

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

Founded in 1955, Companhia Brasileira de Alumínio (CBA) is a vertically integrated, sustainable producer of high-quality aluminum products. With hydroelectric generation capacity for 100% of our energy requirement, CBA's operations span both bauxite mining and processing into primary aluminum (ingots, plate sheets, billets and rod*) and semi-fabricated products (caster rolls, sheet, foil, extruded profiles and parts and components). Working closely with clients, CBA also develops tailored solutions and services, primarily for the packaging, automotive and transportation markets, helping clients to produce more lightweight, durable and sustainable products. CBA is also in the Nickel Business, currently under a temporary shutdown due to unfavorable macro-economic and market conditions.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2021	December 31 2021	Yes	3 years

C0.3

(C0.3) Select the countries/areas in which you operate.

Brazil

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

BRL

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C-MM0.7

(C-MM0.7) Which part of the metals and mining value chain does your organization operate in?

Row 1

Mining

Bauxite
Nickel

Processing metals

Aluminum
Alumina
Nickel

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, a Ticker symbol	CBAV3

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	The CBA CEO is a member of the Sustainability Committee and the Executive Sustainability Committee. He is responsible for approving projects and decisions related to climate change. For example, he was responsible for approving the study for internal carbon pricing and climate adaptation analysis, participated in preparing and approving the 2030 ESG Strategy, which provides for GHG reduction goals, and also approved our science-based target proposal sent for SBTi approval.
Chief Financial Officer (CFO)	The CBA CFO also accumulates responsibilities of CRO, CIO and CCO. He is also a member of the Executive Sustainability Committee. His role in the Committee is to assess the risks and opportunities for sustainability, including climate issues, from a financial point of view. For example, he was responsible for approving CBA's participation in CDP due to the visibility of investors. He also participated in preparing and approving of the 2030 ESG Strategy, which provides for goals for GHG reduction goals, and was responsible for approval to buy RECs to neutralize our scope 2 emissions from use of electricity.
Chief Operating Officer (COO)	The CBA COO for processed aluminum products is also a member of the Executive Sustainability Committee. His role in the Committee is to assess sustainability risks and opportunities for operations and clients, including climate issues. For example, he was responsible for approving a carbon neutralization study on aluminum foil. He also participated in preparing and approving the 2030 ESG Strategy, which provides for GHG reduction goals.
Chief Procurement Officer (CPO)	The CBA CPO is also a member of the Executive Sustainability Committee. His role is to assess sustainability opportunities and risks in the supply chain, including climate issues. For example, he was responsible for approving a Sustainable Supplies project that aims to commit our main suppliers on relevant issues, including climate. He also participated in preparing and approving the 2030 ESG Strategy, which provides for GHG reduction goals.
Other, please specify (Sustainability General Manager)	The Sustainability General Manager is responsible for defining relevant topics, scheduling meetings, supporting and monitoring decisions by the Executive Sustainability Committee. For example, he was responsible for adopting climate change guidelines for evaluation by the Executive Sustainability Committee, including advancement of carbon pricing studies in Brazil, internal approval of science-based targets and implementation of the ESG 2030 Strategy. The Sustainability Manager is responsible for analyzing new topics raised by the Executive Sustainability Committee and sharing with his team to evaluate and structure new sustainability projects and initiatives.
Other, please specify (Environmental Manager)	The Environmental Manager is also a member of the Executive Sustainability Committee. He is responsible for the environmental viewpoint in the topics discussed. For example, he is responsible for performing ASI audits. ASI is an association of best practices in the aluminum industry, which has specific certifications, including topics on greenhouse gas emissions. CBA is ASI-certified since 2019, with excellent results in audits, including GHG emissions management.
Other, please specify (Engineering and Technology Director)	The Engineering and Technology Director is also a member of the Executive Sustainability Committee. He is responsible for evaluating possible improvements that can be made through projects and innovation. For example, he is responsible for approving the inclusion of climate change issues when prioritizing projects. An example of this is a project to replace fuels in boilers, which will use biomass to replace natural gas and fuel oil. The new boiler system started operating in 2020 and obtained a 46.2% decrease in Alumina Refinery emissions compared to 2019. He is also responsible for implementing projects that contribute in reducing GHG emissions in CBA's operations and for seeking new technologies that contribute to achieving ESG 2030 Strategy goals.
Other, please specify (Casting General Manager)	The Casting General Manager is also a member of the Executive Sustainability Committee. He is responsible for the operational and primary aluminum client view on sustainability issues, including climate. For example, he is responsible for investments in a new scrap treatment line at the Metalex and Alumínio Units, with the aim of increasing use of scrap and reducing the carbon footprint from billets produced.
Other, please specify (Legal, Governance and Compliance Director)	The Legal, Governance and Compliance Director is also a member of the Executive Sustainability Committee. He is responsible for the legal aspects of decisions made by this board and supporting assessment of legal impacts by the company's activities in terms of sustainability matters and projects.
Other, please specify (Independent members)	The CBA Executive Sustainability Committee has three independent members. The first two are the director of the Votorantim Institute and the general manager of the Votorantim Reserves. They are responsible for an external view of relevant sustainability issues, including climate. For example, they have raised synergy opportunities for carbon neutralization in CBA's private reserves and in places where local communities enjoy social benefits. The last independent member is a Brazilian reference in Sustainability and is responsible for an external view in Committee discussions, benchmarks and transparency in CBA's activities.
Board-level committee	A member of the board is also on the Sustainability Committee. He is responsible for the board's opinions in the discussions. He also manages the Board's Sustainability Committee, of which the Chairman is a member. The Sustainability Committee is responsible for providing technical support to the board on sustainability issues, including climate change topics.
Board-level committee	In 2021 the Sustainability committee was created, to operate on a permanent basis, to advise the Company's Board of Directors on the following issues, among others: (i) Recommend to the Board of Directors approval of the Sustainability strategy and objectives; (ii) Recommend to the Board of Directors approval of the GRI Annual Report; (iii) Evaluate, monitor and recommend improvement of policies involving the Company's sustainability issues to the Executive Board, and when applicable to the Board of Directors; and (iv) Meet any other sustainability demands as requested by the Board of Directors. The Sustainability Committee is an advisory body to the Company's board of directors and has own internal laws.
Chief Sustainability Officer (CSO)	The CBA organizational, human development, health, safety, environment and Sustainability director is a member of the sustainability executive committee and is responsible for monitoring the main sustainability projects (including those focused on climate change) that are and will be developed by the company. This representative participated in the approval of initiatives such as submission and approval of a SBTi emission reduction target, climate adaptation project, carbon pricing, among others.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues Other, please specify (Partnerships planning)	<Not Applicable>	The Sustainability Committee and Executive Sustainability Committee are in charge of treating sustainability topics, and emissions are one of the most important subjects to the company, it appears very frequently in both committee's agenda. The sustainability committee is in charge of advising the Board of Directors on the development and implementation of the Sustainability Strategy, which includes corporate guidelines and actions in the management of environmental, social and governance issues. At the same time, the Executive Sustainability Committee was created in 2019, with the purpose of supporting the definition and implementation of the sustainability strategy, ensuring commitment by the leadership team and the topic's transversality with the company's business areas. This includes definitions related to climate change. We understand the importance of a high level of integration across the social, environmental and governance dimensions. This committee gets together once every two months and in each meeting agenda there is at least one ESG topic to be discussed. At least twice a year the goals and targets are discussed and analyzed, including water-related goals. Each time there is a need to evaluate an action plan or when our Board has to approve an ESG document/assessment, the Committee evaluates it first and gives their suggestions as specialists in the field. The committee must have at least one member who is a Sustainability expert and at least one member of the Board. This Committee is also responsible for bringing the most relevant topics to shareholders. As an example of actions, this committee was responsible for approving the CBA ESG 2030 Strategy, the SBTi target proposal, our carbon pricing and even the climate change adaptability study.

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues	Primary reason for no board-level competence on climate-related issues	Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future
Row 1	Yes	CBA has an independent member with sustainability and climate change experience and considered a reference in the topic in the Brazilian market. As published in CBA's 2021 Annual Report, one of its members is also a member of the Advisory Board of Instituto Ethos and WRI Brasil (World Resources Institute), both of which are widely known for their involvement in water issues, natural resources in general and SDGs. As these are important positions in renowned institutions, the member's technical knowledge on water-related topics can be affirmed. This member is responsible for advising our Sustainability Committee and bringing improvement ideas by means of his market vision of best practices.	<Not Applicable>	<Not Applicable>

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The Sustainability Committee is the highest body dealing with climate issues in the CBA. It was created in April 2021, with aim to advise the Board of Directors on the development and implementation of the Sustainability Strategy, which includes corporate guidelines and acts in the management of environmental, social and governance issues. It includes some members of the board, like the Chairman, and the CBA's CEO.

Adicionalmente, CBA has the Executive Sustainability Committee since 2019. It includes the CEO, Directors, General Managers and independent members. Most recently a member of the board and an external Sustainability Specialist was joined the Committee. The responsibilities of this Committee in relation to climate issues, refer to reviewing the performance strategy, monitoring trends, assess risks and opportunities, approving projects, providing resources for implementation, defining climate goals, monitoring results. The responsibilities for climate-related issues have been assigned to CEO because the theme is strategic for the aluminum sector, which is electro-intensive and known for having high greenhouse gas emissions.

Committee meetings take place every 2 months.

Examples of decisions made by the Committee in relation to climate change:

- Emission reduction targets for senior leadership.
- Approval for commitment to Science Based Targets and to the proposal target that was sent to SBTi;
- Approval for the ESG Strategy, including GHG emissions reduction targets and Materiality studies.
- Approval to study Carbon Neutralization of some products.
- Approval for carbon pricing value and to the climate change adaptability study.
- Approval to RECs purchase.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	Sustainability targets (including greenhouse gas emissions) aligned with company strategy and linked to cash bonuses to eligible employees (leaders at all levels).

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Board Chair	Monetary reward	Emissions reduction target	Sustainability goals (including greenhouse gas emissions) aligned with the strategy and linked to cash bonuses to eligible employees (leaders at all levels).
Board/Executive board	Monetary reward	Emissions reduction target	Sustainability goals (including greenhouse gas emissions) aligned with the strategy and linked to cash bonuses to eligible employees (leaders at all levels).
Director on board	Monetary reward	Emissions reduction target	Sustainability goals (including greenhouse gas emissions) aligned with the strategy and linked to cash bonuses to eligible employees (leaders at all levels).
Corporate executive team	Monetary reward	Emissions reduction target	Sustainability goals (including greenhouse gas emissions) aligned with the strategy and linked to cash bonuses to eligible employees (leaders at all levels).
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction target	Sustainability goals (including greenhouse gas emissions) aligned with the strategy and linked to cash bonuses to eligible employees (leaders at all levels).
Chief Financial Officer (CFO)	Monetary reward	Emissions reduction target	Sustainability goals (including greenhouse gas emissions) aligned with the strategy and linked to cash bonuses to eligible employees (leaders at all levels).
Chief Operating Officer (COO)	Monetary reward	Emissions reduction target	Sustainability goals (including greenhouse gas emissions) aligned with the strategy and linked to cash bonuses to eligible employees (leaders at all levels).
Process operation manager	Monetary reward	Emissions reduction project Emissions reduction target	Sustainability goals (including greenhouse gas emissions) aligned with the strategy and linked to cash bonuses to eligible employees (leaders at all levels).
Other, please specify (Todos os empregados profissionais (RV))	Monetary reward	Other (please specify) (ESG Goals related to variable remuneration)	Sustainability goals to disseminate our 2030 ESG Strategy to all the company, including greenhouse gas emissions knowledge.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	1	Risk mitigation actions enter in the budget for the following year
Medium-term	1	5	The Company's strategic planning is evaluated for the next 5 years.
Long-term	5	30	Some long-term risk costs are provisioned in the ARO and ORO accounts, such as risks associated with decommissioning.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

The topics and risks, including climate-related assessment risks, are classified according to their potential for financial, reputational, environmental, social, legal and health and safety impact. In the case of climate-related risks, the financial aspect is considered substantial from R\$ 45 MM (minor impact) up to values above R\$ 180 MM (extreme impact).

Reputational impact for climate-related risks starts to be considered strategic when there is a negative exposure at the local level with an impact restricted to only one stakeholder (CBA legal representatives, government authorities, society, opinion makers, market and internal public) and reaches the extreme level when it affects clients or a critical supplier, or if there is long-term damage to reputation, with negative exposure at national and/or international levels by the press and social networks with impacts to all stakeholders.

For environmental issues, a climate-related risk becomes strategic if there is an event of environmental liability, and becomes an extreme climate-related risk when this environmental liability causes an impact of great magnitude with financial unfeasibility for reverting damage to species, habitats and ecosystems, and prevents continuity of operations.

For social issues, a climate-related risk becomes strategic when there is an impact on a specific neighborhood or community, reaching the economic (employment or income), environmental (natural resources) or physical (health and safety) spheres of residents; the extreme level would happen if there is a severe regional impact with communities and/or public entities capable of interrupting operations; Significant impact on social dynamics, with permanent or lasting changes in the way of life..

For health issues, climate-related risks are relevant if they impact employees, leading to the need for medical leave (example: hot flashes in warmer temperatures), and can be classified extreme for weather events that can lead to deaths.

Legal issues are not yet relevant to climate-related risks because Brazil does not have relevant laws to address these issues with the private sector, but any emerging regulations such as carbon regulations (carbon national pricing or border defense mechanisms) that may have a financial impact on the company are also considered a strategic climate-related risk.

Within the company's risk mapping structure, impacts can be divided into four categories, namely: Minor, Moderate, Major and Extreme. For CBA, significant risks are those rated as Major or Extreme

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

CBA has a Risk Management Policy for managing financial, operational, socio-environmental, strategic and compliance risks that consider climate risk analysis and climatic attributes. The Company's Risk Management Policy is based on (i) governance guidelines, Company corporate bylaws; (ii) applicable rules issued by the Brazilian Securities Commission ("CVM"); (iii) the Novo Mercado Listing Regulations by B3 S.A. - São Paulo Stock Exchange; (iv) the guidelines and principles described in the Company's Code of Conduct as well as in the internal regulations of the Statutory Audit Committee and the Board of Directors; and (v) the COSO-ERM model - Committee of Sponsoring Organizations of Treadway Commission - Enterprise Risk Management ("COSO ERM"); and (iv) the ABNT NBR ISO 31000:2018 standard - Risk management - guidelines.

The Risk Management Policy has the main objective of establishing guidelines and responsibilities for the Company's Risk Management, as well as guiding the processes of contextualizing, identification, evaluation, analysis, treatment, recording, monitoring and communication of risks inherent to its activities, incorporating risk elements into strategic decision-making and in accordance with best market practices. The Risk Management Policy is applicable to all areas of the Company and its units, which must use the tools made available by Risk Management and Internal Controls to support the conduct of its processes in order to seek reduction of risk exposure, internal or external, inherent to CBA's business and that were detected, contextualized, identified, prioritized, evaluated, recorded, treated and monitored.

For the Company, "Risk" is the possibility that an event will occur and adversely affect achieving objectives, with "Risk Management" being a set of coordinated activities to direct and control an organization as it pertains to risk, the purpose of which is to create and protect value, to improve performance, encourage innovation and support the achievement of strategic objectives

The company has a risk identification step that performs search, recognition and description of Risks, based on the established context and supported by communication and consultation with the parties' stakeholders, internally and externally. The aim is to produce a comprehensive list of Risks, including causes, sources and events, which may have an impact on achieving objectives identified in the context establishment stage. In addition, there is the Risk Analysis stage, responsible for understanding the nature of the Risk and determining the level of Risk, providing the basis for assessment and for decisions on the treatment of Risks. The result of the Risk analysis will be to assign, for each identified Risk, a rating both for "Probability" (measure of the possibility of a Risk event) and for the "Impact" (consequence of materialization of a Risk event in the objectives), which combination will determine the level of Risk. Next, there is the risk assessment stage, with the purpose of carrying out a Risk assessment and assisting in decision making. based on the results of the Risk analysis, in which Risks need treatment and priority for implementing treatment. This involves comparing the level of Risk with the criteria of Risks established when the context has been considered, to determine whether the Risk and/or its magnitude is acceptable or tolerable or if any treatment is required. Finally, there is the risk treatment stage, which involves selection of one or more options to modify the level of Risk and prepare treatment plans, which once implemented, will imply introducing new controls or modifying those existing

The purpose of risk identification is to find, recognize and describe risks that can affect CBA in achieving objectives defined. This analysis is carried out considering all the risk factors detected through the risk assessment process and are evaluated according to the impact and probability of the risk. The evaluation criteria involve the comparison between risk rules and probability of occurrence in internal and external environments, as well as the controls in place to mitigate the risks. The result of the assessment must be registered, communicated and validated by the governance bodies: Executive Board, Audit Committee and Board of Directors. Inside our risks document there is a space to select if the risks are related to some climate change attribute, and if so, the respondent should complete a climate change annex where there is more detailed information on how climate attributes can increase, or the impact or the probability and financial impact (This document was revised considering TCFD recommendations). Inside the annex will be seen if it is a transition or physical risk, and if it has any political/legal, technological, market or reputation bias. Opportunities are mapped by each area of the company and registered in a multi-disciplinary Competitiveness Management platform. Assessments are made several times during the year and actions and indicators are systematically monitored. This platform also evaluates the magnitude of the opportunity to determine whether it would have a significant financial or strategic impact. Opportunities are also considered in the short, medium and long term. The main opportunities are also submitted to the Board of Directors. Climate opportunities may involve mitigation projects that have financial gains, possibilities for increasing margins or share in low-carbon products, development of the supply chain to be prepared for climate change, among others. Climate risks and opportunities can be physical (acute or chronic) or transitional (current and emerging regulation, technology, legal, market and reputational).

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & Inclusion	Please explain
Current regulation	Relevant, sometimes included	Current regulations do not offer significant risks to CBA, since today, only the company is required to report its scope 1 and 2 emissions. CBA reports its total and assured emissions inventory within the public emissions registry. The company considers this disclosure important to ensure transparency of one of the most material topics for the company, and failing to publish this data is not an option for the company's climate change management, and goes against the ESG 2030 strategy and its positioning of a reference in sustainability. We follow the regulation updates closely to assess whether this risk may arise, and always prioritize following discussions of regulatory changes and being aligned with best market practices, that way we can reduce impacts by significant changes to the company's activities. To CBA, an extreme risk would be if the change in current regulations has the power to stop our operations. CBA has a risk form that must be completed every time a new risk is detected. Inside this document there is an option "Governance and Conformity" in the risk assessment form to classify the type of risk, for signaling whether the risk can adversely impact current regulations applicable. In the same document we have the option to select if the risk has any kind of climate change bias, and if so, the person responsible for this risk should complete an annex with more information on how climate aspects can increase the probability or impact the scenario in question.
Emerging regulation	Relevant, always included	This topic can cause significant financial impacts to the company since we have processes with relevant direct emissions, although our emissions are low compared to other primary aluminum producers in the world. This can be applied to border protection mechanisms such as European CBAM (Carbon Border Adjustment Mechanism) as well. In Brazil, carbon pricing is being studied and it could become a regulation. There is a "Governance and Conformity" option in the risk assessment form to rate the type of risk, in which emerging regulations should be considered. In the same document we have the option to select if the risk has any kind of climate change bias, and if so, the person responsible for this risk should complete an annex with more information on how climate aspects can increase the probability or impact the scenario in question.
Technology	Relevant, always included	With the introduction of new technologies that are more competitive in terms of emissions, former ones start to have a commercial disadvantage. Considering the inclusion of carbon pricing systems and border protection systems, companies with "backward" technologies with higher emission intensity would have to pay more in carbon pricing systems, increasing the cost of its product and impacting CBA's competitiveness in the market. After development of our Climate Change Adaptability study, technology risks were deemed relevant to the company. With the evidence of global warming (IPCC report) and the increase in discussions and market demands on the role of the private sector in the process of reducing GHG emissions. There is a "Strategic topic" option in the risk assessment form to classify the type of risk. Inside the annex it is possible to select the "Technological" rating for this climate risk. In the same document we have the option to select if the risk has any kind of climate change bias, and if so, the person responsible for this risk should complete an annex with more information on how climate aspects can increase probability or impact the scenario in question.
Legal	Relevant, sometimes included	Current regulations and the legal system do not offer significant risks to CBA, as the company only is currently required to report its scope 1 and 2 emissions. CBA reports its total and ensured emissions inventory within the public emissions registry. The company considers this disclosure important to ensure transparency of one of the most material topics for the company and failing to publish this data is not an option for the company's climate change management, and goes against the ESG 2030 strategy and its positioning as a reference in sustainability. We comply with current legislation and watch all the updates closely to assess whether this risk may arise or not in coming years. To CBA an extreme risk would be if the change in current regulations has the power to stop our operations. There is a "Governance and Conformity" option in the risk assessment form to classify this type of risk.
Market	Relevant, always included	This topic can generate financial results, since it would lose market share. CBA and the aluminum sector as a whole has as its main manufacturing model counter-arguments of dealumination in the activity and low carbon emissions are being studied. The aluminum market may suffer a significant impact from climate change, mainly due to stigmatizing in it as a major polluter. Thus, some clients may look for alternative materials to be used instead of aluminum. In the world some companies are already trying to create aluminum-free packaging known as alu-free, causing a decrease in aluminum demand throughout the market. As a result, CBA's sales may be affected, directly impacting its revenues. This has not yet occurred, but it is a real risk that the company and all the aluminum sector are structuring a decarbonizing strategy to decrease the risk's probability and impact (Today this kind of discussion is more frequent among packaging companies). There is a "strategic topic" option in the risk assessment form to classify the type of risk in which the market may be considered. Market is a relevant topic for CBA that should always be considered.
Reputation	Relevant, always included	Reputation is an important issue for CBA and can result in market loss, and adversely impact the company's share price in the B3 stock exchange. Several mining and metallurgy companies are suffering criticism for taking few actions or not ambitious measures on climate issues. In this way CBA also runs the risk of having its reputation impacted by this topic, and that is why we have several actions to engage with climate change issues inside our value chain to mitigate this risk. CBA has plans to be a sustainability market reference and one of our main topics is our carbon strategy and management, one of our materiality topics, and hence we care about the perception that society and the market have of our activities There is a "strategic topic" option in the risk assessment form to rate the type of risk. Inside the annex it is possible to select the "Reputational" rating for this climate risk.
Acute physical	Relevant, always included	CBA has exercised climate projections for all of its units in the aluminum business to increase its climate resilience to acute physical risks. One of our acute risks is the impact on critical suppliers due to climate-related events, whether extreme weather events and/or reduced rainfall can impact suppliers' operations, reducing availability of critical materials for CBA's production. That could lead to a situation that CBA may have to stop or reduce its operations, which could lead to a reduction in income generation. There is the "operational" option in the risk assessment form to classify the type of risk, in which acute physical risks should be considered.
Chronic physical	Relevant, always included	CBA has produced climate projections for all of its units in the aluminum business to increase its climate resilience to chronic physical risks. Climate projections indicate a risk of drought and reduced rainfall, causing a possible water crisis which may limit use of water in the operation and have adverse impacts on CBA's structure with production downtime. In the event of a lack of water, the community can also be impacted and the government can act to reduce the volume of grants for industrial processes. This could lead to a situation whereby CBA would have to stop or reduce operations, which could lead to a reduction in income generation. There is the "operational" option in the risk assessment form to classify the type of risk in which chronic physical risks should be considered.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms
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Primary potential financial impact

Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Brazil does not currently have regulations on climate change, but through the PMR Brasil Project and other state projects that were studying alternatives to apply carbon pricing in the country aligned to an emissions trade scenario. The pricing proposal will be applied to aluminum industries producers with significant emissions (above 25,000 t CO2e/year). Currently, the plant's emissions by the unit located in the town of Alumínio (SP) are roughly 1,093,700.00 t CO2e (scope 1) and Itapissuma (PE) roughly 40,070.00 t CO2e (scope 1) in 2021. This increase in costs may affect CBA's competitiveness in relation to other smaller domestic companies, which will not have such

significant pricing or regarding aluminum imported into Brazil from countries that do not have carbon pricing. CBA has a vertically integrated plant with all the production steps of the aluminum chain (Refinery, Smelters, Casthouse and Downstream production), however the great majority of other companies in the area have one or two of these steps within their operations, which can lead to a scenario whereby not every aluminum company has to pay the price for carbon emissions, causing financial impacts to CBA due to loss of market competitiveness.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

21259000

Potential financial impact figure – maximum (currency)

44369000

Explanation of financial impact figure

The financial impact was calculated through CBA's internal pricing study. The study relied on the assessment by an external carbon pricing expert and looked at the proposed structure of PMR Brasil and PL 528/21, pricing systems in countries of interest (CBA exports) and considered the Company's Mitigation Projects.

The potential financial impact reported refers to the annual impact on the company's operating profit based on its scope 1 emissions in that year for both plants (Alumínio and Itapissuma). In this study it was calculated that our carbon pricing will be R\$22.85. Following PMR statements, emissions threshold (it was taken into account that the business units to be included in a carbon pricing mechanism are those that emit more than 25000 t CO2e/year).

Assumptions for final value: (i) Same current export profile for processed (%); (ii) Carbon pricing system implementation in Brazil: early 2025, price (R\$40.00) increases and free allocation (50%) + offsets (20%) gradually reduced; (iii) CBAM system implementation: start 2026, gradual increase; (iv) Dollar: BRL 5.69; (v) Discount rate=0.

Indicator calculation:

Final result = Purchase of licenses (CP) + Purchase of offsets (CO) + Boundary adjustment value (AF)

For CP, CO and AF, the volume of emissions needing reconciliation was established, following PMR and the European CBAM assumptions, applying to the CBA emissions scenario.

CP = Volume of emissions priced by the PMR * Licensing cost (R\$40.00 for 2025 and R\$60.00 for 2035);

CO = Volume of offsets allowed by the PMR * Offset cost (R\$21.57);

AF = Volume of emissions priced by CBAM * Cost of border adjustment (R\$13.97 for 2025 and R\$19.19 for 2035);

This calculation was performed twice, once for 2025 (lower value reported) and once for 2035 (higher value reported)

Cost of response to risk

25000

Description of response and explanation of cost calculation

With the Brazilian scenario showing the risk of including carbon pricing, it became clear to CBA of the importance to understand the concepts of carbon pricing and how to operate in the market. For this reason, we searched for clear references on this topic and found that the Center for Sustainability Studies at FGV has been working on this topic for some time, being a reference in Brazil in simulating the carbon market. Thus, we opted to conduct training on the topic at FGV and then to perform simulations to better understand how to operate in a carbon market in previous years. The training and simulation were very useful and we have evolved a lot in simulations, being able to buy allowances at much better prices at the end of the year than at the beginning of simulations. In addition, we are now able to understand much more the details of the documents released by the PMR Brasil Project to represent CBA and our activity during public consultations on the project. CBA has already answered 3 questionnaires from the PMR Brasil Project and we are able to provide clear answers to impacts by the project according to the suggested paths. In 2021 we engaged FGV again to deepen our first analysis of internal carbon prices.

Explanation of cost calculation: Value is the cost of the complementary study made with FGV in 2021.

Other actions consist of internal management decisions, which we understand will not generate additional cost in response to the risk. For example: decision on the internal price of carbon for investment approval; establishment of governance on the issue; reporting and monitoring by the company's leadership. We also consider several emission reduction projects, but they are accounted as opportunities. We understand that, should the risk materialize, response to the risk would be based on managerial decisions as well, such as adapting carbon price values used from project data to the value stipulated by the pricing instrument to be implemented.

Comment

CBA regularly monitors the progress of this carbon pricing project around the world.

As the implementation project in Brazil demonstrates more clarity in definitions, financial calculations are revised.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Other, please specify (Increased severity and frequency of extreme weather events such as cyclones and floods)
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Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

In its industrial unit in the town of Alumínio (SP), we have our integrated plant featuring all the aluminum chain production steps. Today water is used in the refinery stage (raw material digestion), smelter stage (gas treatment), casthouse and downstream stages (product cooling). Water is essential to our production process, and with climate

change aggravation projections there is a possibility of rainfall reduction and increase in hydro stress in water basins. CBA has produced climate projections for all of its units in the aluminum business with the purpose of taking the results and creating an action plan to increase CBA's climate resilience. With the changes in rainfall parameters, our units are exposed to the risk of lack of water, that can compromise our production and as a consequence our revenues. In the projections carried out by CBA as a result, some changes in weather patterns for the coming decades can be observed:

- 1) Rainfall can be reduced by up to 10%;
- 2) The risk of drought will increase to a medium-high degree;
- 3) Seasonal variability will increase in all units;
- 4) There may be an increase in minimum and maximum temperatures of up to 10%;
- 5) Heavy rain can increase by up to 20% in two regions evaluated by the company.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

64500000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

To measure this financial impact, it was considered that CBA did not have water available for six months, in a way that would interrupt 100% of its aluminum production operations. The company would then have a drop in the volume of aluminum sales during this period, so that only what was in the company's inventories would be sold. In a possible scenario of production stoppage, the company would have reduced costs from raw material purchases for the production process, including electricity that is currently supplied to us largely by its own plants, so in a stoppage scenario this generated energy could be sold in the market to reduce the financial impacts created by the lack of aluminum production.

Calculation of the indicator:

Final result (R\$64,500,000) = Reduction in revenue from aluminum sales (RR) – Sale of inventories (SI) – Sale of Energy (SE) – Reduced costs due to declining purchases of raw materials (RCPRM)

Cost of response to risk

1100000

Description of response and explanation of cost calculation

With the increased risk of water shortages (inserted in our climate projections and the aggravation of the drought period that Brazil faced in 2021) CBA traced an action plan to build a new water collection well and approved a total investment of MMR\$ 1.1. To prevent the lack of water that could adversely impact its operations and reduce our production capacity, the company organized itself to carry out feasibility studies for the project's development, carried out an analysis and prepared the budget for the service that will include drilling a new well and construction of a new network of pipes to transport the collected water in order to serve as a supply support in periods of low rainfall and when the reservoirs are at lower than expected levels. The project has not yet started, but is expected to do so in 2022.

Cost calculation: This investment was made through the service budget sent by the companies responsible for the new well construction. Approximately 27% of the total investment will be for drilling. The remaining sum will be applied to construction of the structure, in addition to other adaptations to the company's current structure to receive water produced by the new well.

Comment

So far, CBA's actions have been effective and have been able to prevent the occurrence of this risk, even in events of intense rain.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of recycling

Primary potential financial impact

Reduced direct costs

Company-specific description

Aluminium is recognized as a solution for developing less resource-intensive and more circular supply chains that re-utilize materials and minimize waste and environmental impact. Reusing materials is an important way to reduce pressures on the world's natural resources, while also minimizing waste from discarding end-of-life products. This makes recycling process scrap one of the most important processes at CBA. Recycling provides an additional source of raw materials in the value chain by reusing scrap produced on- and off-site. This supports not only higher production volumes but also increased cost efficiency. It also provides savings on raw materials, inputs and electric power, generating higher value-added aluminium and reduced environmental impact. In a process known as remelting, process scrap is recycled into new products. At the CBA unit called Metalex located in Araçariquama/SP, investments are planned to increase scrap consumption in the casting stage. With more efficient furnaces using the sidewell technology, the expected increase is to achieve 80% of the scrap consumption in this process between 2023 and 2027.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

66424761

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The project to increase scrap consumption will be dealt with on two different fronts. The first deals with the purchase and installation of a new Sidewell furnace, while the second deals with the adaptation of Metalex's cold production line, which will make it possible to increase both the plant's production to 72,000 tons of aluminum/year and increase the percentage of scrap in the composition of the Metalex product.

The installation of the new furnace will bring gains in the improvement of the metallic yield of the process, which will be responsible for 1% of the positive financial impact of the project.

Meanwhile, the adaptation of the cold line (which will represent 99% of the gains) will bring benefits such as increasing the metallic yield of scrap at the Metalex plant (29% of the impact), gain in the increase of the weighted margin (12% of the impact), gain in metallic yield at the CBA plant (13% of the impact), gain in the purchase price of scrap that will replace the input of external ingot (34% of the impact), gain in the disposal of process waste (2% of the impact) and others gains from making the scrap line viable (13% of the impact).

Cost to realize opportunity

115000000

Strategy to realize opportunity and explanation of cost calculation

Scrap is an additional source of raw material in the value chain, allowing an increase in aluminum production and dilution of the fixed costs of the process, once the existing structure is optimized. With this in mind, CBA structured the project to install a scrap treatment line at Metalex unit, allowing the Company to use different types of scrap and, therefore, have more flexibility in the metal supply secondary in the market, contributing to the increase of recycled content in its products and adding around 50ktpa of additional production capacity by 2025. In the Company's view, from the point of view of the ESG strategy, the projects contribute to the circularity of aluminum through (i) increased use of recycled aluminum in production; (ii) reduction of CO2 emissions since the energy used for production at from recycling is 95% lower compared to regular production; (iii) innovation that results in the possibility of recycling multi-layer packaging. The project have an expected investment amount of R\$115,000.000.00. Project in progress, with disbursements expected until 2023.

Cost Calculation: Approximately 16% of the reported amount was from the purchase of the new Sidewell oven, 64% of the investment was for the acquisition of materials and equipment necessary for the adaptation of the production area, 12% was for contracting services to support the adaptation, 6% for project management and maintenance and 2% for engineering expenses.

Comment

Not applicable.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Primary potential financial impact

Reduced direct costs

Company-specific description

CBA uses Söderberg technology in its Smelting operations (Alumínio city), where aluminium oxide is transformed into smelting aluminum. Our Updating Smelter technology project (initially called Green Söderberg project), launched in 2018, is automating the furnace feed process to reduce emissions from the process while also improving efficiency and safety. Currently 72 cells have the technology installed to test and optimize results. All pots are expected to be converted by 2026. Once the project is properly installed and stabilized, it could be able to reduce the emissions of this process by 20%. The Smelters' operation represents about 70% of the emissions of the entire CBA and, therefore, this project is very representative for climate change. To make the point feeder project viable, two other projects are also being developed. The first one is in the Smelters plant it reduces the production of black mud and anode effect, which generates PFC emissions. The second one is a project to upgrade the structures where the anode paste is produced, which aims to improve the quality of the anodic paste, according to the quality parameters required by the point feeder technology.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

53113282.92

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

This project will have positive financial impacts through the following points: (i) reduction of electricity consumption (26% of the impact); (ii) reduction in fluoride consumption (7% of the impact); (iii) reduction in pulp consumption (12% of the impact); (iv) reduction in oxide consumption (6% of the impact) and reduction in the need for the wet gas treatment step (50% of the impact). Considering these improvements, the project has the potential of MMR\$53.1 (Amount reported in previous items).

Another possible financial impact would be the implementation of a carbon regulation system through pricing in Brazil, and using our pricing study it was possible to point out that for this project that has the potential to reduce more than 130 thousand tCO₂e by 2026, and considering our internal carbon price (R\$22.85), in a future scenario it will be possible to have a positive impact of approximately MMR\$3.0 (This value was not added to the previous item as it is a forecast).

Cost to realize opportunity

620000000

Strategy to realize opportunity and explanation of cost calculation

- Strategy to realize opportunity: To execute this project at the CBA Smelter located in Aluminio city (SP), it is being necessary to carry out several studies (since 2013). In addition, pilot point feeder systems were installed in 72 cells to understand how the systems work and to refine the project. For the complete execution, these systems will be installed in all CBA Smelter pots by 2030. During installation, all process parameters will be monitored. If the emission reduction is significant, it will be possible to turn off the gas treatment system that works with a high volume of water and caustic soda, generating residues of oxide particles. With the shutdown of the gas treatment system, this consumption of water and caustic soda will be eliminated, as well as the generation of waste from this process. The forecast is that this will reduce emissions from this process by about 20% and bring financial savings related to increased efficiency and reduced resources.

- Explanation of cost calculation: Considered costs for basic engineering design and project management, for the acquisition of machinery, equipment, and other materials, for electromechanical assembly, operational expenses, and others. sts, such as pre-operational expenses

Comment

The Smelters' operation represents about 70% of the emissions of the entire CBA and, therefore, this project is very representative for climate change.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Reduced direct costs

Company-specific description

At the aluminum oxide Refinery located in the city of Alumínio (SP), it was necessary to use boilers that used fuel oil and natural gas to run the processes. There is an opportunity to significantly reduce emissions from this process by replacing these boilers by another boiler that works with wood chip biomass from forests planted for this purpose. This opportunity was responsible to reduce 63% of the Refinery's emissions that are the second most emissive step from the aluminium chain (responsible in 2019, before the biomass boiler implementation, for 27% of all Aluminio plant emissions). With this project the emissions intensity from refinery phase decreased from 0.55 tCO₂e/t oxide to 0.20 tCO₂e/t oxide. In addition to the benefits of reducing the carbon footprint of this process, it will be possible to obtain financial gains by eliminating the consumption of natural gas and fuel oil (CBA had cost savings, as biomass is cheaper compared to the previously used fossil fuels). This project started the implementation phase in march 2020, and in 2021 was the first year that the Biomass boiler worked all year. Lower carbon emissions from the Refinery mean end products now have a reduced carbon footprint—and aluminium produced with low carbon emissions has a higher market value and can unlock new markets.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

77850670

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

To the biomass boiler we calculated CBA have positive financial impacts by/;

Process impact (Considering the natural gas consumption and its substitution by steam from biomass combustion) – It was calculated the sum of steam generated by natural gas and biomass and the cost of both to produce the same amount of steam. At last we subtracted the cost of steam from natural gas to the cost of biomass steam and it led to a result of 77,850,670 (de 96.137.133 m³ of natural gas) – Leading to the reported value before.

The company can in the future have more financial impacts when considering carbon pricing (considering the possibility of the implantation of a carbon regulation system)

– To this value it was considered the reduction into our scope 1 emissions due to our natural gas consumption reduction. This value (in tCO2e) was multiplied by our internal carbon price (R\$22.85) and led to a financial impact of R\$4,544,926. As this is only an estimated value it wasn't included in the reported value.

Cost to realize opportunity

15500000

Strategy to realize opportunity and explanation of cost calculation

As the second most emissive phase from all the aluminium chain production, the refinery are one of the most important steps analysed to cut GHG emission. Responsible for the consumption of natural gas and oil, the alumina production has great potential to new projects that can help to reduce its emissions just by exchanging the fuels used into the process. With this in mind, CBA forged a partnership alongside with Combio Energia S.A., and in March 2020, utility partner company started operation of a new biomass boiler system at the Alumina Refinery. CBA replaced its natural gas- and oil-fired boilers with a new boiler fueled by wood-chip biomass. To execute this opportunity, CBA needed to find a company specializing in biomass-operated boilers. After establishing this partnership, several studies were carried out that confirmed the benefits of the project for the CBA refinery. CBA needs to install the new boiler in its unit and monitor all process parameters to ensure that the execution is adequate. The biomass boiler is operating properly and is monitored according to the legislation of the state of São Paulo, and was responsible for a decrease of 63% of the refinery's scope 1 and 2 emissions.

Cost to realize opportunity: 80% of the cost is related to equipment acquisition and the rest was directed to project management, civil construction, and electromechanical assembly.

Comment

Not applicable

Identifier

Opp4

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Markets

Primary climate-related opportunity driver

Access to new markets

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

CBA products have low emissions compared to aluminum produced by competitors. This can attract customers concerned about climate issues.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Today, we still have no way of estimating the financial impacts of opening new markets with a focus on low-emission products, as there is still no premium added to the value paid for the product for having a good result in GHG emissions. For now, this indicator only brings a more positive image of the CBA product and was a differentiating factor in choosing between more than one supplier.

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

The costs would be associated with disclosure and communication, but these costs have already been considered as an action to mitigate risks

Comment

We will have no cost, as CBA products already have low emissions.

C3. Business Strategy

C3.1

(C3.1) Does your organization's strategy include a transition plan that aligns with a 1.5°C world?

Row 1

Transition plan

Yes, we have a transition plan which aligns with a 1.5°C world

Publicly available transition plan

Yes

Mechanism by which feedback is collected from shareholders on your transition plan

We have a different feedback mechanism in place

Description of feedback mechanism

The CBA currently has two different feedback mechanisms where it is possible to address impacts on the topic of climate change. The first is a communication channel called the ethics line in which anyone (whether internal or external to the company) can leave feedback on occurrences of any nature, including environmental impacts and climate change. This mechanism is monitored throughout the year, and comments are directed to the responsible areas. The second mechanism is the materiality study, in which the company assesses which are the most significant issues for the company. During this evaluation, which is carried out with the company's top leadership, there is a public consultation phase, in which it is open for suppliers, customers and other external participants to give their perceptions about the company's practices and the most representative themes of its activities.

Frequency of feedback collection

More frequently than annually

Attach any relevant documents which detail your transition plan (optional)

CBA_Annual_Report_2021-min.pdf

Explain why your organization does not have a transition plan that aligns with a 1.5°C world and any plans to develop one in the future

<Not Applicable>

Explain why climate-related risks and opportunities have not influenced your strategy

<Not Applicable>

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

	Use of climate-related scenario analysis to inform strategy	Primary reason why your organization does not use climate-related scenario analysis to inform its strategy	Explain why your organization does not use climate-related scenario analysis to inform its strategy and any plans to use it in the future
Row 1	Yes, qualitative and quantitative	<Not Applicable>	<Not Applicable>

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenario		Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Physical climate scenarios	RCP 4.5	Business division	<Not Applicable>	CBA used three different platforms/tools to structure its climate-related scenarios analysis (AqueDuct, from WRI, INPE and WorldClim). We used the coordinates of each of our units to study our business specific climate change projections. We looked to climate aspects as temperature, precipitation, drought risk, seasonal and interannual variability and hydric stress.
Physical climate scenarios	RCP 8.5	Business division	<Not Applicable>	CBA used three different platforms/tools to structure its climate-related scenarios analysis (AqueDuct, from WRI, INPE and WorldClim). We used the coordinates of each of our units to study our business specific climate change projections. We looked to climate aspects as temperature, precipitation, drought risk, seasonal and interannual variability and hydric stress.

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

CBA observed throughout its participation in climate commitment initiatives, such as Global Compact, Cebds, the São Paulo Agreement, among others, that the market seeks and values companies with greater climate resilience, which would enable them to undergo climate change in a safer way and with controlled negative impacts. With this in mind, the company focused, with the climate adaptation project, on assessing the risks that it had already considered and confirmed if any of them had an interface with climate change, and in addition plotted new physical and transitional risks following the TCFD recommendations. Aware of the risks to which the company was exposed and their respective impacts and probabilities, the company invested in analyzing climate projection scenarios to help develop our risk assessment, and verify which areas were in more sensitive regions in terms of rainfall, risk of drought and water stress. The projections also helped us to assess which risk mitigation activities should be prioritized.

So basically the questions we wanted to answer were: Do we already have plotted risks that have interface with climate change? Are we able to detect new risks when we look specifically at climate change aspects? Can our company be considered resilient to market recommendations (TCFD)? Is our risk management system aligned with TCFD standards? Which of our units are most exposed to the consequences of climate change? What do we need to prioritize to create a climate adaptation plan? How will our units be impacted by climate change?

Results of the climate-related scenario analysis with respect to the focal questions

We confirmed that we already had plotted risks that interfaced with climate change, but the study helped us to increase our plotting by including new risks. We found that our risk map-plotting system would need adjustments in order to enable correlating climate issues more clearly, objectively and in line with TCFD recommendations and ratings (already performed). Observing the projections made for all CBA units in the aluminum business, we now saw that we do not have units in critical regions, especially with regard to water aspects, but with projections for future decades we were able to plot a number of opportunities for actions that the company may undertake in coming years to minimize the impacts by climate change. In 2022, we are continuing the study but are now looking for a way to use projected results in a more practical manner, making it possible to deepen our analysis.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	There is an opportunity to gain market share by means of emission lower than competitors in the Smelting process. In 2021 this opportunity rose through brand repositioning, which involves disclosing our low emissions. CBA has increasingly conquered space in some market sectors, such as packaging, automotive and transportation due to aluminum sustainability attributes. The Market Development and Innovation team inform clients of sustainability gains provided by increased use of aluminum. This task provides recognition of the benefits of using aluminum and also raises new opportunities for its applications. It also makes CBA a supplier of choice by virtue of the low carbon aluminum produced by the company. In addition, CBA develops solutions with clients and, monitors sustainability gains of new products in all the development stages. In 2021 this team was responsible for developing 2 projects reducing emissions and 10 projects avoiding emissions (considering emissions inside CBA and our clients) which resulted in a total of 195.091,99 t CO2e impacted. A successful case is a holder for electric bus batteries. One of the challenges for the electric vehicle sector is reducing weight of vehicles, as the batteries required for their operation are heavy (each module weighs about 120 kg). CBA developed with the client an aluminum battery holder substituting the holder previously made of steel. The aluminum holder is 280 kg lighter than the steel holder, reducing about 64% of weight and allowing to install 2 more battery modules. CBA built 3 prototypes installed in the client's vehicles. It is estimated that, due to this application, the emission of 12 t CO2e will be avoided throughout the useful life of each bus. The prototypes passed the end client's tests and had results validated and approved. With this project CBA was able to place a new low carbon aluminum product to the market. CBA has been now named supplier and co-engineering participant in developing this product and is undergoing an audit, certification and approval process with our end client, having already received the first order for manufacturing this new product. The next step is to scale up production in order to increase volume and supply on a serial scale as of June 2022 (Investment: R\$ 4.000.000. 00).
Supply chain and/or value chain	Yes	There is a plotted risk of having greater difficulty and costs to acquire raw materials of fossil origin due to repositioning by investors in relation to climate change. Assessing these and other supply chain risks, a project is being developed to commit our suppliers, to assess their level of maturity and what actions can be taken to influence them. In supplier relations, we developed our Sustainable Procurement program, an initiative in partnership with the Votorantim Institute that aims to build commitment across the value chain—from mine to downstream. The program is a way to raise awareness among different departments at CBA on the role that the supply chain should play in sustainability, and on important issues to consider besides pricing, quality and lead times. Social, environmental and governance considerations have now been included in supplier assessments, including aspects with the potential to generate significant impacts on the environment and local communities, supplier commitment with climate change and the level of ethics and transparency that suppliers demonstrate in doing business. The new Sustainable Procurement Policy was approved in 2021, and is an essential part of our efforts to further establish CBA as a sustainability leader in our industry. This year the project continued to advance, so that evaluation standards have already been established for each ESG category in order to be able to rank our suppliers. Plotting critical suppliers for the company was also performed and the task of evaluating ESG performance by these suppliers has already started. It is expected that in coming years this assessment will cover all our suppliers and support us in decision making of which suppliers we wish to work with, evaluating climate change aspects, among others. This project will be concluded in 2025.
Investment in R&D	Yes	R&D is one of the most important items in CBA's strategy to ensure reduced emissions in conjunction with efficiency improvements and financial gains. Since 2018 we have a strategy with targets for reducing greenhouse gases inside our operating stages (In 2021, we have targets to Refinery, Smelters, Casthouse and Metalex). We annually update projects that can help us achieve this goal and this is done with the R&D and Technology team. One example is the Upgrading Smelter technology, which despite having a high initial investment allows us future financial gains and significant reductions in GHG emissions (can lead to a 20% reduction in our smelting plants that currently represents 70% of CBA's entire emissions). The project was started as a pilot in 2018 and will be completed in 2026, and is part of the actions to obtain a reduced GHG emission by 2030. We currently have 72 cells that already passed through the process of adapting the technology.
Operations	Yes	We evaluate all the projects that improve efficiency of operations and also reduce GHG emissions. These projects are included in our medium-term strategy. As an example, fuzzy logic is an advanced control system that performs an analysis of multiple inputs and action on multiple outputs continuously, from the viewpoint of the behavior by the best operators in industrial processes. The fuzzy logic implementation project ensured a better operational performance of the calcinators, reduced GHG emission and reduced energy use by this equipment. In 2019, the system reflected a 0.53% reduction in the specific use of natural gas. Applying this advanced control system in the Alumina refinery brought higher efficiency with less variability, more competitive production costs, better performance of fuel use (oil and natural gas) and consequently, reduction of GHG emissions. The project was replicated in the Casting stage in 2020. In the production of caster rolls, existing controls were limited by the fact that they analyze one single input and act on one output at a time. Their replacement by multivariable controls based on fuzzy logic allowed reduced variability in the controller response, productivity gains and also operational improvements. Focusing on the redesign of the temperature control strategy in one of the caster melting furnaces during the loading and pouring stages (by monitoring temperature measurement at various points of the basin), it was possible to achieve a 20% drop in specific use of natural gas. Since the beginning of the first uses by this software in 2017, this initiative has already led to a reduction of over 545 tons in fuel oil and over 4.7 million m3 in natural gas needs, equivalent to 11.6 thousand tons of CO2e. Projects that involve recycling processes are also important to reduce the carbon footprint of CBA products. Here CBA is committed to increase the ratio of aluminum recycled from industrial and end-of-life scrap at Metalex to 80%, to increase the ratio of aluminum recycled from industrial and end-of-life scrap in billet production at the Alumínio (SP) plant to 50% and to recycle 40,000 metric tons of cartons and flexible packaging per year by 2030.

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Direct costs Indirect costs Capital expenditures Capital allocation Access to capital	Climate-related risks and opportunities have influenced direct costs with the strategy of reducing use of raw materials and improving process efficiency In our 2030 ESG Strategy (time span: 10 years) we have a lever to develop our climate change objectives: (i) Reduce by 40% the indicator of CO2e emissions (on average of the melts from mining) – In 2021, we saw a 25.4% reduction in emissions as of 2019 (base year); (ii) Obtain a carbon neutral product line available for clients; (iii) Structure carbon credit generation programs in partnership with Reservas Votorantim. Taking care of biodiversity –Reflora CBA; (iv) Define the path for neutralizing emissions by 2050 (Recently we had SBTi approval of our new emissions targets for scopes 1, 2 and 3); (v) Define a plan to adapt to climate change. As part of our planning structure, every year we carry out our PE (Strategic Planning), which provides a projection of CBA's investments over the next 5 years. Within this analysis, all the projects with potential for implementing are taken into account and within this portfolio that is evaluated are our project opportunities focused on reducing GHG emissions. In 2021 CBA went public on the São Paulo Stock Exchange (B3) and floated part of its shares in the market. In our strategy to allocate the sum received by the IPO, the company decided to invest the proceeds obtained through the Initial Offering to finance the Company's organic growth for the next two years and will be directed to the following projects (capital allocation): (i) upgrading of furnace room technology; (ii) dry disposal of waste; (iii) production of additional aluminum from recycling; and (iv) additional production of primary aluminum. Due to the IPO CBA received R\$ 663.385,80 (net), to be used 70% for organic growth, and 30% to inorganic growth (M&A). Climate change also influenced indirect costs (Time span: annual) with the Sustainability area budget to participate in training, events and commitment actions related to climate change. In 2021, CBA's participation in the disclosure of emissions by the Public Register of the GHG Protocol (investment: R\$13.000). In 2021, R\$ 25,000 was spent for studies on internal carbon pricing and another R\$ 25,000 also spent for participation in the CDP Benchmark club. In 2021, in addition to the same sum planned for 2020, an additional R\$ 288,000 was spent on hiring the consulting company that conducted studies required for submitting the goal to SBTi and R\$ 17,000 for data assurance. This year the company has paid a consultant to analyze its carbon footprint calculation methodology (Investment: R\$52,000). Regarding access to capital, In September 2021 CBA obtained a revolving credit facility of US\$ 100 million to replace a US\$ 200 million credit facility in favor of Votorantim S.A., to which CBA was party. Securing this facility underlines our commitment for reducing greenhouse gas (GHG) emissions by our operations—the agreement contains sustainability-linked pricing terms requiring annual emission reductions by 2025. In December CBA also carried out its first issue of debentures for a total of R\$ 230 million. The debentures were issued as green bonds under a framework which consulting firm Sitawi reviewed and confirmed as being aligned with green bond principles, as the net proceeds will be used toward projects aiming to improve environmental performance by CBA's production facilities. The debentures mature on June 15, 2029 and will be amortized in equal instalments on June 15, 2028 and December 15, 2028. In addition, the Brazilian Federal Development Bank (BNDES) disbursed R\$ 79 million under a loan primarily used to maintain production capacity and modernizing the Alumínio Plant. This was the last disbursement under a loan agreement entered into in 2019 and maturing in 2034 Climate change also influenced capital expenditures with the approval of projects potentially able to reduce greenhouse gas emissions. As planned in the ESG Strategy, R\$ 990 million has also been planned in projects to be implemented by 2030 and aimed to reduce GHG emissions.

C3.5

(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's transition to a 1.5°C world?

Yes

C3.5a

(C3.5a) Quantify the percentage share of your spending/revenue that is aligned with your organization's transition to a 1.5°C world.

Financial Metric

CAPEX

Percentage share of selected financial metric aligned with a 1.5°C world in the reporting year (%)

12

Percentage share of selected financial metric planned to align with a 1.5°C world in 2025 (%)

34

Percentage share of selected financial metric planned to align with a 1.5°C world in 2030 (%)

33

Describe the methodology used to identify spending/revenue that is aligned with a 1.5°C world

To define the sums reported in the previous columns, the CBA strategic planning document was used. This document shows the company's future investments for the next 5 years (The document used reflects the period from 2022 to 2026). To calculate percentages, the projects invested through the PE with impacts on emission reductions were highlighted and compared with the total investment for the period evaluated in each column (2021; by 2025; by 2030). Please note that our EP incudes up to 2026 and we have no information beyond this period.

All projects are included in the PE and therefore the values for 2025 and 2030 are the same.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target

Intensity target

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Year target was set

2021

Target coverage

Company-wide

Scope(s)

Scope 1

Scope 2

Scope 2 accounting method

Market-based

Scope 3 category(ies)

<Not Applicable>

Base year

2018

Base year Scope 1 emissions covered by target (metric tons CO2e)

128014

Base year Scope 2 emissions covered by target (metric tons CO2e)

7502

Base year Scope 3 emissions covered by target (metric tons CO2e)

<Not Applicable>

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

135516

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

9

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

33

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

<Not Applicable>

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

10

Target year

2030

Targeted reduction from base year (%)

35

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

88085.4

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

128151

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

0

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

128151

% of target achieved relative to base year [auto-calculated]

15.527950310559

Target status in reporting year

New

Is this a science-based target?

Yes, and this target has been approved by the Science Based Targets initiative

Target ambition

Other, please specify (Well-below 2°C aligned)

Please explain target coverage and identify any exclusions

This target covers scope 1 and 2 emissions and for the following units: Metalex, Itapissuma, Mining (Miraí, Itamarati de Minas e Poços de Caldas units) and Alumínio (only the casthouse and downstream steps are considered).

Plan for achieving target, and progress made to the end of the reporting year

This target covers about 10% of CBA's gross emissions, and for its reduction, we are considering process improvements and support from projects of the competitiveness management area and also in the engineering area.

List the emissions reduction initiatives which contributed most to achieving this target

<Not Applicable>

Target reference number

Abs 2

Year target was set

2021

Target coverage

Company-wide

Scope(s)

Scope 3

Scope 2 accounting method

<Not Applicable>

Scope 3 category(ies)

Category 1: Purchased goods and services

Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2)

Category 4: Upstream transportation and distribution

Category 9: Downstream transportation and distribution

Base year

2019

Base year Scope 1 emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 2 emissions covered by target (metric tons CO2e)

<Not Applicable>

Base year Scope 3 emissions covered by target (metric tons CO2e)

1441295

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

1441295

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

<Not Applicable>

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

<Not Applicable>

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

100

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

Target year

2030

Targeted reduction from base year (%)

13.5

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

1246720.175

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

91

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

2200378.18

% of target achieved relative to base year [auto-calculated]

-390.124046109254

Target status in reporting year

New

Is this a science-based target?

Yes, and this target has been approved by the Science Based Targets initiative

Target ambition

2°C aligned

Please explain target coverage and identify any exclusions

This target covers scope 3 emissions and for the following units all the CBA units from aluminium business. In 2021, CBA had an increase in scope 3, mainly due to the improvement of the maturity in the calculation of emissions in this scope (mainly in categories 4 and 9 in scope 3)

Plan for achieving target, and progress made to the end of the reporting year

Within the scope 3 category, the most representative is category 1, which deals with the purchase of goods and services, and which of the reported categories represents 93% of our scope 3 emissions. Within this category, our largest source of emission is the purchase of ingot that we mainly use in the Metalex and Itapissuma units, which

have only the casthouse and downstream stages. Today we do not have a rule that bars the purchase of ingot according to the carbon footprint of the product, which negatively impacts our scope 3 result since we buy ingot from all over the world. With the Sustainable Supply project, the idea is to draw a rule that limits the purchase of ingots based on their carbon footprint performance, and this will be the main initiative to reduce emissions in this scope. Note: Our emissions in 2021 were higher than in the base year due to the increase in production at the Metalex, Itapissuma and Alumínio units, which resulted in a greater purchase of ingots from the market to supply our raw material demand (Today in the market, the carbon fluctuates between 4tCO₂e/t ingot and 28tCO₂e/t ingot)

List the emissions reduction initiatives which contributed most to achieving this target

<Not Applicable>

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

Int 1

Year target was set

2021

Target coverage

Company-wide

Scope(s)

Scope 1

Scope 2

Scope 2 accounting method

Market-based

Scope 3 category(ies)

<Not Applicable>

Intensity metric

Metric tons CO₂e per metric ton of aluminum

Base year

2018

Intensity figure in base year for Scope 1 (metric tons CO₂e per unit of activity)

1282230

Intensity figure in base year for Scope 2 (metric tons CO₂e per unit of activity)

15556

Intensity figure in base year for Scope 3 (metric tons CO₂e per unit of activity)

<Not Applicable>

Intensity figure in base year for all selected Scopes (metric tons CO₂e per unit of activity)

3.697

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure

91

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure

67

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this Scope 3 intensity figure

<Not Applicable>

% of total base year emissions in all selected Scopes covered by this intensity figure

91

Target year

2030

Targeted reduction from base year (%)

40

Intensity figure in target year for all selected Scopes (metric tons CO₂e per unit of activity) [auto-calculated]

2.2182

% change anticipated in absolute Scope 1+2 emissions

40

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year for Scope 1 (metric tons CO₂e per unit of activity)

2.98

Intensity figure in reporting year for Scope 2 (metric tons CO₂e per unit of activity)

0.02

Intensity figure in reporting year for Scope 3 (metric tons CO₂e per unit of activity)

<Not Applicable>

Intensity figure in reporting year for all selected Scopes (metric tons CO₂e per unit of activity)

3.01

% of target achieved relative to base year [auto-calculated]

46.4565864214228

Target status in reporting year

New

Is this a science-based target?

Yes, and this target has been approved by the Science Based Targets initiative

Target ambition

Well-below 2°C aligned

Please explain target coverage and identify any exclusions

This target used the SDA scenario (Aluminium ambition traced by SBTi to aluminium specific companies). This target covers only the refinery and smelter steps (Both phases represent more than 85% of CBA's absolute emissions).

Plan for achieving target, and progress made to the end of the reporting year

This target count with 3 big projects to support its reduction path (Biomass boiler, smelters technology upgrade and increase of scrap use inside casthouse plants – Metalex and Aluminio plants). Until now we could achieve 21,1% of emissions reductions compared to our base year (Target to reduce 40%).

List the emissions reduction initiatives which contributed most to achieving this target

<Not Applicable>

Target reference number

Int 2

Year target was set

2019

Target coverage

Business division

Scope(s)

Scope 1

Scope 2

Scope 3

Scope 2 accounting method

Market-based

Scope 3 category(ies)

Category 1: Purchased goods and services

Intensity metric

Metric tons CO2e per metric ton of aluminum

Base year

2019

Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)

3.07

Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)

0.02

Intensity figure in base year for Scope 3 (metric tons CO2e per unit of activity)

0.93

Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)

4.02

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure

87

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure

58

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this Scope 3 intensity figure

16

% of total base year emissions in all selected Scopes covered by this intensity figure

95

Target year

2030

Targeted reduction from base year (%)

40

Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated]

2.412

% change anticipated in absolute Scope 1+2 emissions

40

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)

2.29

Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)

0.01

Intensity figure in reporting year for Scope 3 (metric tons CO2e per unit of activity)

0.7

Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)

3

% of target achieved relative to base year [auto-calculated]

63.4328358208955

Target status in reporting year

Underway

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Target ambition

<Not Applicable>

Please explain target coverage and identify any exclusions

This target covers scope 1 and 2 emissions for CBA Aluminio and Metalex plants to the steps that are related to our primary aluminium production. To Metalex we also included scope 3 emissions only from ingot purchase (Following IAI Recommendations to Tier 2 calculation methodology). Note: IAI – International Aluminium Institute. The production used was casthouse step production.

Plan for achieving target, and progress made to the end of the reporting year

This targets count with 3 big projects to support its reduction path (Biomass boiler, smelters technology upgrade and increase of scrap use inside casthouse plants – Metalex and Aluminio plants). Until now we could achieve 25,4% of emissions reductions compared to our base year.

List the emissions reduction initiatives which contributed most to achieving this target

<Not Applicable>

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number

Oth 1

Year target was set

2020

Target coverage

Company-wide

Target type: absolute or intensity

Intensity

Target type: category & Metric (target numerator if reporting an intensity target)

Other, please specify	Other, please specify (CBA has within the ESG Strategy 2030 the objective of structuring a Net-zero goal)
-----------------------	---

Target denominator (intensity targets only)

Other, please specify (This is a qualitative goal, so I do not have a numerical indicator for monitoring)

Base year

2019

Figure or percentage in base year

0

Target year

2019

Figure or percentage in target year

100

Figure or percentage in reporting year

40

% of target achieved relative to base year [auto-calculated]

40

Target status in reporting year

Underway

Is this target part of an emissions target?

Yes. This target is part of the greenhouse gas emissions management pillar of CBA's ESG 2030 strategy

Is this target part of an overarching initiative?

Other, please specify (CBA's 2030 ESG Strategy and Global Compact "Net Zero ambition")

Please explain target coverage and identify any exclusions

In the Casting area, the main issue is related to the consumption of natural gas for heating the ovens. An annual consumption target is determined based on expectations of scrap use and production. In 2019 the target was achieved and there was an additional reduction of 2%. This target is linked to the monetary reward of eligible employees (leaders at all levels) whose worked on Casting.

Plan for achieving target, and progress made to the end of the reporting year

By the year 2021, CBA has managed to structure a trajectory to reduce 40% of its emissions intensity in the production of cast products, and is currently studying new technologies and evaluating partnerships with other institutions to be able to expand its emissions reduction trajectory until reaching a net-zero scenario

List the actions which contributed most to achieving this target

<Not Applicable>

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	9	40065.45
To be implemented*	6	195978.61
Implementation commenced*	1	132441
Implemented*	2	230031.28
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization
---	----------------------

Estimated annual CO2e savings (metric tonnes CO2e)

228006.99

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

77850670

Investment required (unit currency – as specified in C0.4)

0

Payback period

<1 year

Estimated lifetime of the initiative

Ongoing

Comment

In 2020, CBA implemented the biomass boiler in its refinery process. This boiler aims to provide steam generation previously produced by burning Natural Gas and fuel oil in conventional boilers. In 2020 the boiler started its activities in March and had a gradual increase in steam production until June, when in fact the boiler started to operate at full capacity. In 2020 the boiler reduced emissions by approximately 150,000.00 t CO2e as it had no activity at maximum capacity over the entire year. In 2021 the biomass boiler was active over the entire year and was responsible for reducing 198,902.67t CO2e of CBA's scope 1 emissions.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Compliance with regulatory requirements/standards	The CBA project approval process has a priority involving regulatory analysis.
Financial optimization calculations	CBA project approval process has a priority involving financial calculations and technical expertise.
Internal incentives/recognition programs	Our variable compensation has incentive targets related to reduced emissions.
Partnering with governments on technology development	CBA has participated in SBTi, ABAL, IAI, PMR Brasil, São Paulo Agreement discussions.
Employee engagement	The variable cost budget by the Sustainability area involves training and commitment activities on climate change.
Internal price on carbon	In 2021 CBA defined its internal carbon price, so that this new concept should help our leadership in making decisions on projects with emission potential.
Dedicated budget for low-carbon product R&D	CBA's strategic planning considers a budget reserved for our CAPEX projects over the next 5 years.
Dedicated budget for energy efficiency	The CBA strategy includes energy efficiency projects.
Other (Purchase of renewable energy certificates)	Budget reserved for purchasing renewable energy certificates.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

Level of aggregation

Product or service

Taxonomy used to classify product(s) or service(s) as low-carbon

Other, please specify (Today we don't have a specific scale of low carbon products inside the aluminium sector. A study made by Carbon Trust mentioned that inside our sector products with low carbon have a intensity emissions indicator above 4tCO2e/t ingot)

Type of product(s) or service(s)

Aluminum	Other, please specify (All CBA products)
----------	---

Description of product(s) or service(s)

One of the major focuses of our operations is producing sustainable aluminum and helping to tackle important environmental issues, such as natural resource depletion and climate change. Our products are manufactured using renewable energy, helping to minimize greenhouse gas emissions. CBA invests continually in innovative solutions to lessen environmental impact and expand our aluminum recycling capabilities. Our primary aluminum has low emission levels (We are currently on the first quartile of smelter phase emissions intensity – Source: CRU – A financial consultancy) and is competitive with that of our competitors around the world.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Other, please specify (IAI methodology (Tier 2 emissions))

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Cradle-to-gate

Functional unit used

tCO2e/t product

Reference product/service or baseline scenario used

All CBA's products

Life cycle stage(s) covered for the reference product/service or baseline scenario

Cradle-to-gate

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

8.09

Explain your calculation of avoided emissions, including any assumptions

This calculation considered a comparison between the intensity of emissions in the electrolysis stage (the most carbon intensive phase of aluminum production) between the CBA result in 2021 (2.56 tCO2e/t Al) with the world average reported by the CRU in 2021 (10.65 tCO2e/t Al). Calculation explanation: 10.65 (CRU data) - 2.56 (CBA data) = 8.09 (Result)

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

100

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?

No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?

No

Name of organization(s) acquired, divested from, or merged with

<Not Applicable>

Details of structural change(s), including completion dates

<Not Applicable>

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	No	<Not Applicable>

C5.2

(C5.2) Provide your base year and base year emissions.

Scope 1

Base year start

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

1158608.856

Comment

These GHG emissions refer to the Aluminum and Nickel Businesses.

Scope 2 (location-based)

Base year start

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

799535.136

Comment

These GHG emissions refer to the Aluminum and Nickel Businesses.

Scope 2 (market-based)

Base year start

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

6988.661

Comment

These GHG emissions refer to the Aluminum and Nickel Businesses.

Scope 3 category 1: Purchased goods and services

Base year start

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

2052237.613

Comment

These GHG emissions refer to the Aluminum Business, as Nickel has interrupted its operations.

Scope 3 category 2: Capital goods

Base year start

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

0

Comment

This category is not relevant to CBA's activities.

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

36861.255

Comment

These GHG emissions refer to the Aluminum Business, as Nickel has interrupted its operations.

Scope 3 category 4: Upstream transportation and distribution

Base year start

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

79650.092

Comment

These GHG emissions refer to the Aluminum Business, as Nickel has interrupted its operations.

Scope 3 category 5: Waste generated in operations

Base year start

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

0

Comment

This category is not relevant to CBA's activities.

Scope 3 category 6: Business travel

Base year start

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

0

Comment

This category is not relevant to CBA's activities.

Scope 3 category 7: Employee commuting

Base year start

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

0

Comment

This category is not relevant to CBA's activities.

Scope 3 category 8: Upstream leased assets

Base year start

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

0

Comment

This category is not relevant to CBA's activities.

Scope 3 category 9: Downstream transportation and distribution**Base year start**

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

31629.223

Comment

These GHG emissions refer to the Aluminum Business, as Nickel has interrupted its operations.

Scope 3 category 10: Processing of sold products**Base year start**

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

208228.64

Comment

These GHG emissions refer to the Aluminum Business, as Nickel has interrupted its operations.

Scope 3 category 11: Use of sold products**Base year start**

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

0

Comment

This category is not relevant to CBA's activities.

Scope 3 category 12: End of life treatment of sold products**Base year start**

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

0

Comment

This category is not relevant to CBA's activities.

Scope 3 category 13: Downstream leased assets**Base year start**

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

0

Comment

This category is not applicable to CBA.

Scope 3 category 14: Franchises**Base year start**

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

0

Comment

This category is not applicable to CBA.

Scope 3 category 15: Investments

Base year start

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

0

Comment

This category is not relevant to CBA's activities.

Scope 3: Other (upstream)

Base year start

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

0

Comment

This category is not relevant to CBA's activities.

Scope 3: Other (downstream)

Base year start

January 1 2021

Base year end

December 31 2021

Base year emissions (metric tons CO2e)

0

Comment

This category is not relevant to CBA's activities.

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

Brazil GHG Protocol Programme

We used the Brazil GHG Protocol Program. The step of choosing the units was carried out through operational control using the relevance approach to exclude processes. For Scope 2, the purchase choice methodology was adopted, as our main source of energy is in-house hydroelectric plants. For scope 3, we chose to report the following category: Purchased goods and services (Category 1 - 52.22% of scope 3), Fuel and energy related activities (Category 3 - 4.24% of scope 3), Upstream Transportation (Category 4 - 6.51% of scope 3) and Investments (Category 15 - 5.65% of scope 3). These categories have a total of 68.62% of CBA's scope 3 and were chosen as they are categories that CBA has the power to manage over the indicators to establish emission reduction goals.

C6. Emissions data

C6.1

(C6.1) What were your organization’s gross global Scope 1 emissions in metric tons CO2e?

Reporting year
Gross global Scope 1 emissions (metric tons CO2e)
1158609
Start date
January 1 2021
End date
December 31 2021
Comment
These GHG emissions refer to the Aluminum and Nickel Businesses.

Past year 1
Gross global Scope 1 emissions (metric tons CO2e)
1067178.48
Start date
January 1 2020
End date
December 31 2020
Comment
These GHG emissions refer to the Aluminum and Nickel Businesses.

Past year 2
Gross global Scope 1 emissions (metric tons CO2e)
1297627.66
Start date
January 1 2019
End date
December 31 2019
Comment
These GHG emissions refer to the Aluminum and Nickel Businesses.

Past year 3
Gross global Scope 1 emissions (metric tons CO2e)
1370934.33
Start date
January 1 2018
End date
December 31 2018
Comment
These GHG emissions refer to the Aluminum and Nickel Businesses.

C6.2

(C6.2) Describe your organization’s approach to reporting Scope 2 emissions.

Row 1
Scope 2, location-based
We are reporting a Scope 2, location-based figure
Scope 2, market-based
We are reporting a Scope 2, market-based figure
Comment
CBA chose to report its scope 2 with a market-based approach. This decision was consolidated based on the fact that CBA has 21 hydroelectric plants with a capacity to produce 100% of its own electricity needs (value subject to changes due to climate issues and rain regimes in the region of our plants). Because of our clean energy sources, we have achieved great reductions in GHG emissions compared to the market.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

799535.14

Scope 2, market-based (if applicable)

6988.661

Start date

January 1 2021

End date

December 31 2021

Comment

These GHG emissions refer to the Aluminum and Nickel Businesses. In 2021 our hydroelectric plants were able to supply 82.7% of our energy needs. Following the calculation methodology and the GHG Protocol Brazil tool, the emission factor by the national grid doubled in 2021 as the year that portrays the impacts on energy generation in 2020 due to the Covid-19 pandemic.

Past year 1

Scope 2, location-based

345642.994

Scope 2, market-based (if applicable)

72503.506

Start date

January 1 2020

End date

December 31 2020

Comment

These GHG emissions refer to the Aluminum and Nickel Businesses. In 2020 our hydroelectric plants were able to supply 81.4% of our energy needs.

Past year 2

Scope 2, location-based

415127.7

Scope 2, market-based (if applicable)

9894.05

Start date

January 1 2019

End date

December 31 2019

Comment

These GHG emissions refer to the Aluminum and Nickel Businesses. In 2019 our hydroelectric plants were able to supply 98% of our energy needs.

Past year 3

Scope 2, location-based

438518.05

Scope 2, market-based (if applicable)

17907.99

Start date

January 1 2018

End date

December 31 2018

Comment

These GHG emissions refer to the Aluminum and Nickel Businesses. In 2018 our hydroelectric plants were able to supply 96% of our energy needs.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.	
Source	Sorocaba Facility, Distribution Center, Barro Alto Unit and Corporative Office
Relevance of Scope 1 emissions from this source	Emissions are not relevant
Relevance of location-based Scope 2 emissions from this source	Emissions are not relevant
Relevance of market-based Scope 2 emissions from this source (if applicable)	Emissions are not relevant
Explain why this source is excluded	Small units with very low emissions (the sum represents less than 1%).
Estimated percentage of total Scope 1+2 emissions this excluded source represents	0
Explain how you estimated the percentage of emissions this excluded source represents	In the last two years, CBA has gone through the process of structuring its goals through Science Based Targets. During this process, it had the support of Way Carbon consultancy to structure the target's final version, and one of the stages of the project involved measurement of emissions from all the units under CBA's operational control. Within this study we were able to assess that altogether these units that were excluded account for less than 0.1% of the company's consolidated emissions.

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.	
Purchased goods and services	
Evaluation status	Relevant, calculated
Emissions in reporting year (metric tons CO2e)	2052237.613
Emissions calculation methodology	Other, please specify (To calculate scope 3 category 1 emissions factors from the IPCC 2007 GWP 100a report were used, together with information from the "Ecoinvent 3 - Emission Factor" database , the "Europeum Aluminum ENVIRONMENTAL PROFILE" report and the "DEFRA 2020".)
Percentage of emissions calculated using data obtained from suppliers or value chain partners	0
Please explain	The data was calculated using previously reported emission factors and suppliers did not submit primary emissions data. In 2021, IAI (International Aluminium Institute) carried out a study on scope 3 emissions specific to the aluminum sector. This category is very significant for the sector because of the carbon footprint of aluminum ingots that are purchased on the market, along with the carbon footprint of all inputs consumed by the production process (Example: caustic soda, lime, among others). At the end of the study, they indicated that the relevant categories for the sector are categories 1, 3, 4, 9 and 10. This category represented 85,2% of CBA's scope 3 emissions (considering relevant categories).
Capital goods	
Evaluation status	Not relevant, explanation provided
Emissions in reporting year (metric tons CO2e)	<Not Applicable>
Emissions calculation methodology	<Not Applicable>
Percentage of emissions calculated using data obtained from suppliers or value chain partners	<Not Applicable>
Please explain	In 2021, IAI (International Aluminium Institute) carried out a study on scope 3 emissions specific to the aluminium sector. At the end of the study, they indicated that the relevant categories for the sector are categories 1, 3, 4, 9 and 10. Compared with the emissions of the categories that are significant (mainly category 1, purchase of consumer goods) this category proved to be of little relevance for the aluminum sector. For CBA, it was estimated that this category represented 0.85% of the company's scope 3 emissions in 2019 (study carried out to structure the SBTi target).

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO₂e)

36861.26

Emissions calculation methodology

Other, please specify (To calculate scope 3 category 1 emissions factors from the IPCC 2007 GWP 100a report were used, together with information from the "Ecoinvent 3 - Emission Factor" database , the "Europeum Aluminum ENVIRONMENTAL PROFILE" report and the "DEFRA 2020".)

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

The data was calculated using previously reported emission factors and suppliers did not submit primary emissions data. In 2021, IAI (International Aluminium Institute) carried out a study on scope 3 emissions specific to the aluminum sector. At the end of the study, they indicated that the relevant categories for the sector are categories 1, 3, 4, 9 and 10. This category represented 1,5% of CBA's scope 3 emissions (considering relevant categories).

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO₂e)

79650.09

Emissions calculation methodology

Other, please specify (Brazil GHG Protocol Program - upstream transportation)

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

In 2021, IAI (International Aluminium Institute) carried out a study on scope 3 emissions specific to the aluminum sector. At the end of the study, they indicated that the relevant categories for the sector are categories 1, 3, 4, 9 and 10. This category represented 3,3% of CBA's scope 3 emissions (considering relevant categories).

Waste generated in operations

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO₂e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

In 2021, IAI (International Aluminium Institute) carried out a study on scope 3 emissions specific to the aluminum sector. At the end of the study, they indicated that the relevant categories for the sector are categories 1, 3, 4, 9 and 10. Compared with the emissions of the categories that are significant (mainly category 1, purchase of consumer goods) this category proved to be of little relevance for the aluminum sector. For CBA, it was estimated that this category represented 1.35% of the company's scope 3 emissions in 2019 (study carried out to structure the SBTi target)

Business travel

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO₂e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

In 2021, IAI (International Aluminium Institute) carried out a study on scope 3 emissions specific to the aluminum sector. At the end of the study, they indicated that the relevant categories for the sector are categories 1, 3, 4, 9 and 10. Compared with the emissions of the categories that are significant (mainly category 1, purchase of consumer goods) this category proved to be of little relevance for the aluminum sector. For CBA, it was estimated that this category represented 0.07% of the company's scope 3 emissions in 2019 (study carried out to structure the SBTi target)

Employee commuting

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

In 2021, IAI (International Aluminium Institute) carried out a study on scope 3 emissions specific to the aluminum sector. At the end of the study, they indicated that the relevant categories for the sector are categories 1, 3, 4, 9 and 10. Compared with the emissions of the categories that are significant (mainly category 1, purchase of consumer goods) this category proved to be of little relevance for the aluminum sector. For CBA, it was estimated that this category represented 0.35% of the company's scope 3 emissions in 2019 (study carried out to structure the SBTi target)

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

In 2021, IAI (International Aluminium Institute) carried out a study on scope 3 emissions specific to the aluminum sector. At the end of the study, they indicated that the relevant categories for the sector are categories 1, 3, 4, 9 and 10. Compared with the emissions of the categories that are significant (mainly category 1, purchase of consumer goods) this category proved to be of little relevance for the aluminum sector. For CBA, it was estimated that this category represented 0.00% of the company's scope 3 emissions in 2019 (study carried out to structure the SBTi target)

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

31629.22

Emissions calculation methodology

Other, please specify (Brazil GHG Protocol Program – downstream transportation.)

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

In 2021, IAI (International Aluminium Institute) carried out a study on scope 3 emissions specific to the aluminum sector. At the end of the study, they indicated that the relevant categories for the sector are categories 1, 3, 4, 9 and 10. This category represented 1,3% of CBA's scope 3 emissions (considering relevant categories).

Processing of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

208228.64

Emissions calculation methodology

Other, please specify (To calculate scope 3 category 1 emissions factors from the IPCC 2007 GWP 100a report were used, together with information from the "Ecoinvent 3 - Emission Factor" database, the "Europeum Aluminum ENVIRONMENTAL PROFILE" report and the "DEFRA 2020".)

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

In 2021, IAI (International Aluminium Institute) carried out a study on scope 3 emissions specific to the aluminum sector. At the end of the study, they indicated that the relevant categories for the sector are categories 1, 3, 4, 9 and 10. This category represented 8,6% of CBA's scope 3 emissions (considering relevant categories).

Use of sold products

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

In 2021, IAI (International Aluminium Institute) carried out a study on scope 3 emissions specific to the aluminum sector. At the end of the study, they indicated that the relevant categories for the sector are categories 1, 3, 4, 9 and 10. Compared with the emissions of the categories that are significant (mainly category 1, purchase of consumer goods) this category proved to be of little relevance for the aluminum sector. For CBA, it was estimated that this category represented 0.48% of the company's scope 3 emissions in 2019 (study carried out to structure the SBTi target)

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

In 2021, IAI (International Aluminium Institute) carried out a study on scope 3 emissions specific to the aluminum sector. At the end of the study, they indicated that the relevant categories for the sector are categories 1, 3, 4, 9 and 10. Compared with the emissions of the categories that are significant (mainly category 1, purchase of consumer goods) this category proved to be of little relevance for the aluminum sector.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

CBA doesn't have this type of activity, so this category are not applicable.

Franchises

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

CBA doesn't have this type of activity, so that category are not applicable.

Investments

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

In 2021, IAI (International Aluminium Institute) carried out a study on scope 3 emissions specific to the aluminum sector. At the end of the study, they indicated that the relevant categories for the sector are categories 1, 3, 4, 9 and 10. This category represented 1,3% of CBA's scope 3 emissions (considering relevant categories). Compared with the emissions of the categories that are significant (mainly category 1, purchase of consumer goods) this category proved to be of little relevance for the aluminum sector.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

No other upstream categories applicable to CBA were identified.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

Please explain

No other downstream categories applicable to CBA were identified.

C6.5a

(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

Start date

January 1 2020

End date

December 31 2020

Scope 3: Purchased goods and services (metric tons CO2e)

1360462.55

Scope 3: Capital goods (metric tons CO2e)

0

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

67623.711

Scope 3: Upstream transportation and distribution (metric tons CO2e)

22232.344

Scope 3: Waste generated in operations (metric tons CO2e)

0

Scope 3: Business travel (metric tons CO2e)

0

Scope 3: Employee commuting (metric tons CO2e)

0

Scope 3: Upstream leased assets (metric tons CO2e)

0

Scope 3: Downstream transportation and distribution (metric tons CO2e)

0

Scope 3: Processing of sold products (metric tons CO2e)

0

Scope 3: Use of sold products (metric tons CO2e)

0

Scope 3: End of life treatment of sold products (metric tons CO2e)

0

Scope 3: Downstream leased assets (metric tons CO2e)

0

Scope 3: Franchises (metric tons CO2e)

0

Scope 3: Investments (metric tons CO2e)

0

Scope 3: Other (upstream) (metric tons CO2e)

0

Scope 3: Other (downstream) (metric tons CO2e)

0

Comment

This year we included categories 9 and 10 in our scope 3 emissions accompanying material.

Past year 2

Start date

January 1 2019

End date

December 31 2019

Scope 3: Purchased goods and services (metric tons CO2e)

1261593.78

Scope 3: Capital goods (metric tons CO2e)

0

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

66790.39

Scope 3: Upstream transportation and distribution (metric tons CO2e)

105387.66

Scope 3: Waste generated in operations (metric tons CO2e)

0

Scope 3: Business travel (metric tons CO2e)

0

Scope 3: Employee commuting (metric tons CO2e)

0

Scope 3: Upstream leased assets (metric tons CO2e)

0

Scope 3: Downstream transportation and distribution (metric tons CO2e)

0

Scope 3: Processing of sold products (metric tons CO2e)

0

Scope 3: Use of sold products (metric tons CO2e)

0

Scope 3: End of life treatment of sold products (metric tons CO2e)

0

Scope 3: Downstream leased assets (metric tons CO2e)

0

Scope 3: Franchises (metric tons CO2e)

0

Scope 3: Investments (metric tons CO2e)

0

Scope 3: Other (upstream) (metric tons CO2e)

0

Scope 3: Other (downstream) (metric tons CO2e)

0

Comment

This year we started monitoring scope 3 emissions due to our study to create an SBTi target (Science Based Targets Initiative).

Past year 3

Start date

January 1 2018

End date

December 31 2018

Scope 3: Purchased goods and services (metric tons CO2e)

0

Scope 3: Capital goods (metric tons CO2e)

0

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

0

Scope 3: Upstream transportation and distribution (metric tons CO2e)

0

Scope 3: Waste generated in operations (metric tons CO2e)

0

Scope 3: Business travel (metric tons CO2e)

0

Scope 3: Employee commuting (metric tons CO2e)

0

Scope 3: Upstream leased assets (metric tons CO2e)

0

Scope 3: Downstream transportation and distribution (metric tons CO2e)

0

Scope 3: Processing of sold products (metric tons CO2e)

0

Scope 3: Use of sold products (metric tons CO2e)

0

Scope 3: End of life treatment of sold products (metric tons CO2e)

0

Scope 3: Downstream leased assets (metric tons CO2e)

0

Scope 3: Franchises (metric tons CO2e)

0

Scope 3: Investments (metric tons CO2e)

0

Scope 3: Other (upstream) (metric tons CO2e)

0

Scope 3: Other (downstream) (metric tons CO2e)

0

Comment

We did not calculate our scope 3 emissions in 2018.

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	383726.139	When we compare our biogenic emissions from 2019 to 2021, we notice that there has been a large increase. This change is due to implementing the biomass boiler, which alone was responsible for biogenic emissions of 369.538,751 t CO2e in 2021.

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure	0.00014
Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)	1165597.51
Metric denominator	unit total revenue
Metric denominator: Unit total	8400000000
Scope 2 figure used	Market-based
% change from previous year	29.8
Direction of change	Decreased
Reason for change	In 2021 the biomass boiler was in operation throughout the year, which caused an even greater reduction in emissions than in 2020. In addition, the company purchased RECs (Renewable Energy Certificates) to ensure 100% traceability of electricity use by all its units, which resulted in a scope 2 emission for electricity equal to zero. In 2021, CBA also went public, which resulted in an increase in its net revenues, positively impacting the indicator. In 2020, if we use the same calculation, the indicator would be 0.0002 t CO2e/R\$.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?
Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	911808	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	194	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	440	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	3168	IPCC Fifth Assessment Report (AR5 – 100 year)
PFCs	241730	IPCC Fifth Assessment Report (AR5 – 100 year)
SF6	1269	IPCC Fifth Assessment Report (AR5 – 100 year)
NF3	0	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
Brazil	1158609

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.
By business division
By facility
By activity

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Aluminum Business . The Aluminum Business involves mining units, an integrated Aluminum Plant (Refinery, Smelters, Casting and Transformation), Itapissuma and Metalex plant.	1157692
Nickel Business. The Nickel Business has two units (São Miguel Paulista, SP / Niquelândia/GO) and both have had no productive activities in recent years, and hence their needs are not very representative.	917

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Aluminum Plant - Refinery, Smelters, Casting and Transformation	1093698	-23.535007	-47.261304
Metalex - aluminum recycling unit for billet production	16597	-23.436855	-47.063855
Mirai Mining - This unit has mining and processing of bauxite	4719	-21.058433	-42.568312
Itamarati de Minas Mining - There was no mining (bauxite) at this unit in 2019.	152	-21.446461	-42.87897
Poços de Caldas Mining - This unit only does bauxite mining	2445	-21.823999	-46.634594
São Miguel Paulista facility - Nickel production plant. Temporarily out of production.	201	-23.483489	-46.434031
Niquelândia Mining - Nickel mining unit. Temporarily out of production.	716	-14.345246	-48.441254
Itapissuma Plant – Casting and Rolling mill	40081	-7.797339	-34.905503

C7.3c

(C7.3c) Break down your total gross global Scope 1 emissions by business activity.

Activity	Scope 1 emissions (metric tons CO2e)
Bauxite Mining	7316
Alumina Refinery	134591
Aluminum Smelter	881911
Aluminum Casting	52199
Aluminum Transformation (rolling mill and extrusion)	11958
Scrap processing (Metalex)	16597
Nickel production	201
Nickel mining	716
Support areas of the integrated plant in Aluminio (SP)	13038
Aluminium Casting and Transformation (rolling mill) in Itapissuma	40081

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization’s total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	1158609	<Not Applicable>	All CBA activities are Metals and mining production activities.
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Brazil	799535	6988.661

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division
By facility
By activity

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Aluminum Business .	798483	6988.661
Nickel Business.	1052	0

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Aluminum Plant	787918	6988.661
Metalex	552	0
Miraf Mining	571	0
Itamarati de Minas Mining	85	0
Poços de Caldas Mining	46	0
São Miguel Paulista facility	219	0
Niquelândia Mining	833	0
Itapissuma Plant	9311	0

C7.6c

(C7.6c) Break down your total gross global Scope 2 emissions by business activity.

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Bauxite Mining	702	0
Alumina Refinery	34846	6988.661
Aluminum Smelter	675389	0
Aluminum Casting	11443	0
Aluminum Transformation	23904	0
Scrap processing (Metalex)	552	0
Nickel Production	219	0
Nickel Mining	833	0
Support areas of the integrated plant in Aluminio (SP)	24168	0
Itapissuma	9311	0

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO₂e.

	Scope 2, location-based, metric tons CO ₂ e	Scope 2, market-based (if applicable), metric tons CO ₂ e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	799535	6988.661	All CBA activities are Metals and mining production activities.
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Increased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO ₂ e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	65515	Decreased	90.4	In 2021 CBA hydroelectric plants were able to supply 82.7% of our energy needs to the Aluminio Plant (in 2020 supplied 81.4%), thus enabling us to purchase a smaller volume of electricity from the Brazilian Grid. About that, CBA has established a governance practice to purchase only renewable and traceable energy starting in 2021. This year the company began to make moves to achieve its goal of using 100% energy from renewable sources. In 2021, due to rainfall, energy produced by our hydroelectric plants was impacted by periods of drought. In order to ensure that 100% of electricity used in all CBA units comes from traceable renewable sources, the company made its first purchase of RECs (renewable energy certificates). In 2020 scope 2 emissions from use of energy was 72,504 t CO ₂ e, while in 2021 it was only 6,989 t CO ₂ e. Absolute emissions calculation: 72,504 - 6,989 = 65,515 t CO ₂ e. Percentage calculation: (6,989 - 72,504) / 72,504 = 90.4% (emission reduction)
Other emissions reduction activities	47549	Decreased	26.1	In 2020 we implemented the Biomass Boiler but its activities started only in March and steam production started gradually, reaching full capacity only in July. In 2021 the Biomass Boiler worked all the year with full capacity production, responsible for this project's decline in emissions. In 2020 the refinery area was responsible for 182,140 t CO ₂ e (Considering only natural gas and fuel oil), and in 2021 the area emitted 134,591 t CO ₂ e, resulting in a drop of 47,549t CO ₂ e. Absolute emissions calculation: 182,140 - 134,591 = 47,549t CO ₂ e Percentage calculation: (134,591 - 182,140) / 182,140 = 26.1% (emission decline)
Divestment		<Not Applicable>		N/A
Acquisitions		<Not Applicable>		N/A
Mergers		<Not Applicable>		N/A
Change in output		<Not Applicable>		N/A
Change in methodology		<Not Applicable>		N/A
Change in boundary		<Not Applicable>		N/A
Change in physical operating conditions	91429	Increased	8.6	In 2021 CBA had a 17.9% production increase (72,533 tons of finished products, considering Aluminio, Metalex and Itapissuma production), which ended up reflecting an increase in the company's absolute emissions. In 2020 absolute emissions were 1,067,178 tCO ₂ e, while in 2021 they were at 1,158,607 t CO ₂ e, generating an increase of 91,429 t CO ₂ e, which reflected in an 8.6% increase. Despite the increase in absolute emissions, when we talk of specific emissions by products due to implementation of emission reduction projects and process improvements, there was a reduction in tGHG emissions intensity. Speaking of intensity, in 2020 CBA resulted was 2.63 t CO ₂ e/t finished products, and in 2021 it reduced to 2.43 t CO ₂ e/t finished products, which resulted in a reduction of 0.21 tCO ₂ e/t finished products, i.e. a reduction of 7.9% in emission intensity. Absolute emissions calculation: 1,158,607 - 1,067,178 = 91,429 t CO ₂ e Percentage calculation: (1,158,607 - 1,067,178) / 1,067,178 = 26,1% (emission increase)
Unidentified		<Not Applicable>		N/A
Other		<Not Applicable>		N/A

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?
Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?
More than 35% but less than or equal to 40%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	Unable to confirm heating value	18825	1432507	1451332
Consumption of purchased or acquired electricity	<Not Applicable>	1059895	0	1059895
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	868469	0	868469
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	5066663	<Not Applicable>	5066663
Total energy consumption	<Not Applicable>	7013852	1432507	8446359

C-MM8.2a

(C-MM8.2a) Report your organization's energy consumption totals (excluding feedstocks) for metals and mining production activities in MWh.

	Heating value	Total MWh
Consumption of fuel (excluding feedstocks)	Unable to confirm heating value	1451332
Consumption of purchased or acquired electricity	<Not Applicable>	1059895
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	868469
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	5066663
Total energy consumption	<Not Applicable>	8446359

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Sustainable biomass

Heating value
Unable to confirm heating value

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
CBA consumes 868,469.19 MWh of steam from biomass, but this steam is purchased from a partner.

Other biomass

Heating value
Unable to confirm heating value

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
Not applicable to CBA

Other renewable fuels (e.g. renewable hydrogen)

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

18825

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

18825

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Considering ethanol and biodiesel needs

Coal

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Not applicable to CBA

Oil

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Not applicable to CBA

Gas

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

1252075

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

610679

MWh fuel consumed for self-generation of steam

641396

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Considering Natural Gas and its use in Refinery to generate steam

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

180432

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

163704

MWh fuel consumed for self-generation of steam

16727

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

Considering BTE oil, gasoline, diesel and GLP consumption

Total fuel

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

1451332

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

793209

MWh fuel consumed for self-generation of steam

658123

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

<Not Applicable>

Comment

N/A

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	5066663	5066663	5066663	5066663
Heat	793209	793209	18825	18825
Steam	658123	658123	0	0
Cooling	0	0	0	0

C-MM8.2d

(C-MM8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed for metals and mining production activities.

	Total gross generation (MWh) inside metals and mining sector boundary	Generation that is consumed (MWh) inside metals and mining sector boundary
Electricity	5066663	5066663
Heat	793209	793209
Steam	658123	658123
Cooling	0	0

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method

Other, please specify (Self-generation based on hydroelectric plants (82.7%) and purchase of renewable energy certificates (17.3%))

Energy carrier

Electricity

Low-carbon technology type

Hydropower (capacity unknown)

Country/area of low-carbon energy consumption

Brazil

Tracking instrument used

Other, please specify (Self-declaration for CBA self-generation (82.7%) and purchase of renewable energy certificates (17.3%))

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

6126558

Country/area of origin (generation) of the low-carbon energy or energy attribute

Brazil

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2012

Comment

CBA has a capacity to generate 100% of its electricity needs with its own hydroelectric plants, but climate aspects of rainfall can impact generation and in 2021 Brazil suffered a period of drought.

C8.2g

(C8.2g) Provide a breakdown of your non-fuel energy consumption by country.

Country/area

Brazil

Consumption of electricity (MWh)

6126558

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

6126558

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description

Other, please specify (Create a roadmap to becoming emissions neutral by 2050 and Develop a climate change adaptation plan)

Metric value

0

Metric numerator

This goal is qualitative.

Metric denominator (intensity metric only)

This goal is qualitative.

% change from previous year

0

Direction of change

No change

Please explain

Both targets are qualitative, but they are important objectives for the GHG management program, and therefore their progress is monitored in internal routines with the leadership. With the role of supporting both goals in 2021, the CBA submitted emissions reduction targets to the SBTi initiative. The roadmap is being developed to neutralize our emissions and carried out the restructuring of climate risks following the TCFD methodology and mapping of measures of mitigation and adaptation

C-MM9.3a

(C-MM9.3a) Provide details on the commodities relevant to the mining production activities of your organization.

Output product

Bauxite

Capacity, metric tons

3600000

Production, metric tons

923044.69

Production, copper-equivalent units (metric tons)

4724

Scope 1 emissions

7325.28

Scope 2 emissions

0

Scope 2 emissions approach

Market-based

Pricing methodology for copper-equivalent figure

CBA's production was multiplied by the average world price of bauxite in 2021 (R\$ 257). The result was divided by the world average copper price in 2021 (R\$ 50,254.00).

Comment

Production and emissions were only considered for the units of which we have operational control.

Output product

Nickel

Capacity, metric tons

3700000

Production, metric tons

0

Production, copper-equivalent units (metric tons)

0

Scope 1 emissions

916.93

Scope 2 emissions

0

Scope 2 emissions approach

Market-based

Pricing methodology for copper-equivalent figure

The Nickel Business has been interrupted and production is zero.

Comment

The Nickel Business has been interrupted and production is zero, while emissions refer only to maintenance activities.

C-MM9.3b

(C-MM9.3b) Provide details on the commodities relevant to the metals production activities of your organization.

Output product

Alumina

Capacity (metric tons)

1098000

Production (metric tons)

703219.74

Annual production in copper-equivalent units (thousand tons)

24977

Scope 1 emissions (metric tons CO2e)

134591.22

Scope 2 emissions (metric tons CO2e)

6988.66

Scope 2 emissions approach

Market-based

Pricing methodology for-copper equivalent figure

CBA's production was multiplied by the average 2020 price of alumina (R\$ 1,785.00). The result was divided by the world average copper price in 2021 (R\$ 50,254.00).

Comment

Our alumina production is mainly focused on supplying material to the Smelter stage for the production of primary aluminum.

Output product

Aluminum

Capacity (metric tons)

627196

Production (metric tons)

344929.97

Annual production in copper-equivalent units (thousand tons)

91780

Scope 1 emissions (metric tons CO2e)

881911.15

Scope 2 emissions (metric tons CO2e)

0

Scope 2 emissions approach

Market-based

Pricing methodology for-copper equivalent figure

CBA's production was multiplied by the average LME 2020 price of aluminum (R\$ 13,372.00). The result was divided by the world average copper price in 2020 (R\$ 50,254.00).

Comment

Our smelter production is mainly focused on supplying material to the Casthouse stage, for the production of primary aluminum (ingots, billets, and others).

Output product

Nickel

Capacity (metric tons)

23000

Production (metric tons)

0

Annual production in copper-equivalent units (thousand tons)

0

Scope 1 emissions (metric tons CO2e)

916.93

Scope 2 emissions (metric tons CO2e)

0

Scope 2 emissions approach

Location-based

Pricing methodology for-copper equivalent figure

The Nickel Business has been interrupted, and production is zero.

Comment

The Nickel Business has been interrupted and production is zero, while emissions refer only to maintenance activities.

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	CBA aluminum is considered a low-carbon product and this assumption is applicable to the entire production by the Alumínio(SP) unit. Today, CBA invests and reserves large investments to support our trajectory of decarbonization of our process. The company has investments in CAPEX, with projects that present significant emission reductions, and also invests in emission compensation projects (REDD+, Reforest, purchase of RECs - Renewable energy certificates for all its units) and also invests in new sources of renewable electricity.

C-MM9.6a

(C-MM9.6a) Provide details of your organization’s investments in low-carbon R&D for metals and mining production activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Green metals	Pilot demonstration	≤20%	14106000	This investment refers to the Green Soderberg Project , which aims to modernize Soderberg smelter production, reducing GHG emissions. In the last 3 years, 72 pilot pots were installed to learn the new technology.
Waste reprocessing	Large scale commercial deployment	41 - 60%	25701559	A dryer dam is a safer dam. CBA is investing R\$ 306 million in a filter-press project that will introduce a new residue disposal method at the Palmital bauxite residue dam in Alumínio (SP), switching from wet disposal (45% solids) to dry disposal (75% solids). Migrating to dry disposal will require installation of a filter press to remove the liquid fraction before the bauxite residue arrives at the storage facility. The project will extend the useful life of the dam by at least 20 years, and is on track to start operating in 2024.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

*
Declaração CDP_Aseguração PwC.pdf
CBA_Annual_Report_2021.pdf

Page/ section reference

Pages from 137 to 139 of the Annual Report.

Relevant standard

Other, please specify (ISAE3000, GRI and SASB)

Proportion of reported emissions verified (%)

100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

*

Declaração CDP_Asseguração PwC.pdf

CBA_Annual_Report_2021.pdf

Page/ section reference

Pages from 137 to 139 of the Annual Report

Relevant standard

Other, please specify (ISAE3000, GRI, SASB)

Proportion of reported emissions verified (%)

100

Scope 2 approach

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

*

CBA_Annual_Report_2021-min.pdf

Declaração CDP_Asseguração PwC.pdf

Page/ section reference

Pages from 137 to 139 of the Annual Report

Relevant standard

Other, please specify (ISAE3000, GRI, SASB)

Proportion of reported emissions verified (%)

100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category

Scope 3: Purchased goods and services
Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
Scope 3: Upstream transportation and distribution
Scope 3: Downstream transportation and distribution
Scope 3: Processing of sold products

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

*
Declaração CDP_Aseguração PwC.pdf
CBA_Annual_Report_2021.pdf

Page/section reference

Pages from 137 to 139 of the Annual Report
Only the category 10 of scope 3 emissions wasn't verified by a third party because it is still an estimate (It was the first year that CBA had calculated it so the methodology is still under evaluation and maturation).

Relevant standard

Other, please specify (ISAE3000, GRI, SASB)

Proportion of reported emissions verified (%)

91

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C4. Targets and performance	Emissions reduction activities	Independent auditor's limited assurance report on sustainability information in the CBA - 2021 Annual Report (GRI).	Our entire annual report goes through the third-party verification process, including our ESG 2030 strategy and our reported results of achieving our targets. Declaração CDP_Aseguração PwC.pdf
C8. Energy	Energy consumption	Independent auditor's limited assurance report on sustainability information in the CBA - 2021 Annual Report (GRI).	Our entire annual report goes through the third-party verification process, including our energy indicators. Declaração CDP_Aseguração PwC.pdf
C7. Emissions breakdown	Year on year change in emissions (Scope 1)	Independent auditor's limited assurance report on sustainability information in the CBA - 2021 Annual Report (GRI).	This information was assured, as it is included in the Annual Report, developed in the GRI and SASB standards and audited by a third party. Declaração CDP_Aseguração PwC.pdf
C7. Emissions breakdown	Year on year change in emissions (Scope 2)	Independent auditor's limited assurance report on sustainability information in the CBA - 2021 Annual Report (GRI).	This information was assured, as it is included in the Annual Report, developed in the GRI and SASB standards and audited by a third party. Declaração CDP_Aseguração PwC.pdf
C7. Emissions breakdown	Year on year change in emissions (Scope 3)	Independent auditor's limited assurance report on sustainability information in the CBA - 2021 Annual Report (GRI).	This information was assured, as it is included in the Annual Report, developed in the GRI and SASB standards and audited by a third party. Declaração CDP_Aseguração PwC.pdf
C12. Engagement	Product footprint verification	Independent auditor's limited assurance report on sustainability information in the CBA - 2021 Annual Report (GRI).	This information was assured, as it is included in the Annual Report, developed in the GRI and SASB standards and audited by a third party. Declaração CDP_Aseguração PwC.pdf
C4. Targets and performance	Progress against emissions reduction target	Independent auditor's limited assurance report on sustainability information in the CBA - 2021 Annual Report (GRI).	This information was assured, as it is included in the Annual Report, developed in the GRI and SASB standards and audited by a third party. Declaração CDP_Aseguração PwC.pdf

Declaração
CDP_Aseguração PwC.pdf
CBA_Annual_Report_2021.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

No, but we anticipate being regulated in the next three years

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

CBA had an internal carbon pricing study in 2021 in which we examined some current implemented pricing systems and defined an internal shadow price for carbon emissions. The analysis addressed scenarios that the PMR Brasil program pointed as the more likely to occur, following multiple public consultants and questionnaires that were acquired from interested parties (CBA was one of them and participated in three different questionnaires from the PMR Program). Our current internal carbon price is R\$22.85, and we are adopting this new concept to support our leadership decisions within our strategy in the competitiveness team, innovation and market development team and our technology team (seeking CAPEX opportunities). The internal carbon price is one of our initiatives to prepare CBA for a possible carbon regulation system that may be implemented by 2025.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Change internal behavior
Drive low-carbon investment
Identify and seize low-carbon opportunities
Other, please specify (To support our leadership decisions regard climate change opportunities)

GHG Scope

Scope 1

Application

Our current internal carbon price is R\$22.85, and we are adopting this new concept to support our leadership decisions within our strategy in competitiveness team, innovation and market development team and our technology team (seeking CAPEX opportunities). The internal carbon price is one of our initiatives to prepare CBA for a possible carbon regulation system that may be implemented by 2025.

Actual price(s) used (Currency /metric ton)

22.85

Variance of price(s) used

To achieve our final value different scenarios were used in which the carbon price could vary between R\$40.00 and R\$60.00. Considering all the principal references in the PRM Brasil Program, and including free allocation and use of offsets (that could vary between 10% and 20%) we could obtain an average price of R\$22.85. Note: The impact of possible border defense mechanisms were also evaluated to arrive at this final value, and were considered only for the volume of production imported from countries that already have an emissions regulation system.

Type of internal carbon price

Shadow price

Impact & implication

In 2021 we measured several financial impacts within our competitiveness area which lead to a R\$2,490,650 impact in a probable carbon regulation system. At the same time the same analysis was run with our innovation and market development area, resulting in a R\$4,457,852.02 impact (this value contains a financial impact due to carbon pricing both of CBA's operations and some of our client's operations for which we develop projects). Hence, in our first studies with the final value of our internal carbon pricing have shown interesting results.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers
Yes, our customers/clients
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Other, please specify (In 2021 CBA started the Sustainable Procurement Program that has the objective to guarantee that the company look in a more detailed way to sustainability indicators and management of our suppliers. We've defined standards and comparative ruler)

% of suppliers by number

25

% total procurement spend (direct and indirect)

44

% of supplier-related Scope 3 emissions as reported in C6.5

10

Rationale for the coverage of your engagement

Within CBA's Sustainable Procurement Program created in 2021, the Sustainable Procurement Policy was revised to include ESG criteria (including climate change management) and prioritizing suppliers labelled as critical occurred. Critical suppliers are those whose supplies can cause significant economic, environmental, social and reputational impacts; their raw materials or service provision are linked to the company's main business, without which the plant's productive performance could be harmed; suppliers that are difficult to replace (single sourcing); high unit-price suppliers; and suppliers whose nature of materials/services is related to the company's quality certifications by specific bodies/standards of quality management systems (IATF, ASI, etc.). From a sustainability point of view, suppliers of lesser financial relevance can also be considered critical, but will fit into fragile links in the supply chain, providing risks related to social, environmental and reputational impacts. The selection methodology was based on three criteria: if the supplier was critical for CBA, critical in relation to ESG issues and/or if it had an annual spend greater than R\$500,000.00, and 118 suppliers were characterized as 'critical suppliers'. For 2021, the company had the goal of carrying out the approval of 50% of its critical suppliers (59) and the 70% approval mark was reached (total of 83) and, therefore, we consider that the engagement strategy was a success. For 2022, other goals were developed, such as finalizing the approval of 100% of these suppliers and starting to engage all others. Among these critical suppliers, CBA evaluated which of the ESG criteria would be most impacted for each category and among, after that, 51 were evaluated in water related aspects and already went through this process. For scope 3 relation we considered the emissions that we calculate to only our critical suppliers.

Impact of engagement, including measures of success

CBA has increasingly matured its methodology for calculating scope 3 emissions, and for these indicators to increasingly reflect reality, it is necessary to relate and report primary data from our suppliers. With the objective of becoming a reference in sustainability, the company is concerned with bringing positive impacts to its entire value chain, and it became necessary to assess whether our suppliers agree with our sustainability positioning. With this, CBA first seeks to know the maturity level of each of our suppliers, so that in the future it is possible to base our supplier choices on their ESG performance, and also support the development of these practices within the partner companies.

In the Sustainable Procurement Program, suppliers must perform a self-assessment and submit evidence on their level of maturity in climate change management. The maturity ruler starts with the level of not managing your greenhouse gas emissions; the second level is applicable for suppliers that manage only scope 1 and 2 emissions; the third is for the supplier that fully manages its greenhouse gas emissions (scopes 1, 2 and 3) and the fourth level is for the supplier that not only manages all its emissions, but also has a strategic plan with targets aimed at improve performance on the theme. As already mentioned, the Sustainable Procurement Program started in 2021 and therefore it has not yet been possible to have a complete view of the impact of commitment and success by the company's new approach to its suppliers. Within this program, different action fronts were developed that include not only approval of these suppliers and a future retaining of suppliers that meet only the minimum criteria established within the Program, but also development of an action plan for the company to support suppliers in their development of such aspects. The initial expectation is to make an assessment of our supply chain's maturity before defining what will be the minimum standard required for each supplier before hiring them. For 2021, the company had the goal of carrying out the approval of 50% of its critical suppliers (59) and the 70% approval mark was reached (total of 83) and, therefore, we consider that the engagement strategy was a success .

Comment

We understand that we still need to increase the collection of emissions data with our suppliers and we intend to continue the SS project in the following years to mature our suppliers data collection. Under the Sustainable Procurement Program, by June/2022, CBA has already completed 100% of the approval of critical suppliers. In addition, 74% of the other suppliers (2,525 in total), equivalent to 1,880, had already started the approval process and 435 had already sent all the necessary documentation for analysis, raising their total and the representative monetary range.

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement & Details of engagement

Education/information sharing	Run an engagement campaign to education customers about your climate change performance and strategy
-------------------------------	--

% of customers by number

100

% of customer - related Scope 3 emissions as reported in C6.5

100

Please explain the rationale for selecting this group of customers and scope of engagement

We send to all our customers (100% of customers by number) our Annual Report (mainstream report) containing, information on our sustainability strategy, our engagement with climate change, product emissions and clean energy consumption. We share to datasheets of our products that have specifications of the product and some climate information. We are currently working in the development of our digital passport with ESG indicators (We already have a website with some of our ESG indicators).

Impact of engagement, including measures of success

CBA run an engagement campaign to education customers about our climate change performance and strategy, and we regularly have meetings and Workshops with clients bringing CBA's climate change strategy and positioning. We revised our products datasheets so it has more information about our emissions performance. We provide all our customers (100% of costumers by number) with our emission results from bauxite to processed aluminum and we demonstrate how our products have low emissions compared to the market. In 2020, we respond to climate questionnaires sent by customers (This information are public communicated at the Emissions Public Registry). We also share information about your products and relevant certification schemes. In CBA there are the Innovation and Market development team that works directly with our clients to work together in new projects and solution.

Type of engagement & Details of engagement

Collaboration & innovation	Other, please specify (Customers we were involved in to develop products and solutions in partnership with the Market Development and Innovation area)
----------------------------	--

% of customers by number

18

% of customer - related Scope 3 emissions as reported in C6.5

9

Please explain the rationale for selecting this group of customers and scope of engagement

We send to all our customers (100% of customers by number) our Annual Report (mainstream report) containing, information on our sustainability strategy, our engagement with climate change, product emissions and clean energy consumption. We share to datasheets of our products that have specifications of the product and some climate information. We are currently working in the development of our digital passport with ESG indicators (We already have a website with some of our ESG indicators).

Impact of engagement, including measures of success

CBA run an engagement campaign to education customers about our climate change performance and strategy, and we regularly have meetings and Workshops with clients bringing CBA's climate change strategy and positioning. We revised our products datasheets so it has more information about our emissions performance. We provide all our customers (100% of costumers by number) with our emission results from bauxite to processed aluminum and we demonstrate how our products have low emissions compared to the market. In 2020, we respond to climate questionnaires sent by customers (This information are public communicated at the Emissions Public Registry). We also share information about your products and relevant certification schemes. In CBA there are the Innovation and Market development team that works directly with our clients to work together in new projects and solution.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

CBA is also a signatory of the Global Compact (a business movement led by the United Nations that has established ten principles on human rights, labor, environment and anticorruption) and the 2030 Agenda, and supports the 17 Sustainable Development Goals (SDGs). We also support the Task Force on Climate-related Financial Disclosures (TCFD), which develops and issues recommendations on climate-related financial disclosures, and have approved targets to reduce greenhouse gas emissions reduction targets to the Science-Based Targets initiative (SBTi). In addition, CBA is a member of the São Paulo Environmental Agreement, the Brazilian Environmental Chamber for Climate Change, and the Brazilian Business Council for Sustainable Development (CEBDS). In addition, CBA has signed its commitment to 1.5° with the Global Compact initiative and is part of the "Run to Zero" commitment.

At the same time we have multiple projects that treat the climate change topic with Reservas Votorantim (Reflora and REDD+), and we have partnerships with universities (Example: UFV – Viçosa Federal University) and we are starting to work with our suppliers in the Sustainable Supplier Project.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?

No, but we plan to introduce climate-related requirements within the next two years

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?

Yes

Attach commitment or position statement(s)

Page 37 of the Annual Report

CBA_Additional_Disclosures_2021.pdf

CBA_Annual_Report_2021.pdf

Describe the process(es) your organization has in place to ensure that your engagement activities are consistent with your overall climate change strategy

CBA is also a signatory of the Global Compact (a business movement led by the United Nations that has established ten principles on human rights, labor, environment and anticorruption) and the 2030 Agenda, and supports the 17 Sustainable Development Goals (SDGs). We also support the Task Force on Climate-related Financial Disclosures (TCFD), which develops and issues recommendations on climate-related financial disclosures, and have approved targets to reduce greenhouse gas emissions reduction targets to the Science Based Targets initiative (SBTi). In addition, CBA is a member of the São Paulo Environmental Agreement, the Brazilian Environmental Chamber for Climate Change, and the Brazilian Business Council for Sustainable Development (CEBDS). In addition CBA has signed its compromise with the engagement to 1.5°C with Global Compact initiative and are part of the "Run to Zero" compromise. We participate in business groups where we discuss good practices related to climate change. Examples: ABAL- Brazilian Aluminum Association, IAI - International Aluminum Institute, Climate Change Committee of the State of São Paulo, FGV Business Initiatives and Emissions Trading Simulation, Global Compact and ASI- Aluminum Stewardship Initiative. We are also discussing carbon capture issues with other partner companies. In addition, we released our Annual Report (GRI standards) with various climatic information to all our stakeholders in the value chain. These engagements are important to increase the CBA's knowledge related to climate change; ensure that the company carries out the best market practices in this area and ensure transparency and positive exposure of the company. We participated into PMR Brasil conferences and consultant public events. In the middle of 2021 we participated into the road test of SBTi to its new tool to trace net-zero path.

Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

Explain why your organization does not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

C12.3a

(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?

Focus of policy, law, or regulation that may impact the climate

Carbon tax

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Study to analyze possibilities of Carbon pricing implementation through a marketing system. We participated in completing PMR Brazil questionnaires for public consultation and with ABAL we participate in analyses of how border defense mechanisms with CBAM can impact the national aluminum market.

Policy, law, or regulation geographic coverage

National

Country/region the policy, law, or regulation applies to

Brazil

Your organization's position on the policy, law, or regulation

Support with minor exceptions

Description of engagement with policy makers

In PMR we share our perceptions on the main project assumptions and contribute suggestions for improvements in the matter to other participants in the public consultation questionnaires. With ABAL, we had a greater involvement as we were one of the aluminum companies in Brazil that was pressing the topic. We supported recommendation of hiring for the study, participated in interviews, completed questionnaires, participated in meetings to deliver the results of studies, in which participated representatives of other aluminum companies in the country.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

In control mechanisms, there could be more flexibility with the floor price being lower at the beginning. At the point of regulation, there could be the flexibility of not being by manufacturers, but by a regulated stage of the industrial process, as those with integrated plants (single address and CNPJ) can be harmed compared to those that have the same processes but in separate plants (more than one CNPJ), harming competitiveness.

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports

Status

Complete

Attach the document

*

CBA_Additional_Disclosures_2021.pdf
CBAAnnualReport2021min.pdf
CBA_Annual_Report_2021-min.pdf
CBA_Annual_Report_2021.pdf

Page/Section reference

Pages 53, 80 and 86 – Annual report - https://relatorioanual2021.cba.com.br/wp-content/uploads/CBA_Annual_Report_2021.pdf (the file is too big to attach in the previous topic)

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Our main vehicle for disclosing the company's performance is the annual sustainability report. There you will find all the achievements of the year, activities by our management on several fronts and details of our ESG 2030 strategy.
Results of emissions on a voluntary basis in Public Emissions under the Brazilian GHG Protocol Program. We annually report greenhouse gas emissions by the Aluminum plant to the environmental agency of the State of São Paulo, in accordance with legislation.

Publication

In mainstream reports, incorporating the TCFD recommendations

Status

Complete

Attach the document

CBA_Additional_Disclosures_2021.pdf

Page/Section reference

Page 33

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Our main vehicle for disclosing the company's performance is the annual sustainability report. There you will find all the achievements of the year, activities by our management on several fronts and details of our ESG 2030 strategy.
Results of emissions on a voluntary basis in Public Emissions under the Brazilian GHG Protocol Program. We annually report greenhouse gas emissions from the Aluminum plant to the environmental agency of the State of São Paulo, in accordance with legislation.

Publication

In other regulatory filings

Status

Complete

Attach the document

*

CBA_Annual_Report_2021.pdf

Page/Section reference

You can see all reports here - <https://relatorioanual2021.cba.com.br/en/download-reports/>

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Our main vehicle for disclosing the company's performance is the annual sustainability report. There you will find all the achievements of the year, activities by our management on several fronts and details of our ESG 2030 strategy.
Results of emissions on a voluntary basis in Public Emissions under the Brazilian GHG Protocol Program. We annually report greenhouse gas emissions from the Aluminum plant to the environmental agency of the State of São Paulo, in accordance with legislation.

Publication

In voluntary communications

Status

Complete

Attach the document

*

CBA_Annual_Report_2021.pdf

Page/Section referencePublic Emissions Registry - GHG Protocol Brazil Program - <https://www.registropublicodeemissoes.com.br/participantes/2614>**Content elements**

Governance
 Strategy
 Risks & opportunities
 Emissions figures
 Emission targets
 Other metrics

Comment

Our main vehicle for disclosing the company's performance is the annual sustainability report. There you will find all the achievements of the year, activities by our management on several fronts and details of our ESG 2030 strategy.

Results of emissions on a voluntary basis in Public Emissions under the Brazilian GHG Protocol Program. We annually report greenhouse gas emissions from the Aluminum plant to the environmental agency of the State of São Paulo, in accordance with legislation.

Publication

In voluntary sustainability report

Status

Complete

Attach the document

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CBA_Annual_Report_2021.pdf

Page/Section reference

https://relatorioanual2021.cba.com.br/wp-content/uploads/CBA_Annual_Report_2021.pdf

Content elements

Governance
 Strategy
 Risks & opportunities
 Emissions figures
 Emission targets
 Other metrics

Comment

Our main vehicle for disclosing the company's performance is the annual sustainability report. There you will find all the achievements of the year, activities by our management on several fronts and details of our ESG 2030 strategy.

Results of emissions on a voluntary basis in Public Emissions under the Brazilian GHG Protocol Program. We annually report greenhouse gas emissions from the Aluminum plant to the environmental agency of the State of São Paulo, in accordance with legislation.

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity	Scope of board-level oversight
Row 1	Yes, both board-level oversight and executive management-level responsibility	CBA has a sustainability committee (responsible for advising our management committee) and an executive sustainability committee (responsible for approving at our highest sustainability level, with members of the lead team), both of which have independent members and hold regular meetings to discuss topics that are or will be worked on in the company. Biodiversity is one of the company's development programs within our ESG 2030 strategy and has two specific objectives for development until 2030. As it is a material topic for the company, it is the subject of meetings by both committees.	<Not Applicable>

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	Yes, we have made public commitments and publicly endorsed initiatives related to biodiversity	Commitment to respect legally designated protected areas Commitment to avoidance of negative impacts on threatened and protected species Other, please specify (Objetivos de nossa estratégia ESG 2030)	SDG

C15.3

(C15.3) Does your organization assess the impact of its value chain on biodiversity?

	Does your organization assess the impact of its value chain on biodiversity?	Portfolio
Row 1	Yes, we assess impacts on biodiversity in both our upstream and downstream value chain	<Not Applicable>

C15.4**(C15.4) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?**

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water protection Land/water management Species management Education & awareness Other, please specify (Projects development alongside with our clients)

C15.5**(C15.5) Does your organization use biodiversity indicators to monitor performance across its activities?**

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	Yes, we use indicators	State and benefit indicators Response indicators

C15.6**(C15.6) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).**

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In voluntary sustainability report or other voluntary communications	Content of biodiversity-related policies or commitments Governance Impacts on biodiversity Details on biodiversity indicators Risks and opportunities Biodiversity strategy	Pages 17, 33, 99, 100 to 105, 118, 127 and 135. CBAAnnualReport2021min.pdf CBA_Annual_Report_2021.pdf

C16. Signoff**C-FI****(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.**

Delivering aluminum solutions that change people's lives. This is CBA's purpose. Through our products, we are present in the lives of millions of people—making their lives easier, shortening distances and improving well-being. CBA is the only fully vertically integrated aluminum company in Brazil. Founded in 1941, CBA became a publicly traded corporation in 2021 and the first aluminum company in Brazil listed in the B3 stock exchange, on the Novo Mercado listing segment. We are proud to be a fully Brazilian-owned business and a member of the Votorantim S.A. investment portfolio. Throughout our journey as a Company, we have worked to build a better and more sustainable world, and to be responsive to the needs of our enterprise, our society and our planet. Inspired by our purpose, we have put sustainability and innovation at the core of our strategy. Our operations begin at the mines where we produce bauxite, an ore that is then processed into alumina, molten aluminum and finally primary and downstream aluminum products. CBA also works with customers and business partners to supply customized products and cutting-edge solutions, such as higher value-added sheet and extruded profiles, as well as additional processing operations (cutting, bending, welding, machining and assembly). Our downstream products are supplied primarily to customers in the Americas, largely in Brazil and other countries in South and North America. CBA is also a leading player in industrial-scale aluminum recycling in Brazil. Through our Metalex operation we recycle scrap produced by our own production process and by our customers and partners. This improves both sustainability and profitability, as aluminum recycling uses only 5% of the electricity required to produce primary aluminum, according to International Aluminium Institute (IAI). In 2021 we approved a project to install an additional recycling line at Metalex.

Principles and Values: Votorantim Principles and Values permeate all Votorantim subsidiaries and represent our way of being, of doing, and going beyond. These are also the values of Companhia Brasileira de Alumínio ("CBA"). Our Purpose reflects our history, our identity and our vision of the future: "Aluminum solutions that change people's lives".

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chief Executive Officer (CEO)	Chief Executive Officer (CEO)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

Companhia Brasileira de Alumínio (CBA) is a vertically integrated, sustainable producer of high-quality aluminum products. With hydroelectric generation capacity for 100% of our energy requirements, CBA's operations span both bauxite mining and processing into primary aluminum (ingots, plate, sheets, billets and rod*) and semi-fabricated products (caster rolls, sheet, foil, extruded profiles and parts and components). Working closely with customers, CBA also develops tailored solutions and services, primarily for the packaging, automotive and transportation markets, helping customers to produce more lightweight, durable and sustainable products.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	8400000000

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

Requesting member

Ambev S.A

Scope of emissions

Scope 1

Allocation level

Facility

Allocation level detail

Primary data verified by a third party were used. The reported value reflects the emission of greenhouse gases per ton of ton of ingot supplied. Ambev is not a direct customer of CBA, so it was not possible to track the volume of CBA product that the company used in 2021.

Emissions in metric tonnes of CO2e

2.91

Uncertainty (±%)

0

Major sources of emissions

Scope 1 emissions (mobile combustion, stationary combustion, industrial emissions and fugitive emissions)

Verified

Yes

Allocation method

Allocation not necessary due to type of primary data available

Market value or quantity of goods/services supplied to the requesting member

0

Unit for market value or quantity of goods/services supplied

Metric tons

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

CBA currently has a methodology for calculating emissions for its main production lines. This calculation reflects an average carbon footprint result following the Tier 2 methodology recommended by the IAI (International Aluminum Institute). This methodology was evaluated and ensured by a third party by the DNV company and considers all sources of scope 1 and 2 emissions of the CBA production process from mining activities to the manufacture of the final product (Considers emissions from the stages: Mining, refinery, electrolysis, casthouse, downstream production and support areas). This methodology does not consider scope 3 entries.

Requesting member

Ambev S.A

Scope of emissions

Scope 2

Allocation level

Facility

Allocation level detail

Primary data verified by a third party were used. The reported value reflects the emission of greenhouse gases per ton of ton of ingot supplied. Ambev is not a direct customer of CBA, so it was not possible to track the volume of CBA product that the company used in 2021.

Emissions in metric tonnes of CO₂e

0.02

Uncertainty (±%)

0

Major sources of emissions

Scope 2 emissions (Only the purchase of steam for the biomass boiler was considered, since in 2021 CBA managed to guarantee 100% traceable renewable electricity)

Verified

Yes

Allocation method

Allocation not necessary due to type of primary data available

Market value or quantity of goods/services supplied to the requesting member

0

Unit for market value or quantity of goods/services supplied

Metric tons

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

CBA currently has a methodology for calculating emissions for its main production lines. This calculation reflects an average carbon footprint result following the Tier 2 methodology recommended by the IAI (International Aluminum Institute). This methodology was evaluated and ensured by a third party by the DNV company and considers all sources of scope 1 and 2 emissions of the CBA production process from mining activities to the manufacture of the final product (Considers emissions from the stages: Mining, refinery, electrolysis, casthouse, downstream production and support areas). This methodology does not consider scope 3 entries

Requesting member

Iochpe-Maxion SA

Scope of emissions

Scope 1

Allocation level

Facility

Allocation level detail

Primary data verified by a third party were used. The reported value reflects the emission of greenhouse gases per ton of ton of aluminium plate supplied.

Emissions in metric tonnes of CO₂e

2.91

Uncertainty (±%)

0

Major sources of emissions

Scope 1 emissions (mobile combustion, stationary combustion, industrial emissions and fugitive emissions)

Verified

Yes

Allocation method

Allocation not necessary due to type of primary data available

Market value or quantity of goods/services supplied to the requesting member

10200

Unit for market value or quantity of goods/services supplied

Metric tons

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

CBA currently has a methodology for calculating emissions for its main production lines. This calculation reflects an average carbon footprint result following the Tier 2 methodology recommended by the IAI (International Aluminum Institute). This methodology was evaluated and ensured by a third party by the DNV company and considers all sources of scope 1 and 2 emissions of the CBA production process from mining activities to the manufacture of the final product (Considers emissions from the stages: Mining, refinery, electrolysis, casthouse, downstream production and support areas). This methodology does not consider scope 3 entries

Requesting member

Iochpe-Maxion SA

Scope of emissions

Scope 2

Allocation level

Facility

Allocation level detail

Primary data verified by a third party were used. The reported value reflects the emission of greenhouse gases per ton of ton of aluminium plate supplied.

Emissions in metric tonnes of CO₂e

0.02

Uncertainty (±%)

0

Major sources of emissions

Scope 2 emissions (Only the purchase of steam for the biomass boiler was considered, since in 2021 CBA managed to guarantee 100% traceable renewable electricity)

Verified

Yes

Allocation method

Allocation not necessary due to type of primary data available

Market value or quantity of goods/services supplied to the requesting member

10200

Unit for market value or quantity of goods/services supplied

Metric tons

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

CBA currently has a methodology for calculating emissions for its main production lines. This calculation reflects an average carbon footprint result following the Tier 2 methodology recommended by the IAI (International Aluminum Institute). This methodology was evaluated and ensured by a third party by the DNV company and considers all sources of scope 1 and 2 emissions of the CBA production process from mining activities to the manufacture of the final product (Considers emissions from the stages: Mining, refinery, electrolysis, casthouse, downstream production and support areas). This methodology does not consider scope 3 entries

Requesting member

Robert Bosch GmbH

Scope of emissions

Scope 1

Allocation level

Facility

Allocation level detail

Primary data verified by a third party were used. The reported value reflects the emission of greenhouse gases per ton of ton of aluminium extrusions supplied.

Emissions in metric tonnes of CO₂e

3.025

Uncertainty (±%)

0

Major sources of emissions

Scope 1 emissions (mobile combustion, stationary combustion, industrial emissions and fugitive emissions)

Verified

Yes

Allocation method

Allocation not necessary due to type of primary data available

Market value or quantity of goods/services supplied to the requesting member

592.576

Unit for market value or quantity of goods/services supplied

Metric tons

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

CBA currently has a methodology for calculating emissions for its main production lines. This calculation reflects an average carbon footprint result following the Tier 2 methodology recommended by the IAI (International Aluminum Institute). This methodology was evaluated and ensured by a third party by the DNV company and considers all sources of scope 1 and 2 emissions of the CBA production process from mining activities to the manufacture of the final product (Considers emissions from the stages: Mining, refinery, electrolysis, casthouse, downstream production and support areas). This methodology does not consider scope 3 entries.

Requesting member

Robert Bosch GmbH

Scope of emissions

Scope 2

Allocation level

Facility

Allocation level detail

Primary data verified by a third party were used. The reported value reflects the emission of greenhouse gases per ton of ton of aluminium extrusions supplied.

Emissions in metric tonnes of CO₂e

0.019

Uncertainty (±%)

0

Major sources of emissions

Scope 2 emissions (Only the purchase of steam for the biomass boiler was considered, since in 2021 CBA managed to guarantee 100% traceable renewable electricity)

Verified

Yes

Allocation method

Allocation not necessary due to type of primary data available

Market value or quantity of goods/services supplied to the requesting member

592.576

Unit for market value or quantity of goods/services supplied

Metric tons

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

CBA currently has a methodology for calculating emissions for its main production lines. This calculation reflects an average carbon footprint result following the Tier 2 methodology recommended by the IAI (International Aluminum Institute). This methodology was evaluated and ensured by a third party by the DNV company and considers all sources of scope 1 and 2 emissions of the CBA production process from mining activities to the manufacture of the final product (Considers emissions from the stages: Mining, refinery, electrolysis, casthouse, downstream production and support areas). This methodology does not consider scope 3 entries

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

We used our GHG emissions reported inside our annual report as a base to the specific calculation - https://relatorioanual2021.cba.com.br/wp-content/uploads/CBA_Annual_Report_2021.pdf

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
We face no challenges	At CBA we have emission calculations for all major products. Calculations for the previous year are generally finalized in March of each year, as they require updating the national emission factors of the GHG Brazil Program. We have no difficulty in passing these results on to our customers according to the volumes of products purchased. We always recommend greater proximity between the client and the CBA commercial and/or sustainability teams to gain access to more specific indicators

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

The CBA intends to disclose the emissions of its products in more detail in its Annual Reports and other forms of communication to its customers. Currently, we disclose average emissions from all of our finished products and only send specific emissions for our products when requested by customers. CBA carried out a third-party validation of the methodology for calculating emission indicators by specific product, and is constantly evaluating new ways to share its results with CBA clients. In order to be able to deepen the analysis of the impact of its products, in 2021 the SimaPro software was hired to carry out life cycle assessments (LCA) which will allow the company to evaluate how its products can impact the process of its customers.

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.**Requesting member**

Ambev S.A

Group type of project

Relationship sustainability assessment

Type of project

Assessing products or services life cycle footprint to identify efficiencies

Emissions targeted

Other, please specify (The initiative to map impacts on Ambev's chain does not directly reduce emissions, but it can assist in structuring a reduction plan, while the development of new products can reduce emissions in Ambev's production process)

Estimated timeframe for carbon reductions to be realized

Other, please specify (It is not possible to provide a timetable as Ambev is not a direct customer of CBA, for this it would be necessary to bring both companies closer to better understand Ambev's process, and the role of CBA in its production process.)

Estimated lifetime CO2e savings

0

Estimated payback

Other, please specify (It is not possible to calculate the financial return since Ambev is not a direct customer of CBA, for this it would be necessary to bring both companies closer to better understand the opportunities for improvement within Ambev's process)

Details of proposal

Today, CBA is not a direct supplier to Ambev, so information about the impact of CBA products within the company's production process is very limited. With this, there are the following opportunities for joint development:

- 1) Carry out a mapping to understand how the CBA product impacts Ambev's process (This way it will be possible to provide specific emissions indicators on CBA products);
- 2) Carry out an LCA study (Life Cycle Analysis) of the Ambev product that uses CBA products (CBA currently has the SimaPro software to carry out these assessments and is supported by the Ecoinvent database);
- 3) Jointly develop new products together with CBA's Market Development and Innovation team. The company has a team dedicated to the development of new products and solutions for CBA customers and has a history of 103 projects developed in 2021, together with 54 companies.
- 4) Currently, CBA has the innovative ReAl project that is capable of recycling multilayer packaging (long life packaging), which offers the opportunity to partner with companies that use this type of packaging (Evaluating Ambev's product portfolio, it was analyzed that at least one of the products has synergy with this new technology developed by CBA) - Follow the link to access more information about the ReAl project (<https://tecnologiareal.com.br/>).

Requesting member

Robert Bosch GmbH

Group type of project

Relationship sustainability assessment

Type of project

Assessing products or services life cycle footprint to identify efficiencies

Emissions targeted

Other, please specify (Initiatives that would have the potential to reduce Scope 1, 2 and/or 3 emissions from CBA and our client)

Estimated timeframe for carbon reductions to be realized

1-3 years

Estimated lifetime CO2e savings

0

Estimated payback

Other, please specify (Not possible to calculate without first approaching the companies)

Details of proposal

Today, CBA is able to map the following opportunities to work together with our customers:

- 1) Carry out a mapping to understand how the CBA product impacts Bosch's process (This way it will be possible to provide specific emissions indicators on CBA products);
- 2) Carry out an LCA study (Life Cycle Analysis) of the Bosch product that uses CBA products (CBA currently has the SimaPro software to carry out these assessments and is supported by the Ecoinvent database);
- 3) Jointly develop new products together with CBA's Market Development and Innovation team. The company has a team dedicated to the development of new products and solutions for CBA customers, and has a history of 103 projects developed in 2021, together with 54 companies.

Note: The estimated timeline to materialize carbon reductions reported represents a time estimate once the potential has already been mapped and the scope of activities has already been approved by both parties.

Requesting member

lochpe-Maxion SA

Group type of project

New product or service

Type of project

Other, please specify (Initiatives that would have the potential to reduce Scope 1, 2 and/or 3 emissions from CBA, our clients, and the performance of our customer's product over its lifetime)

Emissions targeted

Other, please specify (Initiatives that would have the potential to reduce Scope 1, 2 and/or 3 emissions from CBA and our client)

Estimated timeframe for carbon reductions to be realized

1-3 years

Estimated lifetime CO2e savings

0

Estimated payback

Other, please specify (Not possible to calculate without first approaching the companies)

Details of proposal

Today, CBA is able to map the following opportunities to work together with our customers:

- 1) Carry out a mapping to understand how the CBA product impacts Maxion's process (This way it will be possible to provide specific emissions indicators on CBA products);
- 2) Carry out an LCA study (Life Cycle Analysis) of the Maxion product that uses CBA products (CBA currently has the SimaPro software to carry out these assessments and is supported by the Ecoinvent database);
- 3) Jointly develop new products together with CBA's Market Development and Innovation team. The company has a team dedicated to the development of new products and solutions for CBA customers, and has a history of 103 projects developed in 2021, together with 54 companies. Currently, CBA already has a new product development project with Maxion Strutal Componentes, which is considered one of the success stories of the company's market development and innovation team.

Note: The estimated timeline to materialize carbon reductions reported represents a time estimate once the potential has already been mapped and the scope of activities has already been approved by both parties.

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?
No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?
Yes, I will provide data

SC4.1a

(SC4.1a) Give the overall percentage of total emissions, for all Scopes, that are covered by these products.
35

SC4.2a

(SC4.2a) Complete the following table for the goods/services for which you want to provide data.

Name of good/ service

Aluminium ingots

Description of good/ service

Tons of aluminium alloyed ingots and aluminium primary ingots.

Type of product

Intermediate

SKU (Stock Keeping Unit)

Alloys A356, A413 and P1010

Total emissions in kg CO2e per unit

2.93

±% change from previous figure supplied

0

Date of previous figure supplied

July 1 2022

Explanation of change

The reported value is the average carbon footprint (considering only the aluminum chain) of the aluminum ingot produced by CBA, so there is no variation

Methods used to estimate lifecycle emissions

Other, please specify (IAI methodology (Tier 2 emissions))

SC4.2b

(SC4.2b) Complete the following table with data for lifecycle stages of your goods and/or services.

Name of good/ service

Aluminium ingots

Please select the scope

Scope 1 & 2

Please select the lifecycle stage

Cradle to gate

Emissions at the lifecycle stage in kg CO2e per unit

2.93

Is this stage under your ownership or control?

Yes

Type of data used

Primary

Data quality

Primary data collection in the mining, refinery, smelter and casting production areas. This includes all scope 1 and 2 emissions by these processes according to the criteria from GHG Protocol Brazil. As CBA is a vertically integrated company, all of these processes are in scopes 1 and 2. Normally, aluminum manufacturers purchase intermediate materials (bauxite and aluminum oxide) from suppliers, in which case these emissions are of scope 3. Our carbon footprint calculation covers all Level 2 criteria by the World Aluminum guidance.

If you are verifying/assuring this product emission data, please tell us how

Emissions from all CBA production stages are verified by a third party according to GHG Protocol Brazil. Disclosure of supporting documentation will probably take place in October in the official website of the Public Emissions Registry of GHG Brazil. Available at: <<https://www.registropublicodeemissoes.com.br/participantes/2614>>.

SC4.2c

(SC4.2c) Please detail emissions reduction initiatives completed or planned for this product.

Name of good/ service	Initiative ID	Description of initiative	Completed or planned	Emission reductions in kg CO2e per unit
Tons of aluminium oxide	Initiative 1	At the CBA aluminum oxide refinery there is an opportunity to significantly reduce emissions by replacing oil and natural gas boilers by another boiler using wood chip biomass from forests planted for this purpose.	Completed	0.34
Tons of liquid aluminium	Initiative 2	The Green Söderberg project will automate the furnace feed process to reduce emissions from the process while also improving efficiency and safety. Currently 36 pots have the technology installed to test and optimize results. All pots are expected to be converted by 2026. Once the project is properly installed and stabilized, it will be able to reduce process emissions by 20%.	Ongoing	0.54

SC4.2d

(SC4.2d) Have any of the initiatives described in SC4.2c been driven by requesting CDP Supply Chain members?

No

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

Please confirm below

I have read and accept the applicable Terms