORS
THE FOREST AREAS

313,7 HECTARES OF PROTECTED AREA IN
PARANÁ, SANTA CATARINA AND SÃO PAULO

FIRE PREVENTION AND PROPERTY PROTECTION MEASURES

ADAPTATION TO CLIMATE CHANGE



Klabin's eucalyptus plantation in Paraná, seen from the observation tower

Klabin maintains a forest heritage security structure to fight fires and protect fauna and flora, curbing the action of predatory hunters and fishermen, invasions and other occurrences. The allocated green bond funds were applied to maintain activities and structure that comprise the Company's property protection initiatives in forest areas.

This action front includes a structure consisting of mobile patrols, control towers and communication equipment for the permanent monitoring of forest areas, totaling 718,700 hectares of protected area in Paraná, Santa Catarina and São Paulo.

USD, IN THOUSANDS

1.291

**INVESTED
IN THE PERIOD**

PERFORMANCE INDICATOR

Monitored areas (in hectares)

PERIOD

January/2022 to December/2022

ENVIRONMENTAL BENEFITS

718,744 hectares at Klabin S.A.



SUSTAINABLE WATER MANAGEMENT

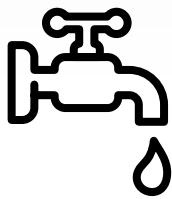
Aerial view (partial) of the Klabin Ecological Park



IMPROVEMENTS FOR SUSTAINABLE WATER MANAGEMENT

USD, in thousands

244 INVESTED IN INITIATIVES
AND PROJECTS IN THE PERIOD



756m³

PER DAY OF WATER
REUSE FROM FIBER
PRESSING AT CORREIA PINTO

15%

REDUCTION IN WATER WITHDRAWN
FROM THE RIVER IS THE EXPECTATION
FOR THE PROJECT AT THE GOIANA UNIT



WATER CONSUMPTION REDUCTION INITIATIVES

USD, IN THOUSANDS

244
 INVESTED
 IN THE PERIOD

Water is one of the most important inputs for Klabin’s processes, mainly in the production of pulp and paper. All of its units operate in compliance with current environmental laws and regulations, focusing on reducing consumption and striving for continuous improvement across all processes, valuing the conservation of natural resources and increasing the reuse of this input.

WATER REUSE AT OTACÍLIO COSTA

With a focus on reducing consumption, green bond resources were allocated to three water reuse projects in the Otacílio Costa Unit (SC), one of which is for compliance with the local requirement of the Environmental Operating License. The projects involved the recovery of rainwater and process water from the operation, in the hydraulic chipper unit and in the lime kiln.

PROJECTS AT THE CORREIA PINTO UNIT

At the Correia Pinto Unit, several projects were conducted with resources allocated from the green bond. Reusing some of the clean water from the utilities areas and at the entrance of the Effluent Treatment Plant (ETP) by directing it to the osmosis channel was the focus of the project to install a system that came online in May 2022.



The Monte Alegre Unit, in Telémaco Borba (PR), has projects to reduce water consumption

The rainwater reuse and osmosis project involved the installation of a system with contaminant isolation, bypass for reversion of the old system, oil separator box, installation of pH and flow meters, and osmosis piping, among other actions. The purpose of Reverse Osmosis is to remove the salts and silica contained in the water in order to avoid encrustation and corrosion points in the boiler piping and tubes.

Another project promoted the adaptation of the operational process to reduce water consumption. The system allowed the recovery of water from fiber pressing, transferring the recovered water to a tank and tower, avoiding the consumption of fresh water in the process. The adaptation was performed by installing approximately 110 meters of connecting pipes and all required services.

The installation of a system to recover water from the ash conveyors, which circulates for heat exchange and was discarded to the ETP, allows this volume to be transferred to the Water Treatment Plant (WTP) by means of a pumping system. By December 2022, 85% of the project's actions had been executed. In another project, with 70% of the actions conducted in the period, a system was installed to recover water from the turbopumps for heat exchange, also directing it to the WTP by pumping.



STUDIES FOR RIVER WITHDRAWAL REPLACEMENT

Since the Goiana Unit (PE) is located in an area of water scarcity, the project aims to mitigate seasonal impacts that are common in the municipality, by means of wells that can complement the provision of surface water when it is not available, in addition to assisting in possible new expansions of the Recycled Products plant. To that end, studies were started to reduce the consumption of industrial water from river withdrawal.

SUSTAINABLE WATER MANAGEMENT

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Reduced water consumption – Correia Pinto Unit		
Water recovery from the hydraulic chipper unit	January/2022 to December/2022	Reduction of approximately 109,500 m ³ / per year
Areas delineated as Legal Reserves and Permanent Preservation Areas (hectares)	January/2022 to December/2022	Recovery of approximately 5,000 m ²
Areas delineated as Legal Reserves and Permanent Preservation Areas (hectares)	January/2022 to December/2022	Reduction of approximately 146,000 m ³ / per year
Rainwater reuse and osmosis system		
Reduced freshwater consumption	January/2022 to December/2022	Reduction of approximately 578,160 m ³ per year
Reduction of unmeasured volume	January/2022 to December/2022	-2.93 m ³ /ton
Reduction of effluent temperature	January/2022 to December/2022	Reduction of 1.08 °C in effluent
Fiber pressing water recovery		
Water reuse	January/2022 to December/2022	756 m ³ /day*
Reduction of specific consumption	January/2022 to December/2022	1.4 m ³ /ton*
Ash conveyor water recovery system		
Water reuse	January/2022 to December/2022	30m ³ /hr**
Water reuse	January/2022 to December/2022	1.3 m ³ /ton produced**
Turbopump water recovery system		
Reduction of specific consumption	January/2022 to December/2022	1.59 m ³ /ton**
Water reuse	January/2022 to December/2022	37 m ³ /hr**

*During the full-time use of two presses in the fiber pressing process.

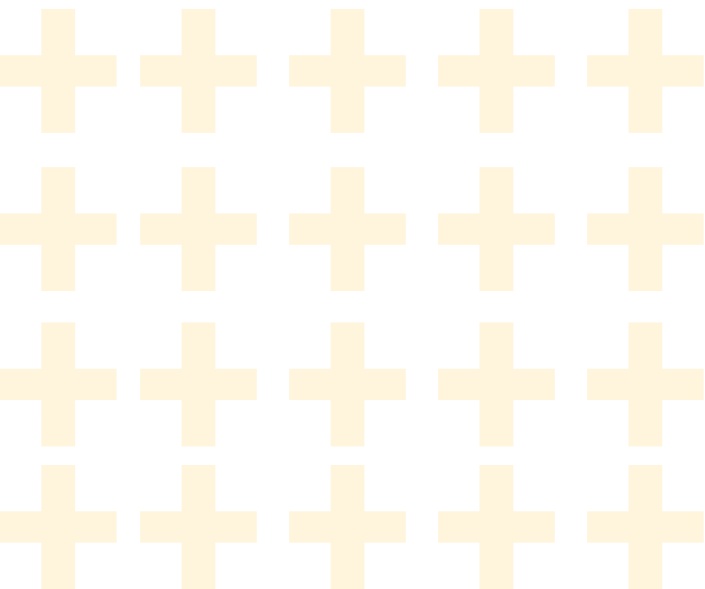
**After implementation (not completed by December/2022).

Studies for river withdrawal replacement

Reduction of water consumption from the river	January/2022 to December/2022	15 m ³ of water will be withdrawn from the well, resulting in a savings of 15% of water withdrawn from the river
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*During the full-time use of two presses in the fiber pressing process.

**After implementation (not completed by December/2022).





WASTE AND EFFLUENT MANAGEMENT

Effluent Treatment Plant (ETP) for the Puma II Project



IMPROVEMENTS TO EFFLUENT

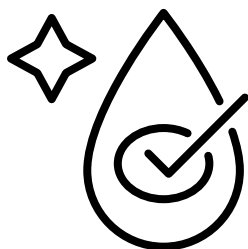
USD, in thousands

394

INVESTED IN INITIATIVES
AND PROJECTS IN THE PERIOD

100%

**OF EFFLUENT GENERATED IN
THE INDUSTRIAL OPERATIONS
IS TREATED AT THE EFFLUENT
TREATMENT PLANTS**



**COOLING TOWERS
INSTALLED IN THE ETP AT
CORREIA PINTO IMPROVED
TREATMENT AT THE PLANT**

IMPROVEMENTS IN WASTEWATER MANAGEMENT

USD, IN THOUSANDS

394

**INVESTED
IN THE PERIOD**

WASTE AND WASTEWATER MANAGEMENT

Wastewater disposal is one of the focal points of Klabin's environmental management. One hundred percent of wastewater generated in the industrial operations is treated at the Effluent Treatment Plants (ETPs), before discharge to the water bodies. Treatment is monitored both internally and by a third party, in compliance with all legal requirements.

From January to December 2022, green bond resources were allocated to the installation of cooling towers in the ETP at the Correia Pinto Unit (SC). By lowering the temperature at the inlet of the aeration pond, one of the steps of the process, it was possible to reduce the BOD* levels at the outlet of the plant, thus improving its performance.



Correia Pinto Unit (SC)

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
BOD reduction ETP pond	January/2022 to December/2022	- 10mg/l BOD concentration
Pond temperature decrease	January/2022 to December/2022	11°C reduction of the pond after startup**

**The towers came online in October/2022.

*BOD: Biochemical Oxygen Demand – amount of oxygen consumed to break down the organic matter present in water.

An aerial night view of a large industrial facility, likely a pulp mill, with numerous lights illuminating the complex. The scene includes various structures, conveyor belts, and large piles of material. A prominent purple rectangular box with a green border is overlaid in the lower center, containing the text 'RENEWABLE ENERGY'.

RENEWABLE ENERGY

Wood preparation at the Puma Unit II



PROJECTS FOR POWER GENERATION FROM RENEWABLE SOURCES

USD, in thousands

1,987

INVESTED IN INITIATIVES AND PROJECTS IN THE PERIOD



3 NATURAL GAS

BOILERS AND ONE OIL BOILER REPLACED BY A BIOMASS BOILER AT THE PIRACICABA UNIT



+94,000

TONS OF BIOMASS

PRODUCED IN SANTA CATARINA

GENERATION OF RENEWABLE ENERGY FROM BIOMASS

RENEWABLE ENERGY



Lime kiln, Puma II Unit

The use of biomass and other recovered inputs as an energy source, replacing fossil fuels, is a priority concern of Klabin’s environmental management, whose energy matrix is currently comprised of 90.9% renewable sources (biomass and black liquor – waste from the pulp manufacturing process – and hydroelectric power).

With green bond resources, Klabin completed the construction of a biomass boiler at the Piracicaba Unit (SP), operating 24 hours a day, replacing three natural gas boilers and one oil boiler. Between January and December 2022, the boiler consumed a total of 62,670 tons of biomass, replacing the use of fossil fuels and, consequently, decreasing carbon dioxide (CO₂)

emissions. The expectation is that, with the use of biomass fuel, emissions will be reduced for nitrogen oxide (NO_x), sulfur oxide (SO_x), particulate matter and greenhouse gases (GHG), also contributing to increasing the share of renewable fuels in the Company’s energy matrix.

In addition to the Piracicaba Unit (SP), Klabin’s operations in Paraná and Santa Catarina also received funds allocated from the green bonds for the use of biomass as an energy source.

USD, IN THOUSANDS

1,987

INVESTED IN THE PERIOD

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Reduction of atmospheric greenhouse gas emissions (CO ₂ eq) at Piracicaba	January/2022 to December/2022	Reduction estimate of 56,115 tCO ₂ eq
Amount of biomass collected in Santa Catarina (tons)	January/2022 to December/2022	94,912 tons
Amount of biomass collected in Paraná (tons)	January/2022 to December/2022	390,780 tons



PRODUCTS THAT ARE ECO-EFFICIENT OR ADAPTED TO THE CIRCULAR ECONOMY, PRODUCTION TECHNOLOGY AND PROCESSES



INDUSTRIAL AND PACKAGING OPTIMIZATION PROJECTS

USD, in thousands

6,070

INVESTED IN INITIATIVES AND
PROJECTS IN THE PERIOD



**8 STUDIES
ON LIFE CYCLE
ANALYSIS, WATER
FOOTPRINT
AND CARBON
FOOTPRINT OF THE
PRODUCTS WERE
COMPLETED**

**19% INCREASE
IN THE VOLUME
OF MATERIAL
RECOVERED IN
THE SOLID WASTE
PROGRAM IN PARANÁ**

ENVIRONMENTAL STUDIES AND IMPROVEMENTS IN ENVIRONMENTAL PERFORMANCE MANAGEMENT

USD, IN THOUSANDS

2,089

INVESTED IN THE PERIOD

Klabin allocated green bond funds to expand its studies on Life Cycle Analysis, Water Footprint, Carbon Footprint and other studies and evaluations to improve environmental performance. Between January and December 2022, eight additional studies were completed in addition to those already conducted in previous years, and the goal is that 100% of the Company's product portfolio and operations will be covered by environmental performance assessments in the coming years.

Green bond resources were also used for the continuity of the suppliers' social and environmental evaluation process. In December 2022, the milestone of 70% of critical suppliers assessed was reached in the programs covered by the Sustainability Assessment in the Supply Chain and Monitoring of Indicators and Legal Requirements.



Klabin Technology Center (CTK)

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Number of studies conducted	January/2022 to December/2022	9 studies on Life Cycle Analysis, Water Footprint, Carbon Footprint and future technologies in sustainability conducted in the year 2022, in addition to the previously reported studies
% of critical suppliers assessed	January/2022 to December/2022	70% of critical suppliers assessed as of the closing of this report (based on suppliers already assessed between 2019 and 2022)
Units covered by the Environmental Management System	January/2022 to December/2022	100%

IMPROVEMENTS IN SOLID WASTE MANAGEMENT

Klabin's Sustainability Policy includes pollution prevention by means of reducing the impacts of solid waste generation and the search for the most efficient technologies and solutions. The Company maintains a Solid Waste Program with actions to support selective collection in eight municipalities in the Campos Gerais region of Paraná: Telêmaco Borba, Ortigueira, Imbaú, Sapopema, Reserva, Tibagi, Rio Branco do Ivaí and Tamarana.

Klabin's Solid Waste Program promotes a number of actions to support selective collection through the provision of structures and equipment, assistance in the formalization of associations cooperatives, and activities for the monitoring, training and institutional strengthening for waste pickers of recyclable materials.

USD, IN THOUSANDS

383

**INVESTED
IN THE PERIOD**

In the period from January to December 2022, Klabin invested resources from the green bonds to implement the Solid Waste Program in Sapopema (PR) and in Goiana (PE), in addition to maintaining actions in the other municipalities. In Goiana, a diagnosis of the initial situation was made, a Municipal Plan for Selective Collection was elaborated, and a group of recycling agents was formed: Recycle Goiana.

In Paraná, the volume of material recovered in cooperatives and associations that make up the Program increased by 19%, from 2,387 tons to 2,860 tons in 2022. In addition, more than 1,500 students participated in workshops in municipal schools in the region, in which video and pamphlet materials were distributed with guidance

on selective collection. The resources were also allocated, in the period, for the purchase of conveyor belts and presses to improve the productivity of the recycling organizations.

Klabin also maintained the disposal of dregs, waste generated in the caustification stage of the production process, to substitute clay when making bricks. In partnership with the Ceramic Technology Center and the industry in the region, the initiative has guaranteed the reuse of 100% of the dregs generated at the Monte Alegre Unit (PR) and has already contributed to replacing 10,000 tons/year of clay in the production of bricks.

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Number of municipalities benefited by the Solid Waste Program	January/2022 to December/2022	9
Volume of recovered mass (waste sold by cooperatives), reducing the amount of waste sent to landfills.	January/2022 to December/2022	2,860 tons (19% increase over 2021)
Waste avoided in landfills (t/year) at Monte Alegre (PR)	January/2022 to December/2022	100% of the dreg waste generated was used (17,756 t/year)

STUDIES ON CARBON CREDIT PROJECTS

These studies aim to assess the eligibility for generating carbon credits as a tool to enable low-carbon investments. Projects that present potential for carbon reduction, sequestration and/or storage, foreseen in existing methodologies and recognized in the market, become eligible for the generation of carbon credits that should return as an incentive for good practices in the transition to a low carbon economy.

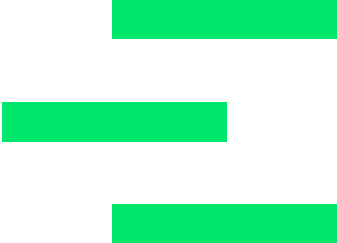


USD, IN THOUSANDS

33

**INVESTED
IN THE PERIOD**

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Number of studies conducted	January/2022 to December/2022	5 eligibility studies and 1 Development Project



FORESTRY BIOMASS: ANALYSIS OF CHIPPER RENOVATION SCENARIOS

To meet the demand for more biofuel in the Company's energy matrix, Klabin acquired a new chipper for the biomass operation, ensuring continuity and increased productivity of operations.

USD, IN THOUSANDS

1,646

**INVESTED
IN THE PERIOD**



Wood Yard at the Puma II Unit

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Reduction of fossil fuel consumption	August/2022 to December/2022	Reduction of fossil fuel consumption by 7 l/hr

ELECTROSTATIC PRECIPITATOR REPLACEMENT



Boiler and digesters at the Puma'II Unit

In order to improve air quality and reduce particulate matter emissions from boiler combustion, Klabin developed a project to deploy electrostatic precipitators at the Correia Pinto (SC) and Otacílio Costa (SC) Units.

The project is part of a plan to adjust the Company's atmospheric emissions in compliance with Resolution No. 436, dated December 22, 2011, of the National Environment Council (Conama), which establishes the maximum pollutant

emission thresholds for installed fixed sources, and Term of Commitment No. 115/2016, signed with the Santa Catarina Environment Institute (IMA).

From January to December 2022, Klabin worked on replacing the Electrostatic Precipitator for Recovery Boiler 2 at the Correia Pinto Unit (SC), which had been in operation since 1987. The change ensured not only a reduction in the generation of pollutant gases, but also better plant performance and a decrease in complaints from the community.

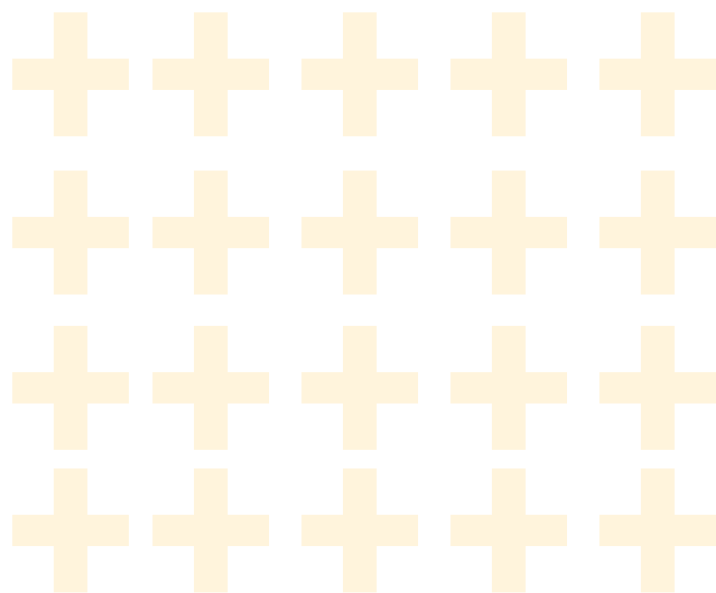
USD, IN THOUSANDS

1,361

**INVESTED
IN THE PERIOD**

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Prevention of clogging in CR2 by excess Cl and K	January/2022 to December/2022	No stoppage recorded due to clogging after startup
Dust content at output on a dry basis	January/2022 to December/2022	Reduction from 100 to 50 mg/Nm ³ and 8% O ₂
Reduced concentration of particulate matter	January/2022 to December/2022	Reduction from 2,169.90 mg/Nm ³ to 85.55 mg/Nm ³ at 8% O ₂
Reduced exhaust of CR2 gases generated in the plant that are released to the atmosphere (Kg/hr)	January/2022 to December/2022	Reduction from 543.29 to 10.56 Kg/hr
Reduction of mean flow Nm ³ /h	January/2022 to December/2022	Reduction from 186,910.85 Nm ³ /hr to 120,430.87 Nm ³ /hr
Reduction of particulate matter (PM) in atmospheric emissions from Recovery Boiler 2 combustion (Correia Pinto Unit/SC)	January/2022 to December/2022	90.64% reduction in emissions of particulate matter into the atmosphere (85.55g/Nm ³ of emissions after the work compared to 914.18mg/Nm ³ of emissions before the work)

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Particulate matter in atmospheric emissions from Power Boiler 8 combustion (Otacilio Costa/SC Unit)	January/2022 to December/2022	<p>There were no reductions in particulate matter emissions into the atmosphere in the year 2022. The analyses were within the legal limit of 300 mg/Nm³.</p> <p>Results:</p> <p>1st Half of the Year 34.95 (mg/Nm³)</p> <p>2nd Half of the Year 64.83 (mg/Nm³)</p> <p>The electrostatic precipitator was installed at Otacilio Costa during the first half of 2021 with a 91% reduction in the analyses for the second half of the year after the equipment came online.</p>



BIOREFINERY AND BIOBARRIERS

Green bond resources made it possible to continue research, between January and December 2022, carried out by Klabin's Technology Center for the development of new products from the pulp and paper manufacturing process, with the following objectives:

- Generate greater valorization of lignin, a by-product of the pulp production process, to manufacture products from renewable sources that can replace existing products from fossil sources.
- Generate new pulp applications for textile product alternatives from renewable and potentially biodegradable sources.

- Provide solutions from renewable sources to help reduce contamination in environments.

Resources have also funded studies on alternative materials with barrier attributes that can be used with paper, with potential replacement of fossil and mineral source barriers. The global market for barriers is currently estimated at 3 billion euros and there are no market solutions so far that are from renewable, recyclable and biodegradable sources. The development of barriers with these characteristics represents an important environmental gain, since it would be possible to offer the market

more viable packaging for recycling, providing an alternative to plastic packaging, which is a well-known environmental hazard to the oceans.

The barriers analyzed in the study were oxygen, grease, water, and moisture, and the materials must be from renewable, repulpable, and recyclable sources. The solutions investigated have undergone proofs of concept and, if successful, will need to undergo development stages in order to ensure scalability.

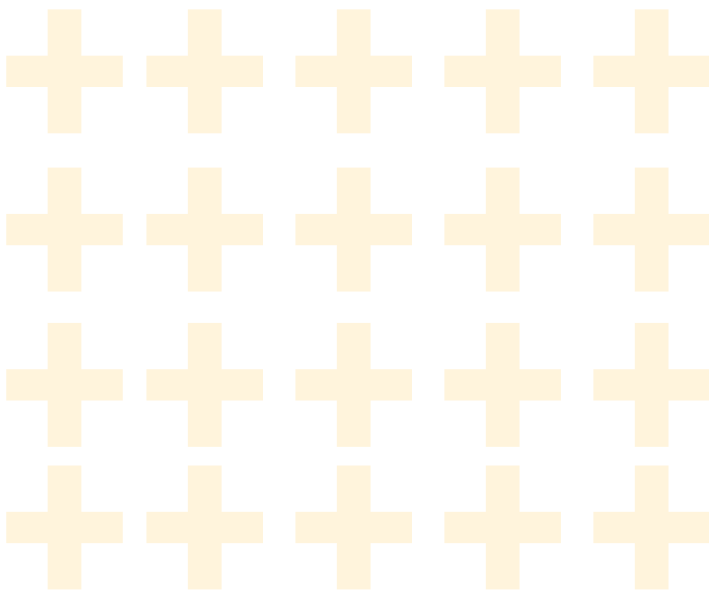
USD, IN THOUSANDS

558
INVESTED
IN THE PERIOD

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Biorefinery		
Kraft lignin testing to obtain biophenol	January/2022 to December/2022	Substitution of fossil-source components with renewable source, with possible application in the fragrance industry.
Kraft lignin testing to produce polyurethane	January/2022 to December/2022	Full or partial substitution of a fossil-source product with a renewable source. Possible application in the automobile industry and construction.
Barriers		
Oxygen barrier testing	January/2022 to December/2022	Replacement of aluminum layer of multilayer packaging for liquids. The potential benefits of substitution include improved recycling processes and biodegradability.

PRODUCTS THAT ARE ECO-EFFICIENT AND/OR ADAPTED TO THE CIRCULAR ECONOMY, PRODUCTION TECHNOLOGIES AND PROCESSES

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Testing of water barriers and in corrugated board	January/2022 to December/2022	Potential replacement of fossil-source barrier in cardboard boxes with renewable, recyclable and biodegradable-source barrier.
Testing barrier applications on a 3D surface	January/2022 to December/2022	Development of a process for applying barriers to non-uniform surfaces. Technology will be used to apply barriers that are being developed from renewable, recyclable, and biodegradable sources to 3D surfaces. Potential benefit is the replacement of plastic packaging with cellulose fiber packaging, which is biodegradable.





CLEAN TRANSPORTATION



CLEAN TRANSPORTATION
INFRASTRUCTURE CONSTRUCTION,
MAINTENANCE AND OPERATION
PROJECTS

USD, in thousands

4

INVESTED IN INITIATIVES
AND PROJECTS IN THE PERIOD



1.47 tCO₂eq/year

IS THE REDUCTION OF SCOPE 3
GHG EMISSIONS WITH THE
4 TRUCKS



157.5 LITERS OF DIESEL FUEL
ARE NO LONGER CONSUMED DUE
TO THE ELECTRIC TRUCKS

THE FOUR ELECTRIC TRUCKS CONTRIBUTES TO
THE REDUCTION OF CONSUMPTION OF 1,890
LITERS OF DIESEL PER YEAR AND THE REDUCTION
OF 1.42 T OF EMISSIONS GREENHOUSE GAS (GHG)

CLEAN TRANSPORTATION INFRASTRUCTURE CONSTRUCTION, MAINTENANCE AND OPERATION PROJECTS

USD, IN THOUSANDS

4

**INVESTED
IN THE PERIOD**

The adoption of solutions that favor alternative sources to oil, with a positive impact on supply chains, is yet another step towards Klabin's carbon-neutral economy. In a pilot project, in November 2022, the Company began testing the adoption of electric trucks for the delivery of corrugated board produced at the Jundiaí Tijuco Preto (TP) Unit, in the interior of São Paulo.

Green bond resources were applied in the construction and installation of an electric vehicle recharging station at the unit, involving the hiring of civil labor for the construction of a masonry base and metal structure roof, electrical labor for the passage of cables, and installation of all the entire structure necessary for charging the four electric trucks of the fleet. Each electric truck contributes to the reduction of diesel consumption by 157.5 liters and to a reduction in Scope 3 greenhouse gas emissions (GHG), which deals, among other things, with product distribution and transportation.

The vehicles start being used to make deliveries throughout the state of São Paulo, returning, at the end of the day, for recharging at the totems installed at the Unit, which guarantees the neutrality of the operation.



Electric charging station for trucks at the Jundiaí Tijuco Preto Unit

PERFORMANCE INDICATOR

PERIOD

ENVIRONMENTAL BENEFITS

Reduction of emissions from fossil pollutants

January/2022 to December/2022

With the four trucks in operation:

Reduction of 630 liters of diesel consumption per month

Emission reduction of 1.47 tCO₂eq/year



APPENDICES

APPENDIX A

2022 MANAGEMENT REPORT ON ELIGIBLE PROJECTS

Klabin is responsible for the completeness, accuracy and validation of the Green Bond Resource Use Statement (Appendix B). We hereby declare, through this resource use report, that the net resources in the amount of BRL 113 million (equivalent to approximately USD 22 million) were invested between January 2022 and December 2022 in Green Bond 2027 and BRL 1.02 billion (equivalent to approximately USD 201 million) in Green Bond 2049 in qualified eligible projects that meet the following Eligibility Criteria:

Native Forest Restoration and Conservation of Biodiversity	Green bond resources may be allocated to capital expenditures necessary for activities that maintain existing restricted conservation areas or develop new restricted conservation areas, including: restoration and conservation of native forest cover on degraded lands and biodiversity, Matas Legais Program and fauna conservation by the Klabin Ecological Park.
Sustainable Forestry Management	Green bond resources may be allocated to capital expenditures necessary for the sustainable management of FSC® certified eucalyptus and pine forests, including: new planting and maintenance activities in wholly owned and third party areas, as well as the purchase of certified wood.
Adaptation to Climate Change	Green bond funds may be allocated for expenses incurred while updating forest, industrial and logistical processes to reduce impacts on climate patterns and local ecosystems, minimizing greenhouse gas emissions and the use of harmful substances.
Sustainable Water Management	Green bond resources may be allocated to capital expenditures necessary to build and maintain infrastructure that reduces water consumption in the industry.
Waste and Wastewater Management	Green bond resources may be allocated to capital and operating expenses necessary for the development, construction, deployment, operation and upgrading of facilities that reduce waste generation, promote the reuse of waste in processes and act in the treatment of wastewater.
Renewable Energy	Green bond resources may be allocated to capital expenditures necessary for the development, construction, installation, operation and upgrading of facilities that reduce greenhouse gas (GHG) emissions by replacing fossil fuels with renewable sources and increased energy efficiency.
Products that are Eco-efficient and/or Adapted to the Circular Economy, Production Technologies and Processes	Green bond resources may be allocated to expenses that support Klabin's Industrial and Forestry Research Centers; facilitate the use of packaging made with FSC®-certified raw materials and recycled materials; promote less use of materials in packaging and extend the useful life of packaging materials.
Clean transportation	Green bond resources may be allocated to capital and operational expenses required for the construction, maintenance and operation of clean transportation infrastructure for the transport of Klabin products.

APPENDIX B

USE OF RESOURCES 2022

ELIGIBILITY CRITERIA	INITIATIVES	2022	
		THOUSANDS OF BRL	EQUIVALENT IN USD
Native Forest Restoration and Conservation of Biodiversity	Control of invasive exotic species	2,607	514
	Control of invasive exotic species PR	1,574	310
	Control of Invasive Exotic Species SC	1,034	204
	Matas Legais Program	1,053	207
	Matas Legais Program PR	722	142
	Matas Legais Program SC	331	65
	Matas Legais Seedlings Program	69	14
	Social Forests	202	40
	Crescer Florestal Program	211	41
	Crescer Florestal Program PR	126	25
	Crescer Florestal Program SC	85	17
	Biodiversity Monitoring Programs	712	140
	Biodiversity Monitoring Program SC	124	24
	Biodiversity Monitoring Program PR	378	74
	Biodiversity Monitoring Program SP	210	41
	Environmental Protectors Program	50	10
	Ecological Park	2,064	407
	Caiubi Program	121	24
	Klabin Caiubi Program (RS)	33	6
	Klabin Caiubi Program (PR)	63	12
Klabin Caiubi Program SC (2019) and Araucária Trail	24	5	
	SUBTOTAL	7,088	1,396
Adaptation to climate change	Asset Security – SC	6,554	1,291
	SUBTOTAL	6,554	1,291

ELIGIBILITY CRITERIA	INITIATIVES	2022	
		THOUSANDS OF BRL	EQUIVALENT IN USD
Sustainable Forestry Management	Purchase of Wood	1,038,947	204,642
	Certified Wood Purchases	516,129	101,662
	Controlled Wood Purchases	522,818	102,980
	Forestry	33,336	6,566
	Loading – SC	6,145	1,210
	Planning – SC	2,416	476
	DIFs – Maintenance/Materials/Services – PR	6,619	1,304
	Forestry – SC	18,155	3,576
	Producers Certification	3,928	774
	Environment and Certifications	1,322	260
	Forest Certification Program (small producers)	2,475	487
	Supplier Certification Program SC	131	26
	Forest Certification	752	148
	FSC Certification Audits – SC	272	54
	FSC Certification Audits – SP/PR	480	94
	SUBTOTAL	1.076.962	212.130
Renewable Energy	Renewable Energy Generation	10,088	1,987
	Biomass Boiler	6	1
	Biomass – SC	2,838	559
	Biomass - Maintenance/ Materials/Services - PR	7,244	1,427
	SUBTOTAL	10.088	1,987
Products that are Eco-efficient and/ or Adapted to the Circular Economy, Production Technologies and Processes	CR2 Electrostatic Precipitator	6,908	1,361
	Environmental Studies	4,488	884
	Improvements to environmental	6031	1,188
	Improvements to solid waste management	1,946	383
	Aerolito Study	86	17
	Innovation Projects - Biorefinery	1,340	264
	Innovation Projects - Barriers	1,492	294
	Carbon Pricing Studies	167	33
	Scenario Analysis	8,357	1,646
	Chipper Renovation		
	SUBTOTAL	30,816	6,070

ELIGIBILITY CRITERIA	INITIATIVES	2022	
		THOUSANDS OF BRL	EQUIVALENT IN USD
Clean Transportation	Charging station for electric trucks	20	4
	SUBTOTAL	20	4
Waste and Wastewater Management	ETP Cooling Tower Installation	2,000	394
	SUBTOTAL	2,000	394
Sustainable Water Management	Water wells	134	26
	Installation of water recovery system – ash conveyors	246	49
	Installation of water recovery system – turbopumps	75	15
	Water recovery fiber pressing	192	38
	Installation of rainwater reuse system and Osmosis	592	117
	SUBTOTAL	1,239	244
	TOTAL	BRL 1,134.767	USD 223.516

CONSOLIDATED HISTORY (2015 TO 2022)

TOTAL VS. PROVEN EMISSIONS

ELIGIBILITY CRITERIA	TOTAL BY CATEGORY BRL, IN THOUSANDS	TOTAL BY CATEGORY EQUIVALENT IN USD
Native Forest Restoration and Conservation of Biodiversity	59,427	15,125
Renewable Energy	161,633	43,495
Waste and effluent	32,105	8,662
Clean Transportation	82,081	23,863
Energy Efficiency	7,665	1,878
Sustainable Forestry Management	2,581,718	550,961
Sustainable Water Management	24,871	5,234
Products, technologies and processes that are eco-efficient and/or adapted to the circular economy	240,453	56,932
Adaptation to Climate Change	50,673	10,136
TOTAL	3,240,625	716,285
Emission		1,200,000
Balance to prove		483,715

DETAILED HISTORY (2015 TO 2022)

TOTAL VS. PROVEN EMISSIONS

ELIGIBILITY CRITERIA	TOTAL BY CATEGORY BRL, IN THOUSANDS			TOTAL BY CATEGORY EQUIVALENT IN USD		
	2027	2049	TOTAL	2027	2049	TOTAL
Native Forest Restoration and Conservation of Biodiversity	52,339	7,088	59,427	13,729	1,397	15,126
Renewable Energy	120,739	40,893	191,633	33,981	9,514	43,495
Waste and effluent	30,105	2,000	32,105	8,268	394	8,662
Clean Transportation	82,062	19	82,081	23,859	4	23,863
Energy Efficiency	7,665	-	7,665	1,878	-	1,878
Sustainable Forestry Management	1,667,073	964,646	2,581,719	361,151	189,810	550,961
Sustainable Water Management	1,009	23,862	24,871	201	5,033	5,234
Products, technologies and processes that are eco-efficient and/or adapted to the circular economy	194,639	45,814	240,453	48,093	8,839	56,931
Adaptation to Climate Change	44,119	6,554	50,673	8,845	1,291	10,136
TOTAL	2,149,750	1,090,875	3,240,625	500,003	216,281	716,285

DETAILED HISTORY (2015 TO 2022)

BY PROOF*

BRL MM

Green Bond	Issuance USD MM	Proof 2018				Proof 2019		Proof 2020		Proof 2021		Proof 2022	Proof 2023	TOTAL
		2015 (SEP TO DEC)	2016	2017	2018 (JAN TO JUN)	2018 (JUL TO DEC)	2019 (JAN TO JUN)	2019 (JUL TO DEC)	2020 (JAN TO JUN)	2020 (JUL TO DEC)	2021 (JAN TO JUN)	2021 (JUL TO DEC)	2023 (JAN TO DEC)	
Bond 2027	500	114	303	181	102	14	135	108	294	190	206	389	113	2,149
Bond 2049	700	-	-	-	-	-	6	25	21	5	6	5	1,021	1,089
Total	1200	114	303	181	102	14	142	134	316	195	211	294	1,134	3,239

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EQUIVALENT USD MM

Green Bond	Issuance USD MM	Proof 2018				Proof 2019		Proof 2020		Proof 2021		Proof 2022	Proof 2023	TOTAL	BALANCE
		2015 (SEP TO DEC)	2016	2017	2018 (JAN TO JUN)	2018 (JUL TO DEC)	2019 (JAN TO JUN)	2019 (JUL TO DEC)	2020 (JAN TO JUN)	2020 (JUL TO DEC)	2021 (JAN TO JUN)	2021 (JUL TO DEC)	2023 (JAN TO DEC)		
Bond 2027	500	34	87	57	30	4	35	27	60	35	38	72	22	500	0
Bond 2049	700	-	-	-	-	-	2	6	4	1	1	1	201	216	484
Total	1200	34	87	57	30	4	37	33	64	36	39	73	223	716	484

Average exchange rate BRL/USD	2015	2016	2017	2018	2018	2019	2019	2020	2020	2021	2021	2022
	3.3387	3.4833	3.1925	3.4274	3.8806	3.8459	4.0544	4.9233	5.4359	5.3901	5.4246	5.0769

*Our reports consider initiatives that meet the eligibility criteria for issuing green bonds (The Green Bond Principles) and, following these same principles, for our first proof, the funds were allocated to projects whose investments covered a retroactive period of up to 24 months from the bond issuance date, including Puma I, construction of the industrial unit in Ortigueira, Paraná.

APPENDIX C



ASSURANCE STATEMENT – BUREAU VERITAS

Bureau Veritas Certification Brazil (Bureau Veritas) has been contracted by Klabin S.A. (Klabin), to conduct a limited verification regarding the Report on Green Bonds issued in March 2023.

This verification was conducted by a multidisciplinary team, including verifiers with knowledge of financial and non-financial data.

CONCLUSION

Based on the verification carried out by us and the evidence obtained, we are of the opinion that Klabin's Green Bonds Report has been properly prepared in all its aspects, as demonstrated in this Statement.

We evidenced the allocation of Green Bond proceeds in projects clearly and objectively identified in the Green Bonds Report.

At the end of the Verification process, a Detailed Report was generated, kept as a record in our internal database. This Report demonstrates the entire sample trail of verified projects and indicators, in the context of our assessment.

1. SCOPE OF WORK

The scope of projects associated with Klabin Green Bonds has the following eligible categories:

- Sustainable forest management;
- Restoration of native forests and conservation of biodiversity;
- Renewable energy;
- Energy efficiency;
- Eco-efficient products, production technologies and processes;
- Adaptation to climate change;
- Waste and effluent management;
- Sustainable water management;
- Clean transport

The verified data and information refer to the accountability period from January to December 2022.

This verification occurred due to Green Bonds issued in September 2017 by Klabin Finance, April 2019 and January 2020 by Klabin Austria S.A., contractually guaranteed by Klabin S.A., in a total amount of US\$ 1.2 billion (One billion and two hundred million dollars). In the period between January and December 2022, Klabin repurchased US\$ 240 million of notional, related to the Bond issued in 2017, providing it with greater liquidity and reducing its debt.

Bureau Veritas has used the following references to issue this Verification Statement:

- Climate Bond Standard, version 3.0;
- Guidance for verifiers, version 2.0;
- Climate Bonds Taxonomy, version 2021;
- Internal Verification Protocol Green Bonds, Bureau Veritas Brasil, 2019.

The scope of our work was limited to:

- Verification on the allocation of revenues from securities issued in accordance with Klabin's Green Bond Report of March 2023;
- Analysis of the KPIs selected by us in relation to their reliability and relevance.

The financial data were verified in national currency (Reais).

2. RESPONSIBILITIES OF KLABIN AND BUREAU VERITAS

The obtaining, calculation and presentation of the published data are the sole responsibility of Klabin's management. Bureau Veritas is responsible for providing an independent opinion to Klabin, in accordance with the scope of work defined in this statement.

3. METHODOLOGY, LIMITATIONS AND EXCLUSIONS

The verification covered the following activities:

- a. Interviews with personnel involved in the preparation, evaluation and monitoring, especially in the areas of controllership, treasury, sustainability and also forest and industrial environment;
- b. Traceability of financial and non-financial data, including planning and monitoring of allocated proceeds;
- c. Collection of evidence on the allocation of proceeds and execution of activities associated with Green Bonds, in the calculation period;

The verification level adopted was Limited, according to the requirements of the ISAE 3000¹ standard, incorporated into Bureau Veritas' internal verification protocols.

Any evaluation of information related to activities outside the reported period was excluded from this verification.

4. TECHNICAL OPINION ON THE ALLOCATION OF GREEN BONDS PROCEEDS

4.1 Sustainable Forest Management

- We verified the allocation of Green Bond proceeds in areas duly certified in FSC®;
- We evidenced the use of appropriate systems, which support process flows and operational cost controls, on Green Bond proceeds allocated between January and December 2022.

4.2 Restoration of Native Forests and Biodiversity Conservation

- We evidenced an adequate increase in biodiversity in areas participating in the Social Forests and Legal Forests projects. We verified the process of controlling the donation of seedlings of native species, made with the issuance of invoices. All seedlings are delivered by the APREMAVI association;
- We evidenced actions to control invasive alien species;
- We verified the progress of the Caiubí project in the State of Paraná, which is a partnership with the Secretariats of Education in municipalities, for environmental training in biodiversity and waste management. The project is aimed at students in the municipal network through teacher training;
- We assessed the actions related to the maintenance of the "Biodiversity Monitoring Program" which aims to verify the impacts of forest management on the behavior of species and adopt prevention and mitigation measures. The program is carried out in Paraná, Santa Catarina and São Paulo;
- We verified the progress of relevant activities of the Klabin Ecological Park with emphasis on the release of 30 individuals of the species *Aburria Jacutinga* and an increase in the infrastructure to receive individuals of the species *Amazona Vinacea*, both considered as endangered species;
- Klabin's restoration areas contribute directly to the company's carbon stock.

¹International Standard on Assurance Engagements 3000 – Assurance Engagements other than Audits or Reviews of Historical Financial Information

4.3 Waste, Water, Effluent and Energy Management (Incl Energy Efficiency)

- We evidenced improvements in the operating conditions of the Industrial Treatment Plant of the Correia Pinto unit;
- We evidenced the installation of a rainwater reuse system and the osmosis process in the Correia Pinto unit;
- We assessed data regarding energy production and the progressive increase in the renewable energy matrix, produced from biomass in Santa Catarina and Paraná;

4.4 Adaptation to Climate Change

- We verified the use of resources in property protection, such as fire and other damage prevention related to the company's forestry assets.

4.5 Eco-Efficient Products, Production Technologies and Processes

- We verified data from the installation and improvements of an electrostatic precipitator, which replaced an old and inefficient version in 2021, in the Correia Pinto Unit. We highlight the efficiency gains of the treatment, especially of Particulate Matter (PM);
- We evidenced tests carried out in a research and innovation project, with the objective of developing alternative materials for multibarrier products and three-dimensional surfaces, as well as research for alternative raw materials to existing ones of non-renewable origin.

5. INDEPENDENCE AND IMPARTIALITY STATEMENT

Bureau Veritas is an independent professional services company specialized in Quality, Environment and Sustainability Management Systems, among others, with more than 185 years of experience in independent verification services.

Bureau Veritas has a quality management system, certified by a third party, according to which it maintains documented policies and procedures for compliance with ethical, professional and legal requirements.

The verification team has no relationship with Klabin, conducting this verification independently.

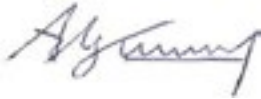
Bureau Veritas has a Code of Ethics throughout its business to ensure that its employees maintain the highest standards of ethics, integrity, objectivity, confidentiality, and professional competence/behavior in their daily activities.

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São Paulo, March 2023.



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