

# INDEPENDENT OPINION

## Framework for Green Financing of Companhia Brasileira de Alumínio



**SITAWI Finanças do Bem**

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 **SITAWI**  
FINANÇASdoBEM

# About SITAWI

SITAWI is a Brazilian organization that mobilizes capital to achieve a positive social and environmental impact. We create financial solutions to deliver a social impact and advise the financial sector on how to incorporate social and environmental matters into their strategy, risk management and investment evaluations. We are one of the 5 top socio-environmental research institutions for investors according to *Extel Independent Research in Responsible Investment – IRRI 2019* and the first Latin American organization to rate green bonds and loans.

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# I. Scope

This Independent Opinion assesses whether CBA's Green Financing Framework qualifies as a Green Bond or Loan. The proceeds secured by these financial instruments will be used for refinancing, future spending and operational costs of projects with environmental benefits.

SITAWI applied its proprietary analysis model, aligned with Green Bond/Loan Principles (GBP/GLP)<sup>1</sup>, the UN's Sustainable Development Goals (SDGs)<sup>2</sup> and other internationally recognized sustainability standards.

SITAWI's opinion is based on:

- The characteristics of the company's framework
- Draft green financing contracts with potential partner banks
- CBA's environmental, social and governance (ESG) performance, based on evaluating corporate policies and practices

This Opinion's analysis relied on information and documents provided by CBA, some of which are confidential, desk research, information obtained from interviews with multiple company departments and a visit to the Alumínio plant in São Paulo. This process took place between December 05 and January 21, 2020.

SITAWI had access to all documents requested and personnel and can therefore provide an opinion with a reasonable level of assurance regarding completeness, accuracy and reliability.

The Green Financing's classification will be confirmed one year after the first transaction, based on a new verification to be carried out by SITAWI.

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<sup>1</sup> <https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/e>  
[https://www.lma.eu.com/application/files/9115/4452/5458/741\\_LM\\_Green\\_Loan\\_Principles\\_Booklet\\_V8.pdf](https://www.lma.eu.com/application/files/9115/4452/5458/741_LM_Green_Loan_Principles_Booklet_V8.pdf)

<sup>2</sup> <https://nacoesunidas.org/pos2015/agenda2030/>

## II. Opinion

SITAWI can confirm that the operations comprising CBA's Green Financing Framework are eligible for classification as Green Bonds/Loans, positively contributing to sustainable development.

This conclusion is based on the following two analyses:

- Framework (section III)
  - a. The capital raised will be used to reimburse expenses, future spending and operating costs of CBA projects with environmental benefits, such as pollution prevention, climate change mitigation and water conservation.
  - b. The categories of specific projects and activities that will use the capital are set out in the Framework. They offer tangible environmental benefits, which are managed by suitable environmental management systems aligned with CBA's strategy.
  - c. The Company has clearly defined the procedures for managing capital raised via green financing.
  - d. The company has committed to annually reporting to creditors and/or investors the allocation of capital to and the environmental benefits of the projects.
- Issuer (section IV)
  - a. CBA boasts a superior ESG performance, excelling in corporate governance and social matters and performing comfortably in environmental matters.
  - b. We identified one-off issues involving the company, which were adequately managed and resolved.
  - c. Therefore, we consider the company apt to manage and mitigate ESG risks posed by all of its activities.

### Technical team responsible



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## Declaration of Liability

SITAWI<sup>3</sup> has never provided any services to and is not a shareholder, client, supplier or related party of CBA or its parent company and is qualified to issue an independent opinion.

The analyses set out in this opinion relied on a series of documents, including confidential documents, provided by the Company. We cannot attest to the completeness, accuracy or veracity thereof. SITAWI is not therefore liable for the information set out in this opinion.

We therefore emphasize that none of the assessments and opinions set out in this report constitute an investment/financing recommendation for the company.

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<sup>3</sup>The ultimate owner of this report is KOAN Finanças Sustentáveis Ltda., which trades under the name SITAWI Finanças do Bem

### III. Framework Analysis

CBA has an in-depth portfolio of primary and downstream aluminum products, and is responsible for all stages of manufacturing, from mining and bauxite processing to finishing end products. This vertically integrated business model provides greater control over the socio-environmental performance across the aluminum chain. The company supplies its products to the domestic and international markets, to multiple sectors, such as the automotive, transportation, packaging and civil construction industries.

CBA's Green Financing Framework stipulates that capital raised under green financial instruments will be allocated to projects and assets with a positive environmental impact. These projects and assets are aligned with the categories listed by the Green Bond Principles (GBP) and Green Loan Principles (GLP), as well as the UN's Sustainable Development Goals (SDGs), which define a set of global sustainable development priorities for 2030.

GBP/GLP are guidelines that help the market understand key reasons why a financial product qualifies as Green. Further details about these principles can be seen in the section **Method**.

Whilst voluntary, complying with these principles shows investors, banks and other market agents that the company is following adequate sustainability and transparency standards.

In the subsections below we analyze CBA's alignment to the Green Financing Framework with the four core components of the GBPs.

#### Use of Proceeds

Brazil is the 14<sup>th</sup> largest producer of aluminum and the 4<sup>th</sup> largest producer of bauxite in the world. In 2018 the Aluminum Industry reported a Balance of Trade of USD 2 billion, accounting for 1.7% of Brazil's exports. In this year, the sector's sales reached R\$ 61.5 billion (ABAL, 2019).

CBA is the largest primary aluminum producer in Brazil and the second largest in terms of installed capacity. It is engaged in mineral extraction and aluminum downstream production, which are considered resource intensive with a high degree of exposure to adverse socio-environmental risks. The movement of enhancing the company's sustainability practices through the financing of GBP/GLP projects is therefore crucial to the sector's sustainable development in Brazil.

The key socio-environmental issues in aluminum production are related to: guaranteed access to natural mineral resources, energy sources and energy efficiency, biodiversity, climate change, waste management, tailings dam safety and atmospheric emissions, in addition to Occupational Health & Safety issues (IBRAM, 2012).

CBA's Green Financing Framework states that capital raised under green financial instruments be used to reimburse costs, future spending and operations of projects and assets with a positive environmental impact in the following GBP/GLP categories: pollution prevention and control (climate change mitigation and waste management) and the sustainable management of water and wastewater.

Overall, CBA's projects to be supported by green financing complies with SDGs 9 and 12. The first has the aim of "building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation". In particular, the company will

contribute to target 9.4 of “upgrading infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes by 2030”. SDG 12 as the target of “ensuring sustainable consumption and production patterns”. The main targets CBA will contribute to are: 12.2 –“by 2030, achieve the sustainable management and efficient use of natural resources” and 12.6. – “encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle”.

The analysis below highlights the importance of the aluminum sector in developing projects aligned with the categories of the GPB/GLP.

### **Pollution prevention and control: Waste management**

Extracting bauxite and producing aluminum results in a large volume of waste which is held in wet tailings dams. This requires vegetation clearance around the dam and the site cannot be used for many years. Even low-level dams pose risks to the environment and local communities. Projects that enable the reduction of the waste produced have a meaningful environmental benefit for the sector.

These projects are also aligned with the sustainable production and consumption standards set out in SDG 12, especially in relation to the targets: 12.4 – “By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment” and 12.5 - “by 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse”.

### **Pollution prevention and control: Climate change mitigation**

The most Greenhouse Gas (GHG) Emission intensive processes in aluminum production are related to the consumption of anodic paste and the electrolysis process in smelters that generates perfluorinated compounds (PFCs), due to the anodic effect. Next are the emissions produced by consuming fossil fuels to generate steam, the leading source of emissions in the Alumina Refinery Process to obtain Primary Aluminum.

Efficiency projects for the consumption of anodic paste and production of steam by biomass boilers avoid greenhouse gas emissions and help mitigate climate change. According to SITAWI (2018), replacing fossil fuels with biomass is aligned with limiting global temperature rises to 1.5°C (the most ambitious target of the Paris Agreement). These projects are also aligned with the position of the Aluminum Stewardship Initiative (ASI) supporting the COP 21 commitment to keep global temperature rises between 1.5°C and 2° C. Lastly, these projects are aligned with SDG 13 “Take urgent action to combat climate change and its impacts”. It is particularly relevant to target 13.a. of mobilizing capital towards significant mitigation initiatives.

## Sustainable management of water and wastewater

The aluminum production process requires intensive use of water from the initial processing of bauxite, in the gas scrubbing facilities, to processes cooling primary and semi-fabricated products. The gas scrubbing process is responsible for consuming roughly 70% of CBA's plant water.

Projects to reduce the use of and reuse water in the production process are aligned with SDG 6 "Ensure availability and sustainable management of water and sanitation for all". These projects are particularly relevant to target 6.4 of "By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals".

Therefore, we can conclude that Green financing aligned with CBA's Green Financing Framework will drive sustainable development. Selected projects qualifies in the GBP categories of pollution prevention and control by mitigating climate change and waste management coupled with the sustainable management of water and wastewater. They also contribute to SDGs 6, 9, 12 and 13. These qualifications also make the Framework's financing eligible for the Green label.

## Process for Project Evaluation and Selection

The projects listed in CBA's Green Financing Framework were selected in a workshop involving the following departments: Treasury, Sustainability, Environment, Engineering and Innovation.

The table below presents the projects eligible for green financing, segmented by GBP/GLP category and performance indicators. The prospects for environmental benefits have a baseline of 2018.

GBP Category	Eligible Projects	Performance Indicators
<p><b>Pollution prevention and control: climate change mitigation</b></p>	<ul style="list-style-type: none"> <li>• <b>Green Soderberg:</b> automates the process of supplying anodic paste comprised of coal-tar pitch, thereby reducing its consumption. This project also reduces the number of anodic effect hours, thereby reducing the generation of PFCs, which have a high global warming potential. The sound functioning of this project is also related to the <b>Semi-Dry Paste</b> project, which changes the composition of anodic paste. These projects are jointly expected to reduce smelter GHG emissions by 9.7%.</li> <li>• <b>The Biomass Fire Boiler of the Alumina operation:</b> Biomass will be used as an alternative and renewable source of energy. The new boiler will replace the natural gas and fuel oil boilers used to produce Alumina. An annual reduction of 221,124 tCO<sub>2</sub>e is estimated, or a 40% reduction in Alumina production and 16% reduction in emissions across the plant.</li> </ul>	<p>Direct greenhouse gas emissions avoided by ton of aluminum production (tCO<sub>2</sub>e/ton production)</p>



<p><b>Pollution prevention and control: Waste management</b></p>	<ul style="list-style-type: none"> <li> <p><b>Filter Press:</b> This project aims to change the means of disposal by shifting from wet disposal (with a low concentration of solids) to dry disposal. This process aims to reduce by 13% volume of waste created in the dam and increases the dam's useful life by 20 years, avoiding environmental impacts of building a new dam. This also enables the reutilization of 11% of the caustic soda present in the filtered liquid fraction.</p> </li> </ul> <p>Decrease in the volume of waste generated by ton of aluminum production (t of waste/ ton of production)</p> <p>Decrease in raw materials consumption by ton of aluminum production</p>
<p><b>Sustainable management of water and wastewater</b></p>	<ul style="list-style-type: none"> <li> <p><b>Green Soderberg:</b> after modernizing all of the smelter furnaces, it is possible to discontinue gas scrubbing, thereby eliminating the consumption of industrial water in the plant. The project has the total potential to annually reduce the consumption of industrial water by 2.7 million cubic meters, accounting for 70% of the plant's industrial water volume.</p> </li> <li> <p><b>Filter Press:</b> The project enables the reuse of water stored in the dam tailings through a process of filtering and pressing the tailings. The project could annually reduce the consumption of water by 89 thousand m<sup>3</sup>, a 10% decrease in the consumption of new water in alumina production and 3% in the plant's consumption.</p> </li> </ul> <p>Decrease in water consumption by ton of aluminum production (m<sup>3</sup>/ton of production)</p>

CBA has a formal Sustainability Strategy, which seeks to address global megatrends: planet under pressure, hyper-transparency in relations, a diversified energy matrix and change in the production pattern. Regarding these topics, the company addresses matters including: climate change, natural resource efficiency, greater share of renewable energy sources, relations with society, independent certifications, anti-corruption policies, valuing safety and living standards, as well as the circular economy and reverse logistics. The company has clear targets to be followed for each of these matters. We therefore point out that the projects listed by the Framework are aligned with the company's strategy.

According to SITAWI's analysis, Companhia Brasileira de Alumínio presents an above average performance in corporate management of environmental, social and governance (ESG) matters. It has official procedures and systems to manage potential risks and impacts due to the company's activities. The plant's environmental management and mining activity systems are both ISO 14.001 certified and its quality management model is ISO 9.001 certified.

The company also has two certifications from the Aluminum Stewardship Initiative (ASI): one for the Operation Performance Standard for aluminum production and another for the Chain of Custody Standard, which sets out requisites for controlling aluminum production throughout its chain.

We conclude that the internal processes for project evaluation and selection are transparent and underpinned by robust eligibility criteria. The projects are aligned with Companhia Brasileira de Alumínio's strategy and offer environmental benefits, thereby driving sustainable development.

### Management of Proceeds

The proceeds raised under Green Financing will be used to reimburse costs incurred within 24 months before the date of each operation; future spending and operations of the projects and assets charted by CBA's Green Financing Framework which have environmental benefits.

Under the Framework, these proceeds will be managed by CBA's Treasury Department using its SAP system until they have been completely allocated to the projects. These proceeds can be temporarily used to meet the aluminum plant and mining operation's cash requirements, which are certified by the ASI sustainability Standard, and short-term investments compliant with CBA's financial policy. Analyzing CBA's investments portfolio reveals investments are concentrated in Brazilian federal government bonds. The risk of the funds being allocated, even if only temporarily, to activities not aligned with the Framework are therefore minimal.

Our analysis on the management of proceeds found that there is a clear and transparent procedure in place to ensure the proceeds are allocated to projects sustaining the Green Financing classification for operations aligned with CBA's Green Financing Framework.

### Reporting

After the bonds have been issued or green loans received, CBA undertakes to monitor and report financial and environmental information about the projects. These results will be tracked to ensure the allocated proceeds and performance of the projects remains aligned with the Framework's eligibility criteria.

Allocating proceeds to eligible assets will be reported annually to creditors and/or investors.

Companhia Brasileira de Alumínio also undertakes to report the impacts of projects receiving proceeds from green financing until their respective maturities, redemptions or early settlement. The impacts will be measured by performance indicators measured in the section "Process for Project Evaluation and Selection". The corporate environmental indicators will continue to be reported in the Sustainability Report and can reflect the improvement achieved by implementing the financed projects.

Furthermore, the commitments described herein will undergo external assessment within one year after the Green financial operations are taken out. This assessment will embrace all transactions that are still ongoing. The independent opinions will be made available to investors and creditors.



We therefore conclude that the company has clearly defined the content and means of the financial and environmental indicators' reports to its stakeholders. The indicators are aligned with sound international practices and GBP/GLP principles.

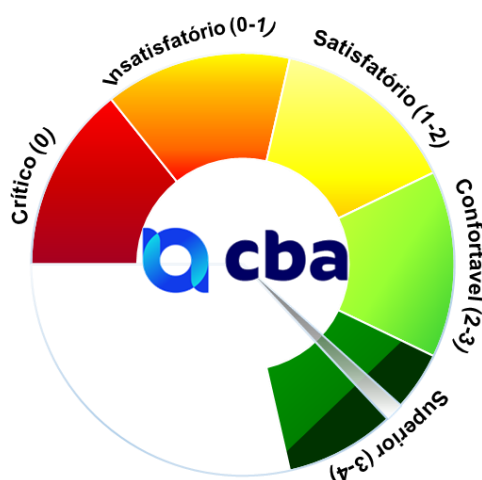
## **IV. The ESG Performance of Companhia Brasileira de Alumínio (CBA)**

Companhia Brasileira de Alumínio (CBA) was founded in 1941 to explore and process bauxite reserves. In addition to primary aluminum, it also supplies semi-fabricated products. Today it is the second largest producer of primary aluminum in Brazil. The company is controlled by Votorantim S.A, but has an independent structure.

Its industrial plant is located in the municipality of Alumínio, in São Paulo state. It is currently exploring bauxite reserves in Mirai and Itamarati de Minas, in Minas Gerais state, and Barro Alto, in Goiás state. It has a nickel plant in Niquelândia, Goiás, whose activities have currently been suspended due to the unfavorable macroeconomic and market situation. The company also operates a recycling and casting plant, Metalex, in Araçariguama (SP). CBA has a Distribution Center in Caxias do Sul (RS) too.

CBA's analysis aims to assess its capacity to measure, prevent, mitigate and offset any adverse socio-environmental impacts from its operations. It is therefore possible to ascertain its capacity to maintain unchanged the conditions that enable these projects to qualify for green financing.

We accordingly assessed the company's policies and practices. We also researched social, environmental and governance disputes involving the company and its subsidiaries.



**Company:** Companhia Brasileira de Alumínio (CBA)  
**Country:** Brazil  
**Sector (GICS):** Materials

**Strengths**

- ✓ Strategic sustainability planning with clearly defined targets
- ✓ Incorporating socio-environmental issues into leadership's variable compensation
- ✓ Official and certified environmental management procedures
- ✓ Robust tailings dam management procedures
- ✓ Official feedback and performance assessment processes

**Improvement opportunities**

- ! Photographic and spatial monitoring system of waste disposal
- ! Systematically assessing climate change risks and opportunities
- ! Socio-environmental monitoring of suppliers
- ! Supporting trade unions
- ! Fostering diversity on the board of directors

**ESG performance**

The table below provides a comprehensive analysis of the company's socio-environmental performance. In overall terms, CBA achieved a superior performance. The company has an official sustainability strategy with ambitious commitments to global megatrends: planet under pressure, hyper-transparency in relations, a diversified energy matrix and change in the production pattern. The company excels in environmental management, with an ISO 14.001 certified system in all plants, addressing matters like: biodiversity conservation, use of resources, waste management and emissions monitoring and control. The company has a robust dam management system and is in compliance with the relevant legislation and prepared for emergencies, seeking to involve all stakeholders.

However, the company could improve: waste management by purchasing a photographic and spatial waste monitoring system, monitoring suppliers' socio-environmental indicators, supporting trade unions and introducing an official Diversity Policy.

**Environmental Management and Ecosystems:** Mining has a direct impact on wildlife. However, bauxite mining has a relatively lower impact than other mineral exploration, as it is located on crest and mid-slope areas, that can easily be mined with limited excavation and without the need to form large pits. Mining takes between 3 and 6 months, and is specific, temporary and progressive. By way of its integrated policy, the company undertakes to identify, prevent, control and mitigate the environmental impacts of its operations. All of the company's operations have an environmental management system certified by NBR ISO 14001:2015. The company also has two certifications from the Aluminum Stewardship Initiative (ASI): one for the Operation Performance Standard and another for the Chain of Custody Standard. This certification covers the following environmental issues: environmental management and policy, resource efficiency, emissions, effluents and waste, water resource management and biodiversity.

All of the company's operations have the required licenses in force. Legal requisites are monitored by a specific software program. CBA has a Managerial Biodiversity Management Plan which applies to all of the company's operations. This document sets out the concepts and guidelines for managing fauna and flora, including: risk assessment, legal compliance, operational control and monitoring, training and performance indicators.

In compliance with the legislation, the company recovers areas used to extract bauxite to similar or better conditions than those in place before the mining, according to an analysis carried out by Universidade Federal de Viçosa (UFV). 56 were recovered or undergoing recovery over the course of 2018. CBA is involved in two biodiversity conservation projects: Legado das Águas, located in Vale do Ribeira, São Paulo (which belongs to the Votorantim Reserve) and Legado Verdes do Cerrado, in Niquelândia, Goiás, which the company itself is responsible for. The Vale do Ribeira reserve has 31 thousand hectares of primary forest, and is the largest Private Atlantic Forest Reserve in Brazil, preserving the spring of the Juquiá River, which serves a number of the company's hydropower plants. The other reserve, Legado Verdes do Cerrado, has 5 thousand hectares intended for the cultivation of eucalyptus and traditional crops, such as soy and corn, and the other 27 thousand hectares consists of preserved native *cerrado* vegetation. The two projects are being used to offset the legal reserve, produce native plants and eco-tourism.

In 2001 and 2004, there were two cases of wastewater leaking from systems associated with the Palmital dam, which led to the contamination of the Sorocaba River basin and consequently mass fish deaths. At the time, the company made the structural changes necessary to prevent further leakages. There were two significant events in 2018 consisting of forest fires in CBA's properties, with one in Alumínio (SP) and another in Mirai (MG). These fires were started by factors unrelated to the company's activities, both of which were controlled and reported to the respective authorities in each region.

- Use of Resources:** The company has a robust system for the efficient use of management of resources, with targets to reduce energy, fuel and water consumption. Aluminum production is energy intensive. To mitigate this impact, the company has the share control or equity interest in hydropower plants. These facilities provided 96% of CBA's energy in 2018. The company has initiatives to reduce drinking water withdrawal by recycling water and recovering water from the Palmital dam. In 2018, 85% of water was recycled at the Alumínio plant, 90.74% at Metalex and 43.3% in the mining process. The recovery of water from the Palmital dam amounted to 90 m<sup>3</sup>/h in 2018, more than double the previous year (43 m<sup>3</sup>/h). These initiatives received an honorable mention at the 13<sup>th</sup> edition of the 2018 FIEPS Water Stewardship Awards, an account of the fact that between 2015 and 2017 these measures reduced the withdrawal of freshwater for use as industrial water by 39%. CBA is also implementing the Green Soderberg project, which is modernizing production furnaces and enables the reduction of water consumption used by the gas scrubbing process, which accounts for around 70% of the plant's industrial water consumption. This technology has been introduced on a pilot basis in 36 furnaces out of a total of more than one thousand furnaces.
- Waste, effluent and emissions management:** Aluminum production produces a large volume of waste. The company has a Managerial Procedure to manage waste for all plants, thus improving compliance with legislation and the reduction, recovery and recycling of waste. CBA has set a target of reducing waste generation by 35% (tonnes per tonne produced) by 2025, based on the 2017 baseline. However, the disposal of this waste is not monitored by a photographic and spatial control system. One of the main waste products produced by the sector is Red Mud, resulting from the bauxite mining process and stored in dams. The company has two waste dams in the Itamarati de Minas and Mirai (MG) plants and two industrial waste dams in the Alumínio (SP) and Niquelândia (GO) plants.

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No dam had upstream raises, which improves safety. The company has a robust system for monitoring the safety status of its dams, comprised of more than 200 verification instruments and regular daily inspections by its operating team and fortnightly inspections by specialist professionals. CBA is also supported by an independent geotechnical engineering firm that conducts monthly dam safety assessments and six-monthly inspections and provides regular theoretical and practical training to its employees and contractors working on the dam. The company's measures adhere to the guidelines outlined as part of our Integrated Dam Safety Management System (SIGBAR) to ensure the physical integrity of our dams is maintained. According to the system, all dams have a Safety Status Index (ICS) of 'A', the highest rating there is. The company is investing in technology which will enable it to solidify 75% of the tailings in the Palmital dam, called a filter press. This reduces the risk of disasters and extends its operating lifetime by 20 years. CBA has an Operational Procedure for wastewater from the dams in extraction regions that sets out guidelines and parameters to be followed to guarantee the quality control of water downstream, which is monitored by the plants.

The aluminum production process generates atmospheric emissions of particulate matter (PM), fluoride and sulfur (Sox) and nitrogen (NOx) oxides. The company complies with the legal limits on these emissions and does not have a specific reduction initiative. Although fluoride emissions have risen due to the greater use of smelters, they remain within the legal limits. The Green Soderberg project the company is investing in will enable these emissions to be reduced and will decrease the generation of waste and consumption of water for gas scrubbing.

All of these plants and structures, including dams, have a decommissioning plan, which is updated every five years. The plan lists future use alternatives, socio-environmental risks and impacts, proposes actions and monitoring plans and a physical and financial schedule.

The company has a liability due to the inadequate storage of waste from the Alumínio plant. CBA resolved the liability in 2018 by having the waste disposed of correctly by a specialist firm. The company is outlining remediation actions for the area.

- **Climate change:** Aluminum production releases significant levels of greenhouse gases (GHG). In 2018 the company published its first ever GHG emissions inventory for 2017 emissions under the Brazilian GHG Protocol Program. The inventory data was audited by a third party accredited by Inmetro and acknowledged by the Program with the Gold Seal. According to the 2019 inventory, 2018 baseline, 3.12 t of CO<sub>2</sub>e were emitted (tons of carbon dioxide equivalent) per ton of aluminum produced, ranging from bauxite mining to the smelting process. In the electrolysis process alone, the company emits 2.5 t CO<sub>2</sub>e per ton of molten aluminum, well below the global average of 12 t CO<sub>2</sub>e per ton of aluminum, according to the International Aluminum Institute (IAI). The company has the target of reducing relative emissions (tons of GHG per metric ton produced) by 16% by 2025 in relation to 2017. In 2020, the Alumina production department plans to use biomass boilers, deactivating the gas and oil boilers, thereby reducing its emissions. The company did not systematically assess climate change risks and opportunities.

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- **Communities:** The company has a social responsibility policy geared towards its local communities, undertaking to assure their social license to operate and contribute to the independence of their geographies. The three operating pillars are education, income generation and empowerment and bolstering public management. In the education pillar, the company empowers neighboring communities to operate in the sector, with the main gateways being the Apprentice and Trainee programs. The Company invests in projects such as Empreende Alumínio, which aims to nurture and produce individual entrepreneurs, at the end of the process selecting entrepreneurs to receive seed capital and/or consultancy to implement their project. By way of the ReDes project, the company also invests in developing local production chains, generating employment and income opportunities for residents and guaranteeing the economic buoyancy of the municipalities of Mirai (MG) and Niquelândia (GO). In bauxite extraction regions, the company continually invests in projects supporting local public schools and public management through initiatives that promote fiscal balance and land-use planning.

CBA extracts bauxite from third-party land under agreements. The company determines the fair value to be paid based on standardized studies, which take into account compensation for use of the land and mining royalties.

All of CBA's dams have a Dam Safety Plan (DSP) and an Emergency Response Plan (ERP) setting out the actions to be taken according to the level of risk. The company includes educational activities about dams for affected communities in its Environmental Education Plan (EEP). It installed sirens in its tailing dams in Minas Gerais and Alumínio in São Paulo, in accordance with legal requisites, and is planning to install them in the nickel plant in Goiás state in 2020, where this is not a legal requirement.

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Dam accident drills are carried out in all regions to disseminate the escape routes and meeting points. CBA has forums to discuss dams with multiple players, including a technical team, government representatives and civil society leaders. The company provides various communication methods for communities via its website, telephone line of the community relations department and in its reception, in the event a person wishes to make a complaint in person.

The noise produced by the company's activities is periodically monitored and complies with the legal standards, not impacting local communities.

The company does not operate in traditional communities and no resettlement was necessary. The company does not have a policy covering these matters.

- **Clients:** CBA has international quality management system certification ISO 9001 (Quality Management System) and is in the process of securing IATF 16.496 certification (Automotive Quality Management System). The Company enjoys a close relationship with its clients and has jointly created specific products tailored to their requirements. The key account management (KAM) has been enhanced, which has taken the approximation between the company and its clients to a whole new level. The company has a "Contact Us" page on its website, by which any person can submit their queries, suggestions, criticisms or sales request. This channel is managed by the Communications department, which sorts the messages and forwards them to the respective departments. The company has a customer service department which handles orders. In 2018 the Company received two awards: the Gold Seal from Bemis, one of the world's leading packaging producers, in the category aluminum supplier; and the Supplier Award from Randon, in the category Innovation, Technology and Development. No issues were found in the company's relations with its clients.
- **Supply Chain:** As CBA's production process is vertically integrated (from extraction to fabrication of aluminum products), it is less exposed to the supply risk. In any event, the company has a Sustainable Supply Policy which sets out requirements for suppliers related to risk management and environmental, land-management, financial, ethical and health and safety impacts. CBA monitors and continually assesses these matters and can request suppliers carry out assessments, submit documents and fill out questionnaires. If the policy's requirements are not met, CBA can prepare an improvement plan or cancel the service provision agreement. The company does not track its suppliers' socio-environmental indicators.
- **Human Resources:** In 2018 CBA had some 4,800 employees, including permanent and temporary staff, who are officially registered in accordance with Brazil's labor legislation. The company has a formal health and safety management system, and its Niquelândia plant is ISO 45.001 certified. The company publishes its work-related accident indicators. Although our accident frequency rate rose between 2017 and 2018, from 2.57 to 2.62 for employees and from 1.48 to 2.11 for contractors, the company is still within the average for the aluminum industry as a whole. The last fatality occurred in 2006 and the company has a target of zero for such accidents. The company also has a health promotion program for all employees. CBA has the Great Place to Work certification and in 2019 was ranked amongst the best 80 companies in Brazil. Furthermore, in 2018 the company participated in an organizational climate survey and was ranked amongst the top 10% in Brazil. Our approval rating that year was 81%. CBA uses timesheets to track overtime that is either paid or credited to an hours bank. This also allows telecommuting when feasible. All company employees are covered by collective bargaining agreements, although the company does not support trade union activities. It



has a compensation policy and guidelines for internal recruitment. It uses the Votorantim Development System (SDV) as a professional development management model, which includes: training policy, performance assessments via the Nine Box platform and an Individual Development Plan (IDP). Structured feedback from the assessment process is provided to each professional every year. The Votorantim Academy also provides training on multiple topics and nurtures talent development. The company does not have a formal career plan, and career progression is based on the individual development plan and meritocracy. There is a recommended career path for operational staff, with recommended technical expertise and skills for the employee's growth. It has the Ideas Program – "IdeAI" so that employees can contribute to and express their opinions about new products and process optimization.

Its diversity policy is being constructed and expected to be introduced in 2020. Despite this, the company's integrated policy takes a stance against discrimination and supports gender and **social dimensions**. The number of women as a percentage of overall staff was 7.6% in 2019.

In light of it, we have set a target of increasing this percentage to 25% by 2022. The company has an ongoing commitment to comply with the legal quota for people with disabilities (PwDs). The company has also been carrying out activities and workshops about diversity. It is not involved in labor and/or trade union disputes.

## Superior



- Corporate Governance:** The company has a Board of Directors, where the position of chairman of the board and CEO are not held by the same person. Two of the board's five members are also independent. However, there are no women serving on the board. The board of directors addresses socio-environmental issues, like dam safety. The company does not disclose the compensation of its board of directors and executive board. Leadership compensation varies according to the Sustainability Deflator, which embraces environmental and occupational health and safety criteria, such as developing systems for drying mud in the wet washer, eliminating the disposal of organic waste in landfills and using carbonate as a byproduct. The company is not involved in any governance disputes.
- Integrity:** CBA has an effective Code of Conduct and Anti-corruption Policy, which determines rules related to attending and sponsoring political/party political activities, receiving gifts and benefits, participating in procurement procedures and merger and acquisition procedures. It also has a Compliance Program based on the Votorantim Compliance Manual which determines: legal and regulatory compliance and commitments undertaken in contracts and agreements signed; obtaining the licenses, permits and certifications necessary for its operations; the quality and veracity of all external reports issued; commitment to anti-trust principles and preventing fraud and corruption. Training is provided about these commitments. CBA has a Compliance Line for reporting any breaches of the company's codes and policies. The internal audit practice manages this channel. Suspected cases of corruption are forwarded to the legal department, which is responsible for taking the measures in accordance with the respective policy. Other cases are analyzed and referred to a committee comprised of the CEO, legal department managers and the Human & Organizational Development Department. This committee carries out audits to check whether the reported cases are founded and to determine what action should be taken. The company has an audit committee which supports the monitoring of issues related to the integrity of financial statements, internal management systems, risk management and the Compliance Program. The company is not involved in cases of corruption.
- Transparency:** The company publishes quarterly financial statements on its site along with an independent auditors' report, code of conduct, environmental, social and governance policies and its Annual Sustainability Report. Its site contains information about the board of directors and a corporate organizational chart. Environmental Impact Assessments are also published about its Environmental Licensing processes in progress. CBA does not disclose its Environmental Licensing status.

## Controversies involving the company

Environmental	Level of Severity	Response
<b>Wastewater leaks in 2001 and 2004.</b> <b>There was a mass fish death in the Sorocaba River basin in 2001</b>	<b>Significant:</b> There was material socio-environmental damage in the affected regions	<b>Remediation:</b> The company quickly rolled out structural measures to avoid such accidents re-occurring. The environmental damage was remediated naturally.
<b>Incorrect disposal of hazardous waste from the smelters upgrade (2007)</b>	<b>Significant:</b> CETESB issued an assessment	<b>Remediation:</b> A TAC (Corrective Settlement Agreement) was signed, which included removing waste from the site and the suitable disposal thereof. The company is carrying out an investigation to determine the soil remediation actions necessary.

This analysis concluded that CBA has superior ESG practices and technical know-how for its activities.

We therefore conclude that the company has complete capacity to measure, prevent, mitigate and offset risks to sustain its Green Financing classification for projects aligned with its Framework.

# Method

SITAWI's assessment relies on a proprietary methodology, underpinned by internationally recognized standards. It consists of two stages:

- 1) Assessing the financial instrument - step one assesses whether the financial instrument aims to contribute to projects with potential positive environmental impacts, in line with the concept of Green Financing. To this end, we benchmark the financial instrument against the four components of the Green Bond/Loan Principles (GBP/GLP).
  - Use of Proceeds: the purpose of the financial instrument and alignment thereof with the GBP/GLP categories.
  - Process for Project Evaluation and Selection: procedures used to choose the investment assets and projects, alignment thereof with the company's strategy and socio-environmental benefits generated.
  - Management of Proceeds: the financial management procedure for the proceeds raised, to ensure they are allocated to green projects.
  - Reporting: Disclosure of information about the control and allocation of the proceeds, and the positive impacts expected from the assets of projects.
  
- 2) The Company's ESG performance - we assess the company using our proprietary methodology which considers best sustainability practices, underpinned by internationally recognized standards. The main matters analyzed are:
  - Policies and practices for measuring, preventing, mitigating and offsetting the ESG risks posed by its activities.
  - How the company contributes to sustainable development and climate change mitigation.
  - Controversies<sup>4</sup> involving the company.

This analysis consists of 3 dimensions and 10 topics, which are prioritized according to the materiality of each topic to the company:

*Policies and practices analyzed*

Dimension	Practices
<b>Environmental</b>	<ul style="list-style-type: none"> <li>• Environmental Management and Ecosystems</li> <li>• Use of Proceeds</li> <li>• Waste Management</li> <li>• Climate change</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li>• Communities</li> <li>• Customers</li> <li>• Supply chain</li> <li>• Human resources</li> </ul>
<b>Superior</b>	<ul style="list-style-type: none"> <li>• Corporate Governance</li> <li>• Integrity</li> <li>• Transparency</li> </ul>

<sup>4</sup> A dispute is defined based on the publication "CONTROVÉRSIAS ASG 2016" (<https://www.stawi.net/publicacoes/controversias-asg-2016-2/>), which defines a controversy as facts published in the press, statements made by other stakeholders, such as groups of employees and social movements, and decisions taken by oversight and regulatory authorities.

## Key:

### Level of Assurance

*Levels of Assurance*

Levels of Assurance	
<b>Reasonable</b>	Able to compellingly confirm the assurance principles and objectives
<b>Moderate</b>	Able to partly confirm the assurance principles and objectives
<b>Limited</b>	Unable to confirm the assurance principles and objectives

### The company's performance level

●●●●● Superior

The company has the best practices in this dimension, setting the standard for other companies in terms of socio-environmental/ESG performance through the pursuit of innovation and continuous improvement, thereby materially contributing to sustainable development, including commitments to maintain this contribution in the long term.

●●●●○ Comfortable

The Company is performing its minimum legal compliance requisites for the specific matter, and is aligned with international sustainability standards (eg: IFC Performance Standards and others), thereby substantially contributing to sustainable development.

●●●○○ Satisfactory

The company meets minimum compliance requisites with the specific legislation.

●○○○○ Inadequate

The company does not meet minimum compliance requisites with the specific legislation.

○○○○○ Critical

The company does not present evidence of its performance in this specific dimension.

### Controversies

*Level of Severity and Response related to controversies*

Level of Severity	
<b>Insignificant</b>	Does not comply with the law and/or negatively affects stakeholders, but does not cause damage or causes minimal damage which does not require remediation.
<b>Significant</b>	Does not comply with the law and/or negatively affect stakeholders, with an average level of difficulty and remediation cost.
<b>More significant</b>	Does not comply with the law and negatively affects stakeholders, with a high level of difficulty and remediation cost.
<b>Critical</b>	Does not comply with the law and negatively affects stakeholders, with irreparable damage or damage that is difficult and costly to remediate.

### Response

<b>Proactive</b>	In addition to the company remediating a controversy, it adopts measures that go above and beyond its obligation. The company also carries out systematic procedures to prevent the problem from reoccurring.
<b>Remediation</b>	The company carries out the actions necessary to correct the damage and adequately reports this to the impacted stakeholders.
<b>Defensive</b>	The company carries out insufficient actions to correct the damage or reports it without taking corrective actions.
<b>No response</b>	The company does not carry out any action or report the controversy.

# Green Bond/Loan Principles Form

## Green Bond/Loan

### External Review Form

#### Section 1. Basic Information

**Issuer name:** Companhia Brasileira de Alumínio S.A. (CBA)

**Review provider's name:** SITAWI

**Completion date of this form:** January 20th, 2020

**Publication date of review publication:** TBD

#### Section 2. Review overview

##### SCOPE OF REVIEW

The review assessed the following elements of the framework and confirmed their alignment with the GBPs:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Use of Proceeds        | <input checked="" type="checkbox"/> Process for Project Evaluation and Selection |
| <input checked="" type="checkbox"/> Management of Proceeds | <input checked="" type="checkbox"/> Reporting                                    |

##### ROLE(S) OF REVIEW PROVIDER

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Consultancy (incl. 2nd opinion) | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification                               | <input type="checkbox"/> Rating        |
| <input type="checkbox"/> Other ( <i>please specify</i> ):           |  |

##### EXECUTIVE SUMMARY OF REVIEW

According to SITAWI, CBA's Green Finance Framework is aligned with the Green Bond Principles (GBP) and the Green Loan Principles (GLP). All net proceeds from the bonds and loans based on this framework will be allocated to reimbursements of expenses or new investments in the following categories: pollution prevention and control; and sustainable water management. Moreover, the projects outlined in the Framework are aligned with CBA's sustainability strategy.

The process for project evaluation and selection is clear and transparent. CBA has done a workshop to evaluate and select projects aligned with the GBP/GLP. The selected projects are defined at CBA Green Finance Framework and present tangible environmental benefits.

Once the first transaction is completed (bond or loan), the company commits to publish annually its environmental Key Performance Indicators (KPI) in its annual report and to build a dedicated report for investors or financiers with the following information: a) proceeds allocated per project and Framework category; b) KPIs to assess the impact from the eligible projects and assets.

The Second Party Opinion report and the Green Finance Framework will also be sent to investors or financiers.

### Section 3. Detailed review

#### 1. USE OF PROCEEDS

**Overall comment on section:** The eligible categories for the use of proceeds described in the framework include: pollution prevention and control; and sustainable water management. All categories are aligned with those recognized by the GBP/GLP.

The category Pollution prevention and control includes Green House Gases (GHG) mitigation projects, such as automation of electrolytic cells supply and lower consumption of anode paste. The same category includes Waste Management projects aiming to reduce the liquid waste of the bauxite extraction process to reduce risks of tailings dams.

Projects that promote Sustainable water management include refurbishment of the oven room to reduce water uses on particulate material filter and the reuse of water from the bauxite extraction process.

Therefore, given the explanation and conditions above, we consider that CBA's Green Finance Framework brings tangible environmental benefits, which will be evaluated and quantified by CBA.

#### Use of proceeds categories as per GBP:

- |  |   |
|--|---|
| <input type="checkbox"/> Renewable energy  | <input type="checkbox"/> Energy efficiency                                  |
| <input checked="" type="checkbox"/> Pollution prevention and control   | <input type="checkbox"/> Sustainable management of living natural resources |
| <input type="checkbox"/> Terrestrial and aquatic biodiversity conservation   | <input type="checkbox"/> Clean transportation                               |
| <input checked="" type="checkbox"/> Sustainable water management   | <input type="checkbox"/> Climate change adaptation                          |
| <input type="checkbox"/> Eco-efficient products, production technologies and processes   | <input type="checkbox"/> Other ( <i>please specify</i> ):                   |
| <input type="checkbox"/> Unknown at issuance but currently expected to conform with GBP categories, or other eligible areas not yet stated in GBPs |   |

If applicable please specify the environmental taxonomy, if other than GBPs: Not applicable

#### 2. PROCESS FOR PROJECT EVALUATION AND SELECTION

##### **Overall comment on section (if applicable):**

The process for project evaluation and selection is clear and transparent. CBA has organized an internal workshop with participation of several departments to evaluate and select projects aligned with GBP/GLP. The selected projects are defined at CBA's Green Finance Framework.



The main environmental benefits predicted (based on production of 2018) for the projects are listed below:

**Green Soderberg and Semi-Dry Paste:** a decrease of 9.7% is expected in GHG emissions and zero industrial water consumption on refurbished smelters, which could reduce total industrial water consumption by around 70%.

**Biomass boiler at Alumina:** a reduction of 40% is estimated in the Alumina process' GHG emissions, representing 16% of total factory emissions.

**Filter-press:** the tailings dam life cycle is expected to increase by 20 years. There will also be an increase of 11% in caustic soda reuse and a reduction of 10% in water consumption in the Alumina process, which represents 3% of manufacturing consumption.

The projects are aligned with CBA's Strategy aiming to reduce pressure on planetary boundaries, having goals regarding: GHG emissions, waste, water and biodiversity. The company is certified by the Aluminum Stewardship Initiative (ASI), which demonstrates best sustainable practices on the sector.

Therefore, we can conclude that the internal processes for project evaluation and selection are transparent and based on robust eligibility criteria. The projects are aligned with CBA strategy and they also have environmental benefits. We can therefore affirm that they deliver positive contributions to sustainable development.

### Evaluation and selection

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Defined and transparent criteria for projects eligible for Green Bond/Loan proceeds | <input checked="" type="checkbox"/> Documented process to determine that projects fit within defined categories |
| <input type="checkbox"/> Summary criteria for project evaluation and selection publicly available                       | <input checked="" type="checkbox"/> Other ( <i>please specify</i> ): <i>Corporate KPIs</i>                      |

### Information on Responsibilities and Accountability

- |   |   |
|---|---|
| <input type="checkbox"/> Evaluation / Selection criteria subject to external advice or verification | <input checked="" type="checkbox"/> In-house assessment |
| <input type="checkbox"/> Other ( <i>please specify</i> ):   |   |

### 3. MANAGEMENT OF PROCEEDS

**Overall comment on section (if applicable):** The proceeds from green loans/bonds will be used for both reimbursement of previous projects and financing of new eligible assets and projects aligned with CBA's framework.

In the case of reimbursements, projects will be allocated immediately by the treasury team, which avoids the risk of temporary allocation to carbon intensive investments.

When the green bond/loan will finance new eligible projects and assets, CBA commits to maintain all net proceeds managed by the Company's treasury department in cash equivalent instruments, and also in line with its financial policy, until the full allocation of these proceeds to the eligible projects. The issuer will disclose the allocation of these proceeds throughout the maturity of the bond/loan.

The company will use an internal information system to monitor the use of proceeds.

Based on our analysis of proceeds management, we can conclude that there is a clear and transparent procedure to ensure that proceeds are allocated to projects that support the Green Finance categorization.

#### Tracking of proceeds:

- Green Bond proceeds segregated or tracked by the issuer in a systematic manner
- Disclosure of intended types of temporary investment instruments for unallocated proceeds
- Other (*please specify*): Green Finance proceeds used to reimbursement of investments made up to 24 months prior to issuance.

#### Additional disclosure:

- Allocations to future investments only
- Allocation to individual disbursements
- Disclosure of portfolio balance of unallocated proceeds
- Allocations to both existing and future investments
- Allocation to a portfolio of disbursements
- Other (*please specify*):

#### 4. REPORTING

**Overall comment on section (if applicable):** After receiving the net proceeds from the green finance instrument, the issuer commits to publish annually its environmental Key Performance Indicators (KPI) in its annual report and to build a dedicated report for investors or financiers with the following information: a) proceeds allocated per project and Framework category; b) KPIs to assess the impact from the eligible projects and assets, as defined in the framework. The Second Party Opinion (SPO) report and the Green Finance Framework will also be sent to investor or financiers.

Therefore, we conclude that the Company has clearly defined the content and the reporting process of its financial and environmental indicators to be disclosed to its stakeholders. Their indicators are aligned with the international good practices and also with the GBP.

#### Use of proceeds reporting:

- Project-by-project
- Linkage to individual bond(s)
- On a project portfolio basis
- Other (*please specify*):

#### Information reported:

- Allocated amounts
- Other (*please specify*):
- GB financed share of total investment

#### Frequency:

- Annual
- Other (*please specify*): *quarterly*
- Semi-annual

#### Impact reporting:

- Project-by-project
- On a project portfolio basis

- Linkage to individual bond(s)  Other (*please specify*): *Corporate KPI*

**Frequency:**

- Annual  Semi-annual  
 Other (*please specify*):

**Information reported (expected or ex-post):**

- GHG Emissions / Savings  Energy Savings  
 Other ESG indicators (*please specify*):  
*i) waste reduction, ii) reduction of raw material consumption; iii) scrap processed; iv) material recycled; v) water reduction;*

**Means of Disclosure**

- Information published in financial report  Information published in sustainability report  
 Information published in ad hoc documents  Other (*please specify*): *dedicated report to investors or financiers*  
 Reporting reviewed (*if yes, please specify which parts of the reporting are subject to external review*): *use of proceeds; process for project evaluation and selection; management of proceeds; and reporting.*

Where appropriate, please specify name and date of publication in the useful links section.

**USEFUL LINKS** (*e.g. to review provider methodology or credentials, to issuer’s documentation, etc.*)

<https://cba.com.br/RelatorioAnual2018/>

**Review provider(s):**

**Date of publication:**

**ABOUT ROLE(S) OF REVIEW PROVIDERS AS DEFINED BY THE GBP**

- (i) Consultant Review: An issuer can seek advice from consultants and/or institutions with recognized expertise in environmental sustainability or other aspects of the issuance of a Green Bond, such as the establishment/review of an issuer’s Green Bond framework. “Second opinions” may fall into this category.
- (ii) Verification: An issuer can have its Green Bond, associated Green Bond framework, or underlying assets independently verified by qualified parties, such as auditors. In contrast to certification, verification may focus on alignment with internal standards or claims made by the issuer. Evaluation of the environmentally sustainable features of underlying assets may be termed verification and may reference external criteria.
- (iii) Certification: An issuer can have its Green Bond or associated Green Bond framework or Use of Proceeds certified against an external green assessment standard. An assessment standard defines criteria, and alignment with such criteria is tested by qualified third parties/ certifiers.
- (iv) Rating: An issuer can have its Green Bond or associated Green Bond framework rated by qualified third parties, such as specialized research providers or rating agencies. Green Bond ratings are separate from an issuer’s ESG rating as they typically apply to individual

securities or Green Bond frameworks / programs

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