



**GREEN BONDS REPORT 2019**  
RESOURCE USE DISCLOSURE



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## PRESENTATION

In April 2019, Klabin made its second issuance of green bonds in the amount of USD 500 million, with a 30-year maturity. This is the first time a Brazilian company is able to raise funds from this category with a 30-year maturity.

Klabin's first issuance, also totaling USD 500 million, but with a 10-year maturity, was made in September 2017. The operation achieved a "High Standard" rating in the independent assessment performed by Sustainalytics consultancy, reinforcing Klabin's austerity and commitment towards sustainable development – an area in which the company is a market benchmark.

In this document, Klabin reports on the use of resources in the allocation period from **July 2018 to June 2019** (Green Bond 27, maturing in 10 years) and from **April 2019 to June 2019** (Green Bond 49, maturing in 30 years) for initiatives that meet the Green Bond Principles 2017 eligibility criteria.

To learn more about Klabin's green bond issuance, refer to the Management Report on Eligible Projects (Appendix A), the Resource Use Statement (Appendix B) and the Verification Statement at the end of this document.





**CATEGORY** | Renewable Energy

**PROJECT** | Improvements on the Power Boiler Biomass Silos

**TOTAL INVESTMENT (USD MI)** | 1,398.89

**INVESTMENT IN THE PERIOD (USD MI)** | 454.95

**DESCRIPTION**

The shift from fossil fuels to biomass and other inputs recovered as an energy source has been a focus of Klabin’s environmental management for some years. Currently, 89.1% of the company’s energy matrix consists of renewable energy sources (biomass and black liquor – waste from the pulp manufacturing process – and hydroelectric energy). The Puma Unit, in Ortigueira (PR), a factory, opened in 2016, with a production capacity of 1.5 million pulp/year, was initially planned to be self-sufficient in power generation from these inputs.

The resources allocated from the green bond funded the improvement project on the biomass silos in the power boiler, which is responsible for steam generation. The initiative seeks to stabilize the production and increase the efficiency in steam generation. This reduces the need for fuel oil in the event of a shutdown.

Improvements included the installation of rotors and extraction threads in a silo during the unit’s general shutdown in July 2019. The system is still being tested and the maximum silo operating level is expected to increase from 30% to 60% as of December 2019.

**IMPACT REPORT ON PROJECTS FINANCED IN THE RENEWABLE ENERGY CATEGORY**

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Fuel oil consumption volume	From the start of full operation (expected date: January/2020)	Consumption expected to reduce by at least 20 tons, with potential emission reduction of 62.2 tons of CO <sub>2</sub> eq
Steam output volume	From the start of full operation (expected date: January/2020)	Steam output of 280 t/h and reduction of the national grid energy consumption



**CATEGORY** | Renewable Energy

**PROJECT** | Smart Blowing System Installation in the Recovery Boiler

**TOTAL INVESTMENT (USD MI)** | 1,271.51

**INVESTMENT IN THE PERIOD (USD MI)** | 508.59

**DESCRIPTION**

As part of the power generation process from renewable sources, recovery of black liquor requires continuous cleaning of the heat exchange tubes in order to maintain the boiler steam generation efficiency for later use in power generation. The installation of the Intelligent Blowing System in the recovery boiler at the Puma Unit allows identifying the location and correct blowing moment, reducing steam waste and extending equipment life.

The allocated funds financed the purchase and installation of piping, valves and controls, performed during the Unit's general shutdown in July 2019, as well as hardware and software installation, which will be specifically set up for the plant operation.

The new system is expected to be operational by the end of 2019 and is expected to reduce steam consumption by at least 12 tons per hour. The "saved" steam will be used for electricity generation.



**CATEGORY** | Renewable Energy

**PROJECT** | Tall Oil Plant

**TOTAL INVESTMENT (USD MI)** | 6,661.75

**INVESTMENT IN THE PERIOD (USD MI)** | 1,685.01

**DESCRIPTION**

Tall oil is a by-product of the pulp production process that can be recovered and used as another renewable energy source at Klabin. The project to build a tall oil production unit at the Puma Unit in Ortigueira (PR), for which green bond resources are being used, will reduce fuel consumption and CO<sub>2</sub> emissions into the atmosphere. Civil works on the new plant, which is being installed in the Unit's evaporation area, began in January 2019.

The structure is expected to be completed in November 2019 and is designed to produce 2.5 tons per hour of tall oil on average, based on 24x7 operation and eight hours of cleaning per week.

**IMPACT REPORT ON PROJECTS FINANCED IN THE RENEWABLE ENERGY CATEGORY**

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Reduction of steam consumption in the recovery boiler	From the start of full operation (expected date: January/2020)	Reduction of 12 tons of steam/hour for power generation from renewable sources

**IMPACT REPORT ON PROJECTS FINANCED IN THE RENEWABLE ENERGY CATEGORY**

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Tall oil production (potential raw material for biofuel production)	From start of operation (mid 2020)	2.5 tons per hour on average
CO <sub>2</sub> emission reduction	From start of operation (mid 2020)	52,000 ton reduction in Co <sub>2</sub> eq emitted
Fuel oil consumption	From start of operation (mid 2020)	40% reduction, representing 16.6 million liters per year



**CATEGORY** | Sustainable Forestry Management

**PROJECT** | Purchase of wood

**INVESTMENT IN THE PERIOD (USD MI)** | 29,127.53

## DESCRIPTION

Most of the wood used by Klabin comes from its own pine and eucalyptus forests, all FSC® certified (FSC-C022516). About 30% of the total wood intended for production is acquired from third-party forests, members of the Fomento Florestal program or independent producers. The allocated green bond resources were used in investments for the acquisition of wood from April to June 2019.

Since 2013, Klabin has maintained the Forest Certification Program for small and medium-sized rural producers in the region of Campos Gerais, Paraná, aimed at producers that are part of the Fomento Florestal Program and independent producers, with a commitment to favor the use of certified wood, originated from sustainable production processes.

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

In addition, to ensure the sourcing of timber purchased from independent suppliers, 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. Producers undergo annual maintenance audits, carried out by the Institute for Agricultural and Forest Management and Certification (Imaflora).

## IMPACT REPORT ON PROJECTS FINANCED IN THE SUSTAINABLE FORESTRY MANAGEMENT CATEGORY

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Purchased volume of certified wood	April to June 2019	904,504.27 tons of certified wood from producers participating in the Small and Medium Producers Certification Program
		531,335.25 tons of wood from producers participating in the Controlled Timber Program





**CATEGORY** | Native Forest Restoration and Conservation of Biodiversity

**PROJECT** | Biodiversity and Forest Restoration and Conservation

**INVESTMENT IN THE PERIOD (USD MI)** | 1,564.28

## DESCRIPTION

**K**labin was one of the first companies to adopt mosaic forestry management, which mixes planted forests and preserved native forests. Ecological corridors 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 an extensive program for research and conservation of biodiversity, promoting the monitoring of its forests and helping ensure the survival of endangered species such as the pygmy brocket deer, howler monkey and cougar.

Of the total area managed by Klabin, approximately 46% correspond to planted areas, while 43% of the lands are preservation areas, divided between Permanent Preservation Areas (APP), Legal Reserves (RL) and Natural Heritage Private Reserves (RPPN). The company owns areas of high biodiversity value, such as Private Natural Heritage Reserves (RPPNs) in Paraná and Santa Catarina, dedicated exclusively to scientific research, environmental protection and water resource preservation, contributing to the conservation of biodiversity in the Atlantic Rainforest biome.

In March 2019, the company reinforced this action front with the opening of the Center

for Nature Interpretation, in the Serra da Farofa Complex RPPN, in Santa Catarina.

Allocated green bond resources for restoration and conservation from July 2018 to June 2019 were applied in the following initiatives:

- **Legal Forests Program:** carried out in partnership with the Association for the Preservation of the Environment and Life (Aprmavi), it guides small and medium-sized rural producers in Paraná and Santa Catarina to operate more efficiently, profitably and ecologically on their properties, through rural property planning, conservation, environmental education and forestry development actions. The program also encourages forestry actions using planted forests, the enrichment of secondary forests, organic agriculture, eco-tourism, and the recovery of riparian forests, supporting the conservation of water sources. Green bond resources have funded program activities in Paraná. Between July 2018 and June 2019, more than 2,000 hectares of Permanent Preservation Areas (APPs) were recovered and 27,400 native seedlings were donated.

- **Social Forests Program:** in Paraná, it aims to assist family farmers in the municipalities of Ortigueira, Telêmaco Borba, Imbaú and Reserva with the Rural Environmental Registration (CAR)

and the Environmental Recovery Plan (PRA), in sustainable planning, and diversified use of the property, encouraging family farming, staying in the field, developing the region's production and consumption chain and entrepreneurship. Carried out in partnership with the Association for the Preservation of the Environment and Life (Aprmavi) and the Brazilian Micro and Small Business Support Service (Sebrae), the initiative was granted the 25<sup>th</sup> "Expressão da Ecologia" Award, in 2018, in the Recovery of Degraded areas category. Since May 2015, when the program began, more than 1,300 hectares of APPs and Legal Reserves have been demarcated, 190,000 native seedlings donated and 450 monitoring visits made. Over the period, 430 rural properties were or are undergoing environmental adaptation.

- **Control of exotic species (PR and SC):** carried out in Paraná and Santa Catarina, it consists of controlling the dispersal of exotic species, such as *Pinus spp*, in native areas, contributing to the recovery of degraded areas in the forest restoration process. The work is performed by field teams that hike across the areas and remove the exotic trees by mowing and cutting. From June 2018 to July 2019, control activities of exotic species in native areas covered 1,078 hectares in Santa Catarina and 744.8 hectares in Paraná.

- **Environmental projects and certifications:** resources were allocated to certification processes, removal of naturally occurring pine plants in Permanent Preservation Areas (APP), training on Sustainability Policy issues, environmental education activities, among others. Between July 2018 and June 2019, 295 hours of training were conducted.



• **Small and Medium Producers Forest Certification Program:** it encourages rural producers in the Middle Tibagi River, Paraná, members of Klabin's Forest Promotion Program, to obtain the FSC® (Forest Stewardship Council®) certification. The seal recognizes responsible forest management and the environmental gains are significant: through the forest landscape planning model, the pine and eucalyptus areas are interspersed with preserved natural forest stretches on Klabin or partner properties, forming ecological corridors in the regional landscape. In addition, the certification adds value to the wood marketed by these producers, benefiting the entire production chain. Klabin funds the process and provides expert advice. There are now more than 47,000 hectares of 177 certified rural properties.

• **Property Protection in Paraná:** activities and structure that comprise the company's property protection initiatives in forest areas. 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 structure includes mobile patrols, surveillance towers and communication equipment for the permanent monitoring of forest areas, totaling 394,000 hectares of protected area. The team consists of 78 dedicated professionals. From July 2018 to June 2019, 105.6 hectares of burned area were recorded.

• **Environmental Protector Program:** theoretical and practical training for elementary school students on nature conservation, environmental legislation, aspects of local fauna and flora, first aid, civics, morals and ethics, aimed at educating multipliers in environmental education. Run by the Environmental Police of Santa Catarina, it has been supported by Klabin since 2005. Since then, it has benefited over 345 teenagers between 11 and 14 years of age. In 2018, a class of 25 students graduated in Correia Pinto and, in 2019, 30 teenagers are undergoing training in Otacílio Costa.

• **Força Verde Mirim Program:** intended for elementary school students of the 4th and 5th grades in municipal schools of Paraná. It aims to promote environmental education and raise awareness about the environment and the importance of preserving natural resources, through theoretical and hands-on activities. The project is carried out in partnership with the State Environmental Military Police and the local Departments of Education. In 2018, it was exclusively focused on the rural area of Caeté, in the municipality of Ortigueira. Between July 2018 and June 2019, 25 children were assisted by the program, totaling 60 hours of environmental activities performed.

• **Crescer Project:** continuous training of direct and indirect employees on environmental issues, health, family management, quality of life and professional

growth, among other topics. From July 2018 to July 2019, 4,609 employees were trained in four cycles.

• **Biodiversity Monitoring Program:** maintenance activities within the Continuous Monitoring Program for Fauna and Flora developed by Klabin for the purpose of verifying the impacts of the forestry management on the behavior of the species and adopting prevention and mitigation measures. Allocated resources have funded program activities in Paraná. By July 2019, Klabin had identified 618 fauna species (20 endangered species) and 62 flora species (10 endangered species) in its areas of operations in Paraná, included in the Red List of Threatened Species of the International Union for Conservation of Nature (IUCN) with a conservation status in its operating areas.

## IMPACT REPORT ON PROJECTS FINANCED IN THE NATIVE FOREST RESTORATION AND CONSERVATION OF BIODIVERSITY CATEGORY

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Identified species of fauna and flora through the monitoring activities	July/2018 to June/2019	Fauna: 738 species (618 species with recognized conservation status by IUCN) Flora: 1,146 species (62 species with recognized conservation status by IUCN)
Permanent Protection Areas (APPs) recovered through the program Matas Legais	July/2018 to June/2019	2,060.2 ha
Rural properties with environmental adaptation through the Social Forest program; demarcated hectares; native seedlings donated; visits and monitoring	July/2018 to June/2019	80 properties undergoing environmental adaptation; 175 hectares of demarcated APP and Legal Reserve areas; 27,400 native seedlings donated; 85 visits and monitoring carried out
Certified property areas (in hectares)	July/2018 to June/2019	85,040.31 ha (total area PR e SC)





**CATEGORY** | Native Forest Restoration and Conservation of Biodiversity

**PROJECT** | Ecological Park

**INVESTMENT IN THE PERIOD (USD MI)** | 672.15

## DESCRIPTION

**K**labin maintains an Ecological Park at the Monte Alegre Farm in Telêmaco Borba (PR), which dedicates its operations to the conservation and study of the behavior of endangered species, promoting their reproduction and reintroduction into the environment. The site also houses animals at risk and unable to return to the wild, such as animals hit by cars on local roads. About 180 specimens of 50 species live in the Park's nursery.

The park covers 11,000 hectares, of which 71% are natural forests. The Park is an Area of High Conservation Value (AAVC), which means that it has a significant concentration of flora and fauna specimens important to biodiversity, in addition to rare ecosystems that are endangered or threatened with extinction.

In 2014, the Ecological Park classification went from scientific breeding to a zoological garden, which allowed it to broaden its performance in the maintenance of the animal species in several models of projects and also as a center of fauna rehabilitation. Investments were required on several fronts for this purpose.

The allocated green bond resources funded projects to build new structures, renovate existing facilities and fund the staff dedicated to the animals. Investments between July 2018 and June 2019 were applied in the construction works, which had reached 98% completion by the date this report was closed.

In the period, the highlight was the installation of pavers, pavement composed, in part, by waste from Klabin's industrial process, which is processed by other companies and bought back by the company, under the circular economy concept. The Ecological Park already adopted this model by purchasing, for example, products from farmers participating in the Matas Sociais Project for animal feed.

Funds were also invested in the purchase of two electric cars for in-park routes, such as animal feeding and material transportation routes and guided tours. The new vehicles bring ergonomic benefits, optimize tasks that were previously performed on foot and generate environmental gains by replacing the use of non-renewable fuel, such as gasoline, with electricity.

## IMPACT REPORT ON PROJECTS FINANCED IN THE NATIVE FOREST RESTORATION AND CONSERVATION OF BIODIVERSITY CATEGORY

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Births of reproduced animal species	July/2018 to June/2019	4 individuals, 2 of which are members of the Red List of Threatened Species of the International Union for Conservation of Nature (IUCN)
Endangered animals, according to the Red List of Threatened Species of the International Union for Conservation of Nature (IUCN)	June/2019	53% of all the animals, considering the herd's individuals and sheltered animals
Assistance to animals at risk	July/2018 to June/2019	6,087 medical appointments







**CATEGORY** | Sustainable Water Management

**PROJECT** | Improvement on the Biological Treatment System and Final Effluent Quality

**TOTAL INVESTMENT (USD MI)** | 51.06

**INVESTMENT IN THE PERIOD (USD MI)** | 50.78

**DESCRIPTION**

**W**astewater disposal is one of the focus of Klabin’s environmental management, such as the investments made in recent years at the Effluent Treatment Plant (ETP) of the Packaging Unit in Itajaí, Santa Catarina. Initiatives include improvements to the Biological Treatment System and Final Effluent Quality, to which green bond resources have been allocated.

Implemented in 2018, the project consisted of the automation of the biological phase of the ETP, responsible for the treatment of the effluent organic matter. The change in aeration systems, previously mechanically operated, promoted system stability, since the oxygen release is now carried out automatically through sensors. System oxygenation efficiency balances nutrients and represents a

significant gain in effluent quality, part of which is reused in the Unit’s sanitary discharge, gardening and cleaning, and part discarded as per legal requirements.

Parameters to measure effluent quality show a reduction of 46% and 25% (BOD\* and COD\*\*, respectively). The benefits go beyond sustainable water management. In the event of a power outage, the intelligence of the new system allows for a reduction in electricity consumption at the plant of about 30,240 kW/year, equivalent to three months of aerator operation.

\*BOD = amount of oxygen consumed to break down the organic matter present in water.

\*\*COD = amount of oxygen needed to break down organic matter by chemical means.

**IMPACT REPORT ON PROJECTS FUNDED IN THE SUSTAINABLE WATER MANAGEMENT CATEGORY**

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Concentration of Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD)	June/2019	Improved effluent biodegradability with 46% reduction in BOD (6.4 mg/l) and 25% COD (11.9 mg/l)



**CATEGORY** | Products that are Eco-efficient and/or Adapted to the Circular Economy, Production Technologies and Processes

**PROJECT** | Diluted Non-Condensable Gas (DNCG) Treatment System Installation in the Pinto Belt Unit (SC)

**TOTAL INVESTMENT (USD MI)** | 5,994.70

**INVESTMENT IN THE PERIOD (USD MI)** | 4,034.12

**DESCRIPTION**

**A**lthough the characteristic odor generated from the pulp manufacturing process is not harmful to health, reducing it is one of the challenges faced by the sector’s plants worldwide. Klabin is no different. In order to reduce this type of impact, benefiting the communities around the factory, the company installed a system for collecting and burning diluted non-condensable gases (DNCG), one of the gases generated in the process that, when released into the atmosphere, is responsible for the odor.

The green bond resources allocated to the project financed, between July 2018 and June

2019, the installation of the system that collects DNCG in previously mapped generating sources and sends them for incineration in the Power Boiler. The system, which at the close of this report was in the installation completion and alignment phase, already showed significant results: the release of these gases into the atmosphere took place for only 74 minutes per day, which represents just over 5% of the total operating time. Previously, all DNCG released during the process was sent to the atmosphere. The goal is for 100% of these gases to be collected and incinerated.

**IMPACT REPORT ON PROJECTS FUNDED IN THE CATEGORY OF PRODUCTS THAT ARE ECO-EFFICIENT AND/OR ADAPTED TO THE CIRCULAR ECONOMY, PRODUCTION TECHNOLOGIES AND PROCESSES**

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
DNCG emission during the pulp manufacturing process into the atmosphere	June/2019	Decreased atmospheric DNCG emissions (94.86% of total operating time per day), reducing community complaints for odor



**CATEGORY** | Products that are Eco-efficient and/or Adapted to the Circular Economy, Production Technologies and Processes

**PROJECT** | Noise Reduction Projects

**TOTAL INVESTMENT (USD MI)** | 181,533.58

**INVESTMENT IN THE PERIOD (USD MI)** | 170,204.83

## DESCRIPTION

In 2018, Klabin began a system improvement plan for the Monte Alegre Unit in Telêmaco Borba (PR), with the aim of modernizing the plant and further reducing the impacts of its operations, benefiting the communities living in the plant surroundings. The installation of silencers on Paper Machines 6 and 7 and the Power Boiler 6, which is responsible for energy production, is among the noise reduction projects with allocated green bond resources.

The project consisted of the installation of noise attenuation devices at the edges of the steam outlet pipes of the machines and the boiler,

whose work was completed during Unit's general shutdown in May 2019.

Since the devices have been deployed, Klabin has been constantly testing the performance and operation of silencers by measuring the sound's noise range. Records indicate gradual reductions. The main point of reference is the Unit's aerial tram, where measurements indicated the volume of 52 decibels, on average, below the target limit of 60 decibels.

## IMPACT REPORT ON PROJECTS FUNDED IN THE CATEGORY OF PRODUCTS THAT ARE ECO-EFFICIENT AND/OR ADAPTED TO THE CIRCULAR ECONOMY, PRODUCTION TECHNOLOGIES AND PROCESSES

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Noise level	June/2019	Volume reduction below target (52 decibels), reducing noise complaints in communities





**CATEGORY** | Products that are Eco-efficient and/or Adapted to the Circular Economy, Production Technologies and Processes

**PROJECT** | Main CNCG and DNCG Gas Incineration System and Monte Alegre Plant Reserve

**TOTAL INVESTMENT (USD MI)** | 9,196.03

**INVESTMENT IN THE PERIOD (USD MI)** | 2,149.74

**DESCRIPTION**

The system improvement plan of the Monte Alegre Unit in Telemaco Borba (PR), with the objective of modernizing the paper mill and further reducing the impacts of its operations, included changes to the gas treatment system with the installation of a new incinerator for uptake and treatment of non-condensable (NCG), diluted (DNCG) and concentrated (CNCG) gases. The project, financed by green bond funds, began in the second quarter of 2019.

The new incinerator features a 60-meter chimney, which contributes to the dispersion of treated gases into the atmosphere. With this new piece of equipment, in addition to an existing incinerator, which will be renovated, the factory increases prevention levels in case one of the devices fails. In addition, the lime kiln, equipment that treats the lime sludge from pulp production, is used as a third backup.

The new system goes live on a trial basis in the second half of 2019 and is expected to be fully operational by early 2020. Its burning capacity is of 54,000 Standard Cubic Meter per hour (Nm<sup>3</sup>/h) of CNCG

and DNCG. The content of TRS (Total Reduced Sulfur) with H<sub>2</sub>S (Sulfuric Acid), substances responsible for the characteristic odor of production should be equal to or less than 10 mg/Nm<sup>3</sup>. The initiatives also contribute

to the reduction of particulate matter content in the chimney, expected to reach a maximum of 50 mg/Nm<sup>3</sup>; and with an SO<sub>2</sub> content at the outlet of the incinerator chimney of 280 mg/Nm<sup>3</sup> or less.

**IMPACT REPORT ON PROJECTS FUNDED IN THE CATEGORY OF PRODUCTS THAT ARE ECO-EFFICIENT AND/OR ADAPTED TO THE CIRCULAR ECONOMY, PRODUCTION TECHNOLOGIES AND PROCESSES**

PERFORMANCE INDICATOR	PERIOD	ENVIRONMENTAL BENEFITS
Monitoring of atmospheric emissions	From January/2020	Reduction of atmospheric emissions concentration, such as particulate matter, SO <sub>2</sub> (280 mg/Nm <sup>3</sup> ) and TRS (total reduced sulfur)
DNCG emission during the pulp manufacturing process into the atmosphere	June/2019	Decreased atmospheric DNCG emissions (54,000 Nm <sup>3</sup> /h), reducing community complaints for odor



## APPENDIX A

### MANAGEMENT REPORT ON ELIGIBLE PROJECTS

Klabin is responsible for 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 approximately BRL 149 million (equivalent to approximately USD 39 million) were invested between July 2018 and June 2019 (Green Bond 27), and approximately BRL 6.5 million between April 2019 and June 2019 (Green Bond 49) in qualified eligible projects that meet the following Eligibility Criteria:

CRITERIA	DESCRIPTION
<b>Renewable Energy</b>	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.
<b>Sustainable Forestry Management</b>	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 timber.
<b>Native Forest Restoration and Conservation of Biodiversity</b>	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.
<b>Sustainable Water Management</b>	Green bond resources may be allocated to capital expenditures necessary to build and maintain infrastructure that reduces water consumption in the industry.
<b>Products that are Eco-efficient and/or Adapted to the Circular Economy, Production Technologies and Processes</b>	Green bond resources can be allocated to expenses that support Klabin's Industrial and Forestry Research Centers; facilitate the use of packaging made of FSC® certified raw materials and recycled materials; promote less use of packaging materials and prolong the shelf life of packaging materials.

## APPENDIX B

### Average exchange rate BRL/USD

2018	2019
3.8806	3.8459

### USE OF RESOURCES

ELIGIBILITY CRITERIA FOR INITIATIVES	INITIATIVES	BRL Mi		USD Mi	
		2018 (Jul to Dec)	2019 (Jan to Jun)	2018 (Jul to Dec)	2019 (Jan to Jun)
Renewable Energy	Improvements on the Power Boiler Biomass Silos	-	1,749.68	-	454.95
	Smart Blowing System Installation in the Recovery Boiler	-	1,956.00	-	508.59
	Tall Oil Plant	-	6,480.39	-	1,685.01
Sustainable Forest Management	Purchase of Wood	-	112,021.55	-	29,127.53
Native Forest Restoration and Conservation of Biodiversity	Programa Matas Legais (Good Forests Program)	7.92	56.01	2.04	14.56
	Matas Sociais Program	411.27	200.68	105.98	52.18
	Control of Invasive Exotic Species PR	406.60	455.54	104.78	118.45
	Control of Invasive Exotic Species SC	373.74	335.63	96.31	87.27
	Environment and Certifications	954.50	858.39	245.97	223.20
	Forest Certification Program for Small Rural Producers	15.05	27.92	3.88	7.26
	Property Protection (Control of occurrences/damage to property and fire protection)	177.96	1,586.01	45.86	412.39
	Environmental Protection Program	13.37	14.91	3.45	3.88
	Força Verde Mirim Program	9.80	6.67	2.53	1.74
	Projeto Crescer [Growing Up Project]	36.84	36.84	9.49	9.58
	Biodiversity Monitoring Program	-	51.95	-	13.51
	Klabin Ecological Park	1,439.52	1,158.38	370.95	301.20
Sustainable Water Management	Improvement on the biological treatment system and final effluent quality	18.39	177.06	4.74	46.04
Products that are Eco-efficient and/or Adapted to the Circular Economy, Production Technologies and Processes	Diluted Non-Condensable Gas (DNCG) Treatment System Installation	9,775.39	5,826.85	2,519.04	1,515.08
	Noise Reduction MA MP6	10.26	57.27	2.64	14.89
	Noise Reduction MA CD6	9.12	331.71	2.35	86.25
	Noise Reduction MA MP7	136.99	113.09	35.30	29.40
	Main CNCG and DNCG Gas Incineration System and Monte Alegre Plant Reserve	-	8,267.69	-	2,149.74
<b>Subtotal</b>		<b>13,796.72</b>	<b>14,1770.23</b>	<b>3,555.31</b>	<b>36,862.69</b>
<b>TOTAL</b>		<b>BRL 155,566.95</b>		<b>USD 40,418.00</b>	

## APPENDIX C



### ASSURANCE STATEMENT – BUREAU VERITAS

Bureau Veritas Certification Brasil (Bureau Veritas) was engaged by Klabin S.A. (Klabin) to provide reasonable assurance over Klabin's Green Bond Report, dated September 2019.

This assurance was conducted by a multidisciplinary staff with expertise in financial and non financial data.

### CONCLUSION

Based on the work we have performed and the evidence we have obtained we believe that Klabin's Green Bond Report has been properly prepared, in all material respects, following the reporting criteria.

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

### SCOPE OF WORK

The scope of this verification covered:

1. Sustainable forestry management;
2. Restoration of native forests and conservation of biodiversity
3. Renewable energy
4. Sustainable Water Management
5. Eco efficient Products, production technology and processes

The verified data and information refer to the period from July 2018 to June 2019.

This assurance was performed due to the issuance of USD 1 billion in Green Bonds by Klabin Finance S.A. on September 2017 and April 2019, guaranteed by Klabin S.A.

The scope of our work was limited to assurance over the allocation of bond proceeds and impact reporting as stated in Klabin's Green Bond Report, dated September 2019.

Financial data were verified in local currency (Reais).

### KLABIN AND BUREAU VERITAS RESPONSIBILITIES

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

## METHODOLOGY, LIMITATIONS AND EXCLUSIONS

The Assurance covered the following activities:

1. Interviews with the personnel responsible for the Green Bond Report preparation, evaluation and monitoring, specially the areas of sustainability, treasure, environmental (forestry and industry), and controlling;
2. Traceability of financial and non financial data, including planning and monitoring of disbursed proceeds;
3. On site visits to Klabin's Puma Unit at Ortigueira (PR), to collect evidence of investments associated to Green Bonds;
4. On site visits to partners areas engaged with the projects "Matas Sociais" and "Matas Legais", to collect evidence of restoration of native forests, water resources and biodiversity conservation;

The level of verification adopted was Reasonable, according to the requirements of the ISAE 3000<sup>1</sup> Standard<sup>1</sup>, which were incorporated to the internal assessment protocols of Bureau Veritas.

Excluded from the scope of this work was any assessment of information related to activities outside the defined assessment period.

The verification process has, given the Reasonable level, some limitations as to the identification of mistakes and omissions.

## TECHNICAL OPINION - SUSTAINABLE FOREST MANAGEMENT

- We evidenced the use of Green Bonds proceeds in areas that are properly certified by FSC® ;
- We evidenced appropriated systems that support process flows and operational costs control regarding the use of proceeds from green bonds issued between July 2018 and June 2019.

## TECHNICAL OPINION – RESTORATIONS OF NATIVE FOREST AND CONSERVATION OF BIODIVERSITY

- We evidenced appropriate increase of biodiversity in areas engaged with the projects Matas Sociais and Matas Legais;
- Klabin's restoration areas contribute directly to carbon sequestration.

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

## TECHNICAL OPINION – WASTE, WATER AND ENERGY MANAGEMENT (INCL. ENERGY EFFICIENCY)

- During our visit we evidenced the renovation of the recovery boiler biomass silos at the Puma unit;
- We evidenced the installation of an intelligent blowing system in the recovery boiler at the Puma unit.
- At the Puma unit we also evidenced the installation of a Crude Tall Oil production unit;.

## DECLARATION OF INDEPENDENCE AND IMPARTIALITY

Bureau Veritas Certification is an independent professional services firm specializing in Quality, Environmental and sustainability Management Systems, among other, with more than 185 years' experience in independent assessment.

Bureau Veritas has a quality management system that is certified by a third party, according to which policies and documented procedures are maintained for the compliance with ethic, professional and legal requirements.

The assessment team has no links with Klabin and the assessment is performed independently. Bureau Veritas implemented and follows a Code of Ethics throughout its business, in order to assure that its staff preserve high ethical, integrity, objectivity, confidentiality and competence/ professional attitude standards in the performance of their activities.

At the end of the assessment, a detailed report was drawn up, ensuring traceability of the process. This Report is kept as a Bureau Veritas management system record.

## CONTACT INFORMATION

Bureau Veritas Certification is available for further clarification on [www.bureauveritascertification.com.br/faleconosco.asp](http://www.bureauveritascertification.com.br/faleconosco.asp) or by telephone (55 11) 2655-9000.

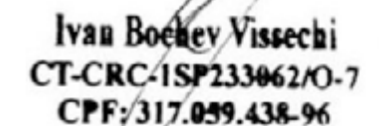
São Paulo, Brazil, September 2019.



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