



# 2023 SUSTAINABILITY REPORT

Executive Summary



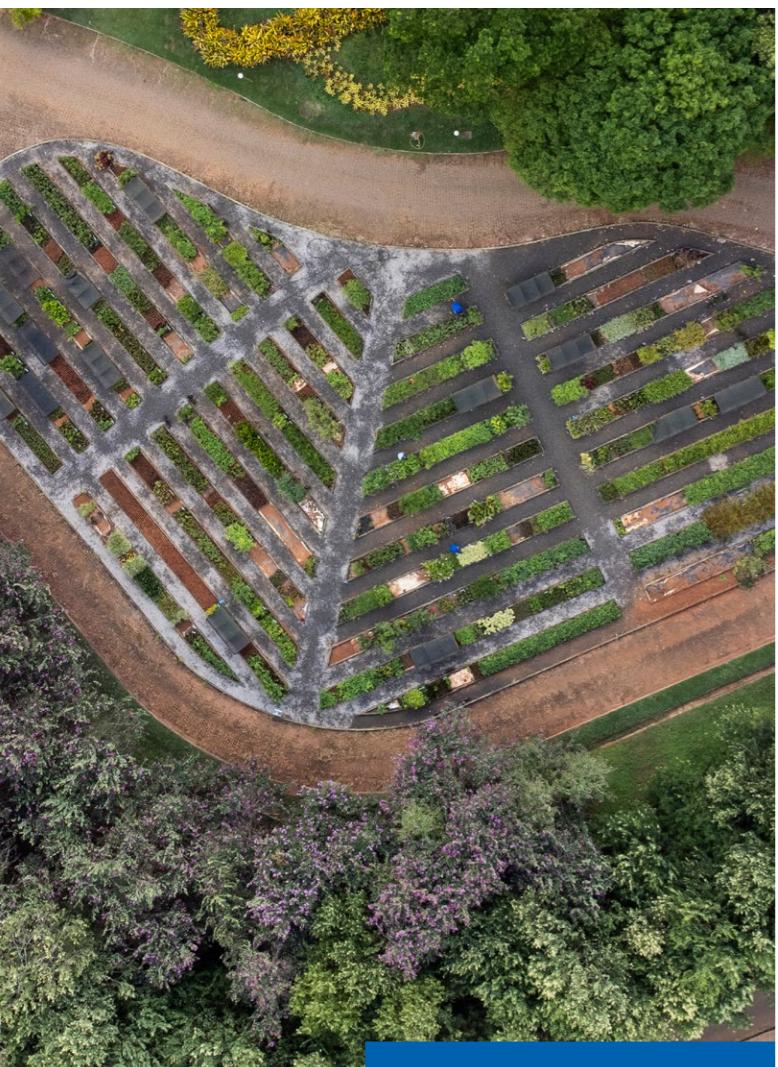
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# About this report

This publication is a summary version of our 2023 Sustainability Report, in which we present to all stakeholders economic, environmental, social and governance information, as well as initiatives, projects, performance and results achieved in Brazil, at the regional offices in Houston (United States), Amsterdam (Netherlands), Geneva (Switzerland) and Singapore (Singapore) and at representative offices in Beijing and Shanghai (China).

Prepared in accordance with the Global Reporting Initiative (GRI) Standards, the document also includes SASB indicators, from the Value Reporting Foundation (VRF). It refers to our performance from January 1st to December 31st, 2023 and was assured externally by PwC.



The full document was based on a materiality process conducted in the previous year, which included five stages: definition, identification, prioritization, analysis and validation. The work resulted in the selection of eight material topics, treated in greater depth:

- Innovation and technology
- Health, well-being and safety of employees
- Waste and dam management
- Ethics, integrity and compliance
- Attracting, developing and retaining employees
- Water and effluents management
- Climate change
- Local development

To send suggestions or comments regarding this document, please contact us by email us at [cbmm@cbmm.com](mailto:cbmm@cbmm.com).

**Good reading!**

# Message from the Leadership

In 2023, our revenue grew 9% compared to 2022. We recovered what had been lost during the pandemic period and also resumed a phase of growth.

We focus on our strategic objective of expansion, seeking other forms of insertion for Niobium. On the battery front, we invested R\$ 256 million in the construction of a plant, with a production capacity of 3,000 tons/year of mixed Niobium oxides for batteries. Another development was in the segment of nanocrystalline magnetic materials, used in electric motors and magnetic applications. On the New Business front, we kept investments in companies with promising technologies to accelerate the adoption of Niobium by the battery market, such as Battery Streak, Echion Technologies and Skeleton Technologies.

We are aligned with the major global trends of electrification, urbanization and sustainability. Using Niobium technology, we contribute to the decarbonization agenda and we commit to being carbon neutral, in scopes 1 and 2, by 2040.

From a social standpoint, we invested R\$ 39 million in actions aimed mainly at children and adolescents in the municipality of Araxá (MG). We also developed our Social Responsibility Policy, to improve the targeting of social investments and continue to contribute to the sustainability of Araxá.

We adopt robust governance, with a structure similar to that of publicly traded companies. In 2023, we achieved the ISO 37001 certification for our anti-bribery management system, which demonstrates the maturity of our controls and Compliance Program.

We are leaders in Niobium technology and are always looking for new applications for the metal, with a close eye on the demands of our customers. This acting style sustains our growth and ensures our perpetuity. Therefore, our outlook for 2024 is optimistic, because we have a team of employees with technical competence and a profile that adheres to our expansion strategy.



From left to right: Alex Amorim – Finance and Planning Officer, Rafael Mesquita – Technology Officer, Renata Ferrari – Legal, ESG and Institutional Relations Officer, Ricardo Lima – CEO, Marcelo Scuccuglia – Commercial Officer, Rogério Contato – Industrial Operations Officer.

# ABOUT US



We are the Companhia Brasileira de Metalurgia e Mineração (CBMM), the world leader in the production and commercialization of Niobium products, with permanent investments in innovation, driven by research and development of new applications for Niobium. As a result of our technology program, we have achieved global leadership in industrialized Niobium products, and we are the only player in the sector present in all segments of this market.

Our industrial plant is in the city of Araxá (MG), where our headquarters are. We have three large industrial units, integrating mineral, metallurgical and chemical activities. On site, we operate a Technology Center that has laboratories accredited by Inmetro. We also maintain a Metallurgical Materials and Processes Research Center and a center dedicated to batteries, responsible for research and development of Niobium product technology; and Integrated Monitoring Center (CMI), which guarantees the integrity of waste disposal structures.

The advancement of our operation is linked to sustainability, since Niobium makes products with lower CO<sub>2</sub> emissions. Furthermore, we work to generate the lowest possible environmental footprint. The Environmental Development Center has been in operation since the 1980s, working to preserve the fauna and flora of the Cerrado biome and developing environmental education actions.

## Global operation

We have regional offices in the United States, Switzerland, the Netherlands and in Singapore, as well as representative offices in Beijing and in Shanghai, in China. With 18 international warehouses, we serve around 500 customers, in over 50 countries.

### SOUTH AMERICA

#### HEADQUARTERS

Minas Gerais Industrial Plant – Araxá

#### CORPORATE OFFICE

CBMM Sales and Technology Applications  
São Paulo

### EUROPE

#### REGIONAL OFFICE

CBMM Europe  
Netherlands

CBMM Technology Suisse  
Switzerland

### ASIA

#### DISTRIBUTOR

Sojitz – Japan

#### REPRESENTATIVE OFFICES

China – Shanghai  
China – Beijing

#### DISTRIBUTOR

CITIC Metal  
China

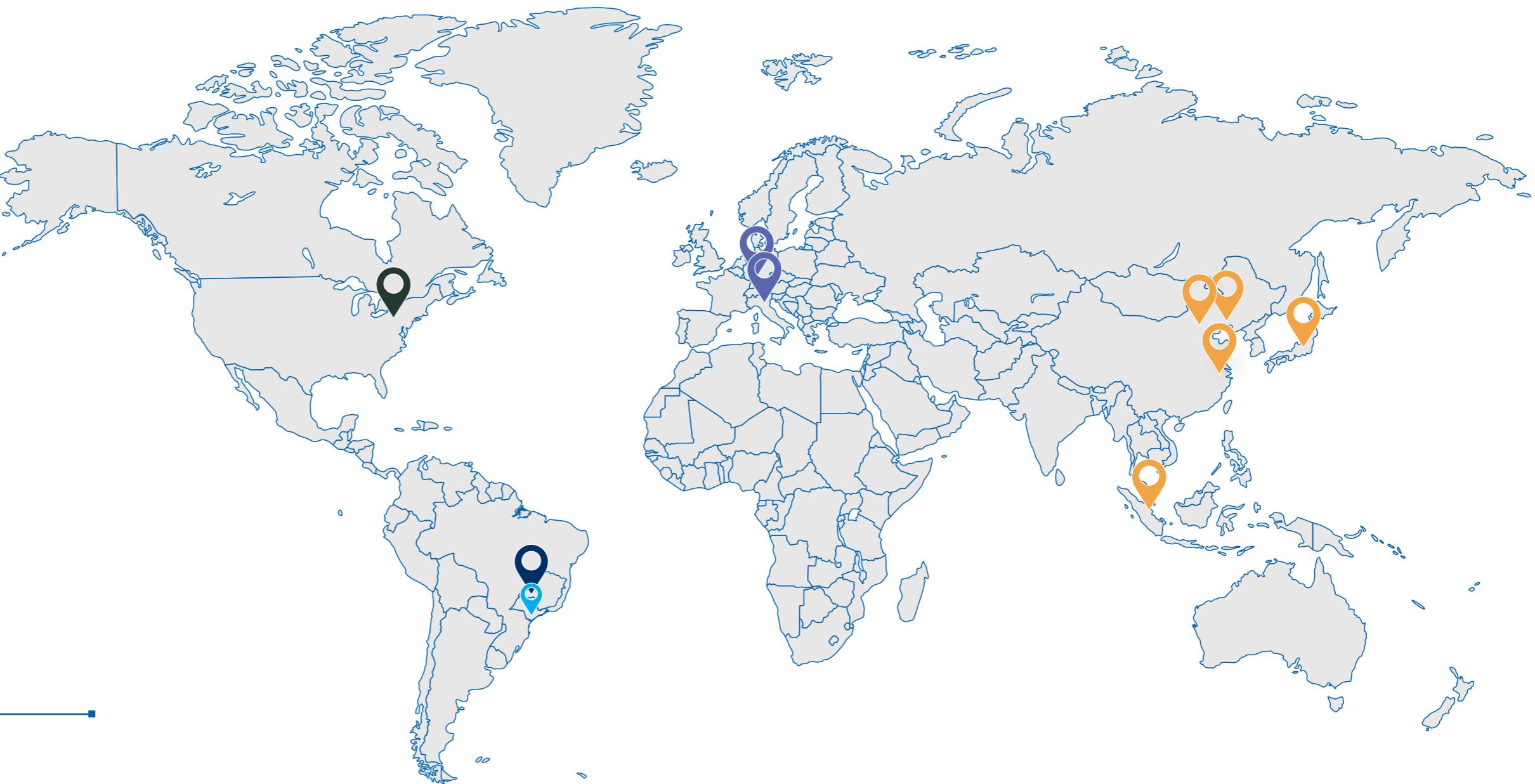
#### REGIONAL OFFICE

CBMM Asia  
Singapore

### NORTH AMERICA

#### REGIONAL OFFICE

CBMM North America  
USA



### Niobium in the world

In addition to Brazil, there are more than 90 deposits that can be used as a basis for Niobium production in the world. Many of them remain unexplored, given the still low commercial demand for the metal. In Brazil, we operate reserves located in Araxá (MG), with other reserves in Catalão (GO), under exploration, and in the Amazon.

# Highlights of the year



**Growth in total sales volume of 4.6%, compared to 2022**



**Investment of R\$ 578 million in capex**

**Growth of 53% in sales of battery products compared to 2022**

**R\$ 230 million dedicated** to research and development of products and applications for Niobium

**Restructuring of the growth plan** for the next ten years

**Start of work to implement** waste disposal systems (**Project EDR-9**)

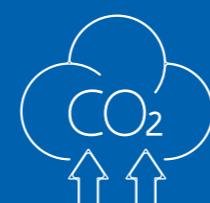


**Investment of R\$ 80 million** in the Battery Research and Development Program



**Achievement of ISO 37001** certification for the anti-bribery management system

**Achievement of the GHG Protocol Gold Seal in Brazil**



**Reduction of emissions in the industrial park**, accompanied by public commitment to the goal of **zero carbon emissions by 2040** (scopes 1 and 2) with structuring actions



**R\$ 39 million** directed to **social actions in Araxá**, benefiting more than **370,000 people**

**More than 2 thousand people** covered by the **Environmental Education Program**

**Approval of the Social Responsibility Policy**

# BUSINESS



## Niobium and its applications

Niobium is a multifunctional transition metal, with the ability to transform and enhance the properties of other materials. Even in small quantities, its addition provides high thermal and electrical conductivities, malleability, resistance to extreme temperatures, mechanical wear and corrosion, resulting in a significant improvement in the materials in which it is used. Furthermore, it provides additional lightness and safety to the structures in which it is applied. Niobium offers solutions for the aerospace and naval industries, civil construction and infrastructure, energy, nanocrystalline magnetic materials, batteries, urban mobility and telecommunications.



We were pioneers in the research and development of Niobium, which enables us to better understand its characteristics and benefits:

- **Technology:** improves the properties of advanced steels, cast aluminum, lithium-ion batteries and electronics.
- **Better performance:** reduction in weight and size, enabling dematerialization and miniaturization.

- **Optimization:** integration of electrical systems through high conductivity and reduced maintenance due to its resistance to wear.
- **Safety:** increased safety by improving structural properties and making materials more flexible. Provides lighter and more resistant structures.
- **Environment:** efficiency gains and lower energy consumption, reduction of the carbon footprint, and reduction of input consumption.

We develop applications for Niobium in different segments, such as batteries, steel, special alloys and nanocrystalline materials. In 2023, we recorded significant progress. On the battery front, we strengthened our technical cooperation with Toshiba, which began in 2018. We have also developed several projects to apply our solutions to urban buses, electric and hybrid trains, trucks and mining machines, ships and hybrid vehicles, robots and high performance cars. To serve this expanding market, we began construction of the new industrial plant for mixed oxides for batteries in Araxá, announced at the end of 2022.

We also strengthened the partnership with the British company Echion Technologies, for the use of battery-grade Niobium oxides in the anode, and established an agreement to acquire 20% of the North American startup Battery Streak (BSI) aiming to accelerate new technologies with Niobium for lithium-ion batteries. With Skeleton, an Estonian company that is leader in the supercapacitors segment, we have entered into a partnership for the production of battery electrodes. In the steel segment, we improved the

design of alloys and upgraded civil construction steels, improving their properties and resistance. Furthermore, we have advanced in the automotive sector, in vehicle structures and exhaust systems in special stainless steels.

Regarding special alloys, we expanded the use of Niobium in superconductors, starting from Niobium metal. In the nanocrystalline magnetic materials segment, we established partnerships with companies that manufacture electric motors to use a nanocrystalline material containing Niobium in its composition. Additionally, we contributed to the Mission Zero project, which resulted in the launch of the world's first hybrid competition truck.

In line with our strategy of mapping new applications for the metal, we established a partnership with a startup that developed a Niobium-based molecule with fungicidal properties for agricultural applications. The main advantage of this molecule is that it is completely inorganic and non-toxic, presenting itself as a more sustainable alternative in the agricultural fungicide market.

## Research and development

The commitment to innovation is evidenced by the **investment of R\$ 230 million** in research and development of products and applications for Niobium in 2023. Of the total, R\$ 80 million, or 32%, was allocated to the Battery Program.

Our projects are grouped by segment and involve several layers of development, such as concept, application, conditions of use and open innovation, a model that allows us to design or improve them with research centers and institutes, universities, startups and customers, in an open and collaborative manner.



# GROWTH STRATEGY



Our focus is the sustainable expansion of the Niobium market through innovation, technology and value creation.

Our strategy always considers anticipating the growth journey, maintaining production capacity greater than demand, ensuring the stability and reliability of the supply of Niobium products.



## Innovation

We understand that it is essential to establish partnerships for the continuous improvement of innovation management. Thus, we develop projects collaboratively, which enables access to better resources.

The Process and Product Development area ensures that industrial processes are prepared and suitable for different market demands and to improve production efficiency.

We monitor the evolution of the Technology Readiness Levels (TRL), ensuring that the development of technologies reaches a sufficient level to be commercialized, and we maintain dashboards to compare whether our growth forecast is in line with market expansion.

To track the effectiveness of the measures adopted in relation to innovation, we have a Project Management System (NTS), in which all market development initiatives or processes and products are recorded and monitored.



## Targets until 2027

Our business is conducted based on a Strategic Map aligned with the Integrated Management Policy and stakeholder requirements. Through methodology and guidelines, we define our goals and targets.

- Evolution of the operating model in the core market, with new steels;
- Implementation of the operating model in the battery market: feasibility of expansion investments, acceleration of new technologies, through operational efficiency and selection of projects and investments;
- Implementation of a culture aligned with the growth challenge, encouraging employees to have a vision for our growth journey, with integration between teams from different parts of the world, respect and appreciation of diversity, creating a perception of belonging and connections between teams;
- Increased operational efficiency and capital allocation;
- Advances in the ESG agenda: decarbonization route by 2040, in scopes 1 and 2; dematerialization and energy transition; continuous maturation of occupational safety circularity, maximizing the use of resources; in addition to ethics and governance.

## Customers

We develop personalized products to meet the different needs and demands of our customers. Additionally, we are constantly exploring new uses for Niobium. Our technical capacity to meet product customization is due to a highly specialized team, made up of doctors, masters and market professionals, with technical and commercial experience focused on our business.

In 2023, we invested in the growth of the dedicated team, which works in direct contact with the customer. At the same time, we promoted greater closeness between the commercial and technical teams, who worked in pairs with customers, in a model that seeks to maximize the results and benefits of using Niobium by promoting technology solutions to meet specific needs.

## ENVIRONMENTAL PERFORMANCE



Our purpose is to work towards a balanced relationship between the environment and our operations. We are guided by a Sustainability Program that establish environmental respect, especially the Cerrado biome, maximum use of mineral resources, water recirculation and environmental education.

## Climate change

We made a formal commitment and began in 2023 the process of deploying actions for decarbonization, with the goal of bringing our scope 1 and 2 Greenhouse Gas (GHG) emissions to zero, in scopes 1 and 2, by 2040.

In this regard, we are optimizing the use of renewable energy, increasing the consumption of recycled inputs, such as aluminum, and of those with lower carbon footprint, such as charcoal, in addition to promoting efficiency improvements and the development of fast recharge batteries using Niobium.

Since the launch of the decarbonization agenda for our activities in 2022, we have adopted in our plan fossil fuel replacement technologies (especially diesel, LPG and petroleum coke), the electrification of the fleet, and constant improvements of energy efficiency.

In 2023, one of the stages of the plan included the survey of all inputs per production unit, in order to understand which are the main GHG emitters in the industrial complex and improve our energy efficiency.



## Water resources and effluents

In 2023 we increased the volume of water recirculated in the industrial complex to 96.6%, and maintained the Bolsões de Água project, whose objective is to create level curves that form reservoirs to contain rainwater and, consequently, recharge the aquifer (groundwater), with no discharge into the watercourse.

The quality of effluent treatment is another priority. We operate with two own stations, capable of treating 1,500 m<sup>3</sup> of effluent per hour. The Effluent Treatment Station (ETEL) and the Sewage Treatment Station (ETE) complement each other. The first receives the disposal of water from the industrial process, and the second is responsible for treating water from bathrooms and our restaurant. From ETE, the resource goes to ETEL.

**Since the launch of our decarbonization agenda in 2022, we have invested in eco-efficiency and electrification of the fleet**

To manage the material topic of water and effluents, as well as their impacts, we adopted the following measures:

-  Maintenance of adequate structures in effluent generation sites (impermeable areas, correct piping, constant training for professionals).
-  Immediate handling of all non-compliances through a process of identifying causes and actions, implementing initiatives and verifying the effectiveness of the implemented solution.
-  Use of indicators in systems to manage real and potential positive impacts.
-  Installation, in the treatment unit, of online analysis equipment that allows constant control of the effluent quality.
-  Activation of the valve system in case of loss of control, immediately interrupting the sending of treated effluent to the water body, directing it to the tailings dam.
-  Periodic monitoring of the quality of water resources.



## Dam management

Our Integrated Monitoring Center (CMI) operates 24 hours a day to ensure the safety of structures. The dams undergo continuous checks carried out by the Registration Engineering area and semi-annual checks carried out by independent audits.

We also carry out annual simulations for all structures in the industrial complex, to evaluate the performance of people involved in emergency action processes (such as siren tests, evacuation and time needed to travel the routes).

These initiatives are part of our Emergency Action Plan (PAE) for dams, which is available at our industrial plant, on the corporate website, at the City Halls of Araxá, Ibiá and Perdizes and at Civil Defense organizations.

Of the material generated in our operations during the year, almost all of it was reused for environmental reintegration of areas



## Waste and co-products

In 2023, 99.68% of the sterile material generated in our operations was reused in engineering works in the industrial park, especially in the decommissioning of dams, as part of the tailings covering material and subsequent revegetation, promoting the environmental reintegration of the area.

We continually test new technologies for waste disposal. Currently, we conduct a wet disposal of flotation tailings in dams (slurry) and magnetite is dewatered through hydrocyclones. Always seeking to improve the safety of structures and our processes, we continually study new technologies available on the market.

In 2023, we obtained an environmental license to implement EDR9, a waste disposal structure consisting of a project with modern technology, which increases the disposal of waste in a dry form. The project will involve an investment of R\$ 3.5 billion and will require the work of around 2,000 people, expected to be completed in 2028.

## SOCIAL PERFORMANCE



At the end of 2023 we had 1,914 employees, to whom we provided opportunities for technical and behavioral development by providing training on topics ranging from leadership skills to regulatory standards.

We seek to ensure variable salaries and remunerations compatible with those of the national and international markets. We offer full-time employees food vouchers, meal vouchers, health and dental insurance, a co-participation medication purchase plan, education assistance – for children of employees aged 1 to 25 years –, life insurance, pension fund/benefit plan, and Gympass. In Araxá, we maintain a kindergarten school, with approximately 400 children of employees, who have this benefit for free.



## Our people

We strive to establish the safety of professionals through actions such as the implementation of the Niobium Rules, which seek to mitigate ten critical processes and risks. They are part of the Security Value Program, which aims to develop actions that contribute to the continuous evolution of our maturity in occupational health and safety.

Complementary, we offer well-being programs, with the support of social workers, who give lectures on different topics, such as life goals, physical and mental health, and financial education, and visit the areas talking to the teams.

### Encouraging diversity

Our Diversity Committee meets every 15 days to discuss relevant topics and address initiatives so that we can be a more diverse and inclusive company. We annually promote the Diversity and Inclusion Week, in which we carry out intensive communication on the topic, with lectures, conversation circles, workshops and communication actions, aimed at raising employee awareness.



## Suppliers

In line with our commitment to promoting economic development in the region where we operate, we prioritize suppliers from Araxá or other cities in the State of Minas Gerais in our supply chain. To toughen companies close to our industrial operations and create jobs, we promote training in the community.

During the year, we formalized a partnership with the National Industrial Learning Service (Senai) to train local labor force, with the aim of increasing the participation of the population of Araxá in the works for implementing our new waste disposal complex (EDR9), which should be completed by 2028.

We continually carry out online training for all third parties, with the aim of reinforcing adherence to our Code of Ethics and Conduct and compliance policies.

**In 2023, of the R\$ 2.8 billion invested in goods and services, 52% were in companies from Minas Gerais and 13% in suppliers in Araxá.**

**During the year, 96% of the products and services** necessary for our operation were purchased in Brazil, with Minas Gerais representing **43% of the national volume**.

Our supply chain had **1,910 registered suppliers** in 2023, including manufacturers, distributors, resellers and direct service providers, **15% of which were from Araxá**.

## Community

Based on a relationship of transparency and ethics, we operate with the premise of taking care of our business and, at the same time, contributing to the community where we operate.

To increasingly evolve in taking care of the community and strengthen governance, we prepare in 2023 our Social Responsibility Policy, aiming at formalizing priorities, pillars and forms of action, improving targeting of our resources.

### Investment in infrastructure and services

	2021 (R\$)	2022 (R\$)	2023 (R\$)
Education	391,650.00	4,687,415.00	4,185,023.94
Health	9,471,080.00	2,757,996.00	1,234,510.56
Sports	8,225,971.00	9,149,228.00	11,372,500.00
Culture	14,565,074.00	8,830,338.00	9,926,970.00
Social	13,263,544.00	21,350,100.00	12,908,849.54
<b>Total</b>	<b>45,917,319.00</b>	<b>46,775,077.00</b>	<b>39,627,854.04</b>

Note: The variation in investment between 2021 and 2023 is justified by the amounts allocated to actions to fight Covid, in 2021, and to the renovation work at Araxá airport, in 2022. The investments made are in-kind.

## Resource allocation



### Children's Fund

**R\$ 5.5 million and 7 thousand benefited from them**



### Elderly Fund

**R\$ 5.5 million and 6 thousand benefited from them**



### Other

**R\$ 681 thousand and 630 benefited from them**



## CORPORATE GOVERNANCE



In 2023 we achieved certification of the anti-bribery management system by ISO 37001. It was the result of a project that began identifying 22 improvement aspects, worked on and improved during the year, in addition to mapping compliance risks throughout our production and administrative chain. ISO 37001 is the international standard for combating corruption and bribery by the International Organization for Standardization, granted in Brazil by the National Institute of Metrology, Quality and Technology (Inmetro).

Our commitment to the pillars of ethics, integrity and transparency includes the fight against corruption, which is a recurring theme on our communication agenda, disclosed in internal training for employees and third parties.



We also have an Ethics Committee, which evaluates cases reported on the Confidential Line and forwards them to the Audit and Risk Committee for investigation, conclusions and recommendations. There is also the Compliance Program, which includes the Code of Ethics and Conduct, the Competition Defense Manual and the Anti-Corruption, Third Party Hiring, Donations and Sponsorship, Gifts and Hospitality and Conflict of Interest policies.

All of our compliance policies are gathered on the Compliance Portal, which systematizes the area's flows and, with its own governance,

allows greater traceability and reportability of processes, organization of controls, improvement and monitoring of indicators, and concentration of data on a single platform.

In addition, in 2023 we developed the Social Responsibility Policy, launched the Risk Policy and worked on the creation of the Human Rights Policy, which was approved in early 2024, to increase the level of awareness of our commercial partners and suppliers, aligned with the importance of ethics and integrity.

## Confidential line

Our Ethics and Reporting Channel is available to internal and external audiences to report deviations or violations of the Code of Ethics and Conduct and internal standards. Respecting the confidentiality of complainants, it can be accessed daily, 24 hours a day.

**Website:** [www.cbmmcompliance.com](http://www.cbmmcompliance.com)

**Telephone numbers:**

**Brazil:** 0800 7210754

**United States:** 1-800-982-0934

**Switzerland:** 0800-835-088

**Netherlands:** 0800-022-2352

**Singapore:** 800-852-3836

**Other countries:** +55 11 2739-4508 (accepts collect calls)

## Governance structure

Our governance structure includes the Board of Directors, six advisory committees and the Board of Executive Officers.

### Composition of the Board of Directors\*

#### Chairman

Pedro Moreira Salles

#### Vice chairman

Fabio Colletti Barbosa

#### Board members

Demosthenes Madureira de Pinho Neto  
Eduardo Augusto Ayroza Galvão Ribeiro  
João Fernando Gomes de Oliveira  
Joon Youp Jung  
Mauro Agonilha  
Siegfried Kreutzfeld  
Tienan Wang  
Tomoyuki Kawashima  
Weibao Hao

\*Composition of the Board of Directors at the end of 2023.

### Composition of Board of Executive Officers

#### Chief Executive Officer

Ricardo Fonseca de Mendonça Lima

#### Executive Officers

Alex Silva e Amorim  
Marcelo Scuccuglia  
Rafael Agnelli Mesquita  
Renata Willens Longo Ferrari  
Rogério Contato Guimarães

## Advisory committees

Strategy Committee

People Committee

Finance Committee

Audit and Risk Committee

Technology Committee

Legal Committee

## OPERATIONAL AND FINANCIAL PERFORMANCE



We reported positive financial results in 2023 in terms of volume and market size. Throughout the year, our results reflected the focus on the strategy – which consists of developing new applications and uses for Niobium.

In this context net profit totaled R\$ 4.9 billion; a growth of 9% compared to the previous year, mainly due to the expansion in sales, which reached 92 thousand tons of Niobium products, 5.5% more than in 2022.

With global leadership, our intention is to expand the Niobium market. In this regard, we invest in research and development in partnership with clients, universities, startups and other relevant players. Considering that the use of Niobium goes far beyond steelmaking, we have set a goal of reaching 25% of revenue from new segments in the next ten years.

# **Corporate information**

## **Companhia Brasileira de Metalurgia e Mineração (CBMM)**

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Araxá - Minas Gerais - Brazil  
ZIP code: 38183-903  
Tel: +55 (34) 3669-3000/3201-4500  
[www.cbmm.com](http://www.cbmm.com)

# **Credits**

## **Coordination**

CBMM Corporate Communication

## **Indicator consulting**

Avesso Sustentabilidade

## **Writing, editing, and proofreading**

KMZ Conteúdo

## **Graphic design and layout**

KMZ Conteúdo

## **Images**

CBMM collection

