



Ferbasa

**Sustainability
Report
2022**





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About the Report

GRI 2-1/3-1

We present the fourth edition of the Sustainability Report of Cia. de Ferroligas da Bahia – Ferbasa, with data for the year between January 1 and December 31, 2022.

Striving for transparency, fairness of the data presented here and adoption of best reporting practices, the document uses the international methodology Global Reporting Initiative (GRI), without external verification.

The points addressed with greater emphasis throughout this work were determined from the results of the second Materiality Cycle, held in 2021, with the objective of deepening the material themes considered relevant to the Company's various stakeholders.

Questions about information published here can be forwarded to the Communication Coordination, by the contacts:

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AGILE READING

In the top bar of the pages, an interactive table of contents makes it easier to navigate through this file and access the contents of the chapters.

REFERENCE

To structure this report, we followed the guidelines of the Global Reporting Initiative (GRI)

A message from the Management

GRI 2-22



“A company without history is like a body without a soul”
José Carvalho

The year 2022 was marked by the armed conflict between Russia and Ukraine and the residual restrictions still stemming from the devastating covid19 pandemic, whose macroeconomic factors, on the one hand, caused imbalances in the international market and, on the other, put favorable pressure on ferroalloy prices. Amid this complex scenario, FERBASA has focused its activities on strategies aimed at containing the impacts caused by rising inflation and interest rates, seeking to maximize its margins. As a result, it achieved historic profits of R\$1,062.5 million, a success shared with our employees, who maintained their efforts throughout the period.

During the year, other important steps were taken to reinforce business competitiveness, such as the launch of our first open innovation call and the holding of the Embrapii Day workshop, an event focused on innovation and continuous improvement. Furthermore, we advanced the ESG agenda, which culminated in the creation of a roadmap for the years 2023-2025.

In the social sphere, it was possible to increase investments aimed at serving the communities that surround the operations and are served by the Ferbasa Is Here Social Responsibility Program. A total of R\$21 million was invested in actions carried out in 130 communities in 34

municipalities in the state of Bahia to benefit around 170 thousand people. EDUCATION remained the main line of the Program, due to its priority role in building a fairer and more equitable society.

However, the highlight of 2022 was the inauguration of MEMORIAL JOSÉ CARVALHO, a space built on the premises where the Founder of FERBASA and FOUNDATION JOSÉ CARVALHO resided for around 40 years, which will function as a hub for disseminating the culture of both organizations. The date could not be more providential. After the exhausting period of health and humanitarian crisis, it was possible to bring together employees, business partners and friends to celebrate FERBASA's 60th anniversary and, above all, celebrate the legacy of José Carvalho, who constitutes our real source of inspiration.

Despite the complexities experienced in recent times, the year of 2022 brings us back to good memories! We move forward guided by the humanist spirit of our Founder, in the certainty that our challenge is to maintain the prosperity and longevity of the Company, based on sustainable and safe operations, focused on preserving the quality of life of our employees and sharing with society the value generated.

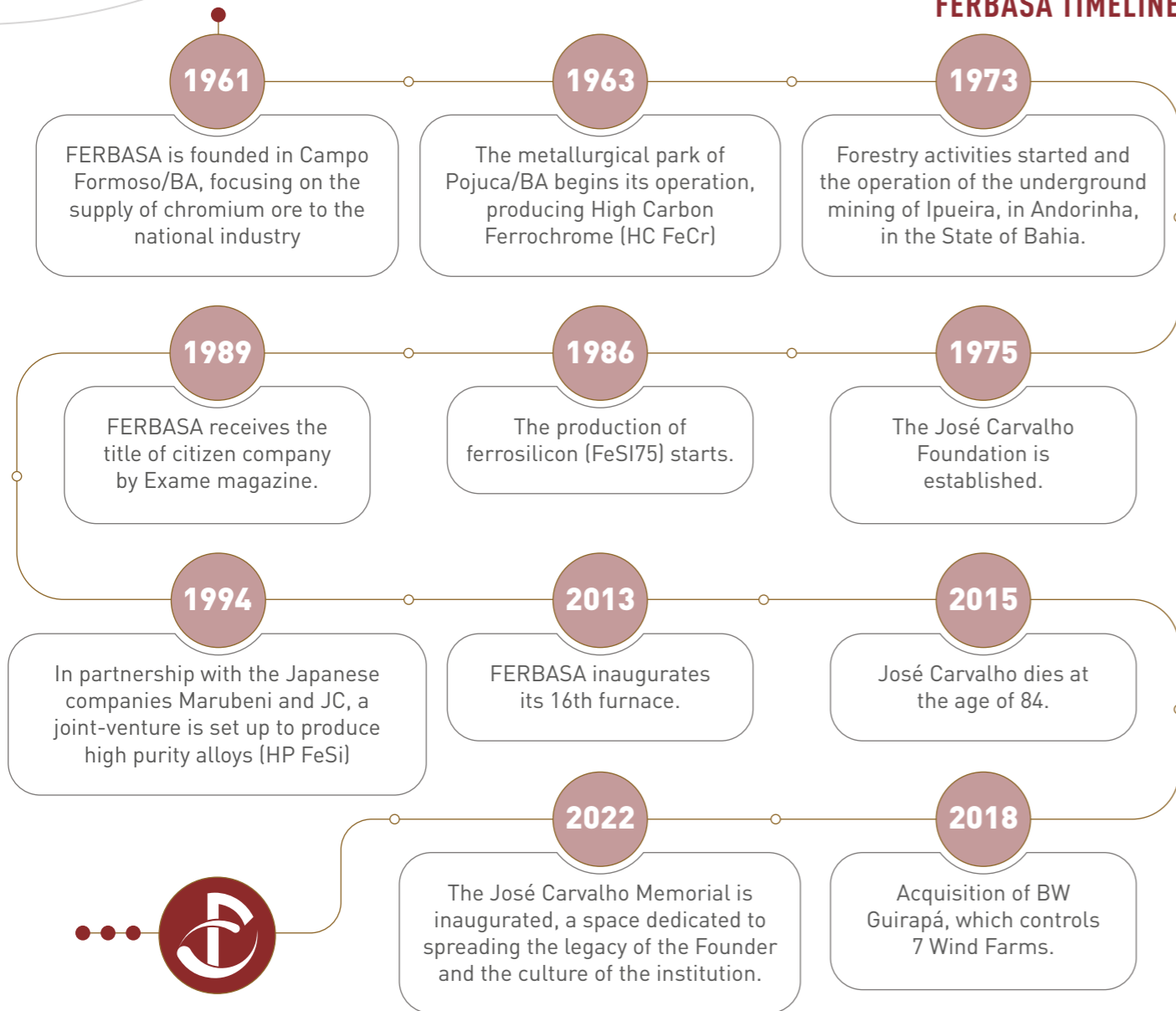
Good reading!



Ferbasa

GRI 2-1/ 2-6

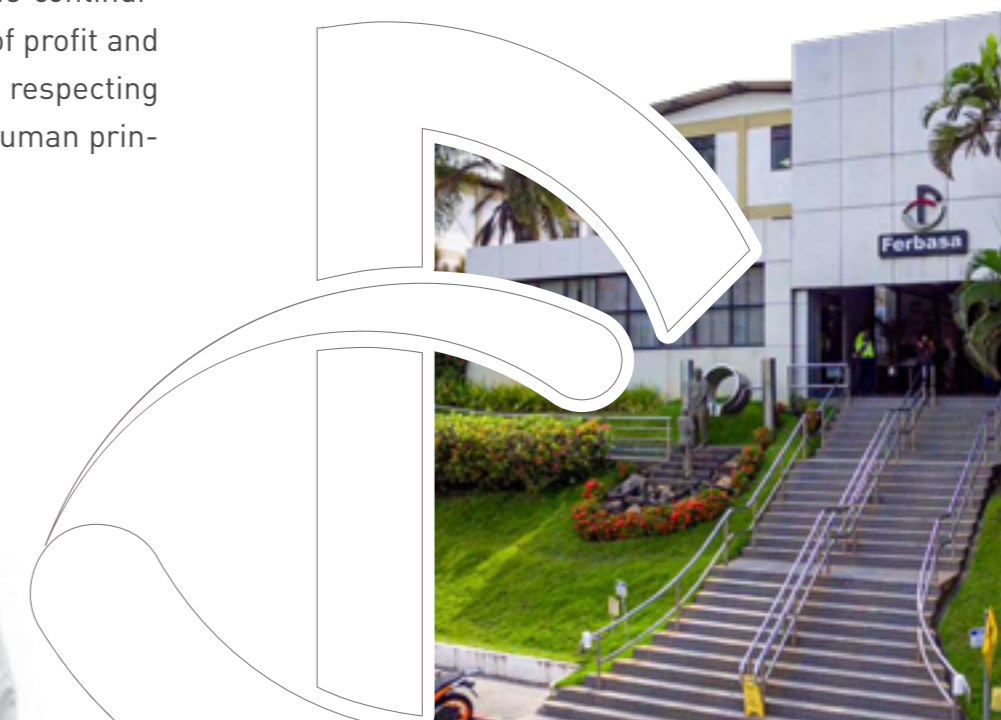
FERBASA TIMELINE



FERBASA was founded in 1961 by engineer José Corgosinho de Carvalho Filho. Headquartered at Estrada de Santiago, s/n, in the town of Pojuca, in the State of Bahia, it concentrates its administrative work at Rua Ewerton Visco, 290, Ed. Boulevard Side Empresarial, 25th floor, Caminho das Árvores, Salvador (BA).

A national leader in the production of ferroalloys, the Company holds 95% of the national chromite resources, is the only integrated producer of ferrochrome in the Americas and one of the ten largest industries in operation in Bahia (Ranking Valor 1,000 of 2022 - <https://infograficos.valor.globo.com/valor1000/rankings/ranking-das-1000-maiores/2022>). *

The largest portion of its portfolio is destined to the steel sector and to the manufacture of stainless and special steels, serving the domestic and foreign markets (in particular, Japan, the United States and the European Union). The austere, responsible and ethical corporate management aims at the continuity of the business, the generation of profit and the offer of high-quality products, respecting the environment, society and the human principles left by the founder.



Mission, Vision and Values



MISSION

Serve the market of ferroalloys, chromium ore and renewable energy, ensuring the satisfaction of customers, shareholders and employees, developing and operating an integrated business model of Mining, Metallurgy, Forest Production and Energy, in a sustainable and competitive way.

VISION

To be a globally competitive company in ferroalloys and chromium ore, generating renewable energy, consolidating itself as a reference in sustainability.

VALUES

- Ethics and respect for commitments;
- Opportunity for personal and professional growth;
- Quality, safety and solidity;
- Simplicity and humility;
- Sustainability and appreciation of life.

Integrated production cycle

GRI 2-6

To guarantee its value chain, Ferbasa has an **integrated and verticalized production cycle**, which ensures fundamental inputs for its main marketed products.

The metallurgical plant, located in Pojuca (a city 76 km away from the state capital), comprises 14 electric furnaces (eight of ferrochrome and six of ferrosilicon), all equipped with baghouse filters, devices that neutralize the release of particulate matter into the atmosphere. The main core of the Company's acti-

vities, the unit produces the following metal alloys:

- High carbon ferrochrome (HC FeCr);
- Low carbon ferrochrome (LC FeCr);
- Ferrosilicon chrome (FeSiCr);
- Ferrosilicon 75 (FeSi);
- Inoculants.

Learn more at <https://www.ferbasa.com.br/atuacao/metallurgia/nossos-produtos-2/>.





A new mine, located in the municipality of Ipirá, had begun operating in 2022. It's called Londrina and its operation replaces the activities closed in Rafael Jambeiro.

Mining is responsible for the mineral extraction that has almost its totality directed to the supply of the metallurgical plant, being the surplus chromium ore, eventually destined for export.

The unit has:

- an underground chromium ore (chromite) mine in the town of Andorinha/BA;
- an open pit mine in Campo Formoso/BA;
- a plant focused on the production of quicklime, in the town of Euclides da Cunha/BA;
- Two quartz mines, located in the towns of Tucano/BA and Ipirá/BA.

In 2022, mineral prospecting was intensified in search of chromium and quartz ore reserves. A new geology team has been structured to discover and confirm some geological anomalies with the potential to become active mines. In the year, the initiative has already resulted in a research project in the municipality of Campo Formoso for solid quartz for industrial use in the manufacture of

FeSi alloys, where 1,738m of diamond drilling was carried out. The studies reflected in a measured resource of 1,801,000t of quartz with contents that meet metallurgical specifications. Another 54 projects have research permits, including 24 for chromite and 14 for quartz.

The forest area consists of 64,000 hectares (around 158,147 acres), of which 25,000 hectares (around 61,776 acres) are forests planted of renewable eucalyptus. Of this asset, Ferbasa preserves as a reserve of native forests more than that established by the legislation

(20%), among which 1,243 hectares (around 3,071 acres) are areas approved as Private Reserve of Natural Heritage (RPPN – Portuguese acronym that stands for Reserva Particular do Patrimônio Natural) – which includes the legal reserve and areas of permanent preservation.

CHARCOAL VS. MINERAL COAL

Comparison of emissions

Input	Volume (t)	Emission (tCO2e)
Bioreducer	171,348.00 ¹	30,865.13
Coal Coke	144,202.80	448,847.50

¹ Volume of bioreducer consumed by Ferbasa in 2022 in the production of ferrosilicon

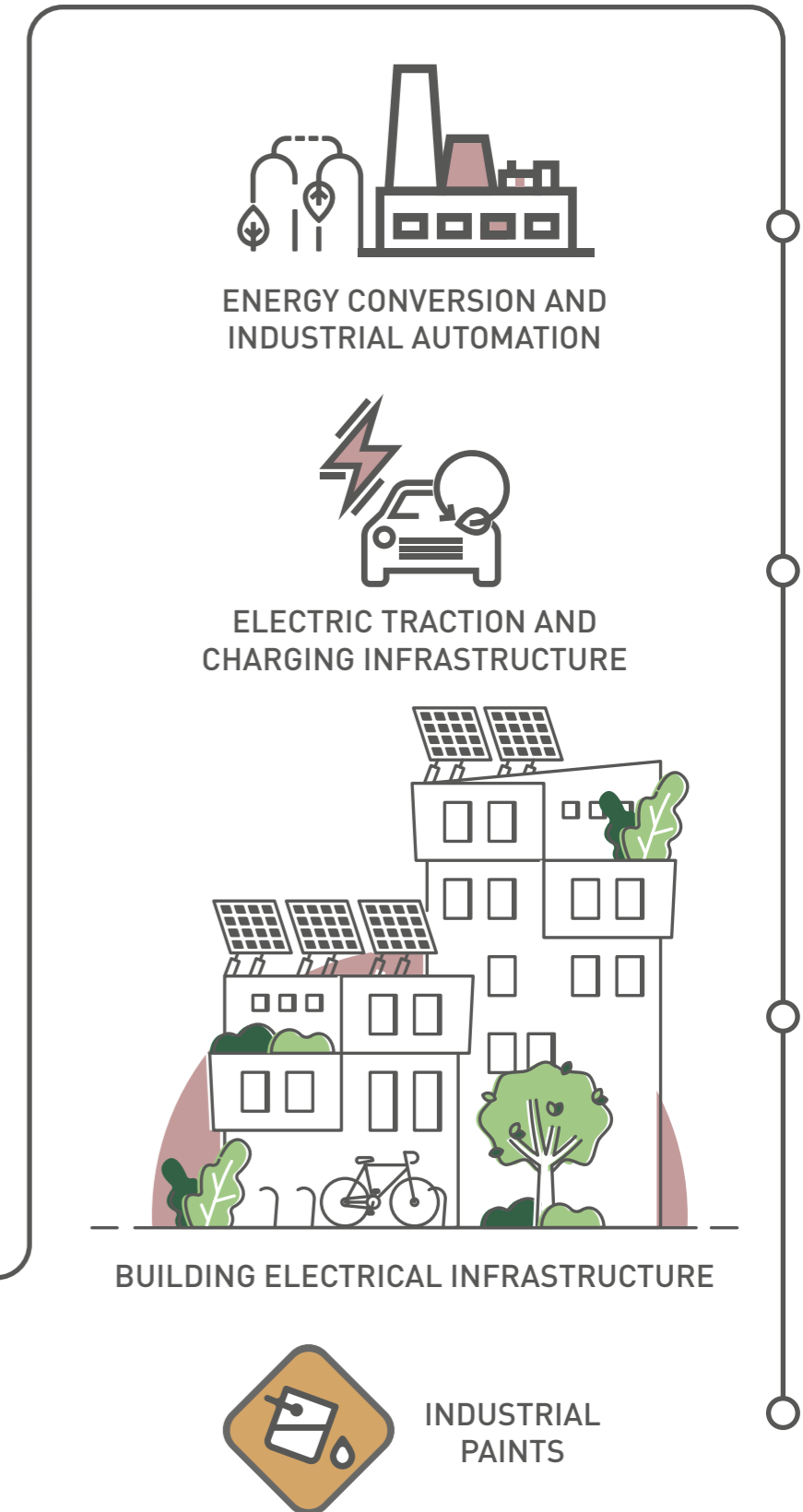
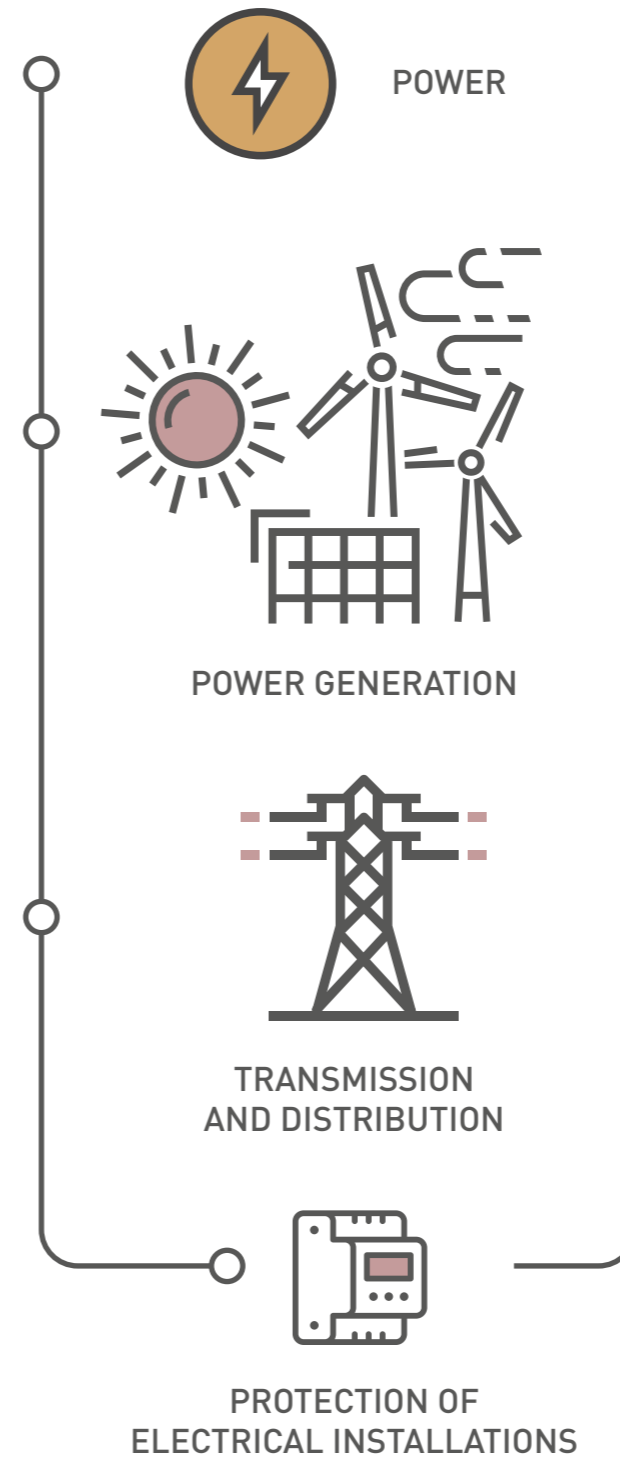


The verticalization strategy is completed with BW Guirapá, located in the towns of Caetit  and Pinda  (BA). The Wind Complex has an installed capacity of 170.2 MW distributed in seven wind farms that, together, have 92 wind turbines. Its generation meets a contract signed with the Chamber of Commercialization of Electric Energy (CCEE), in Reserve Energy Auction, whose maturity will be in 2036*. After this period, the complex may compose Ferbasa's energy supply mix, enabling the Company to consume or commercialize the energy generated.

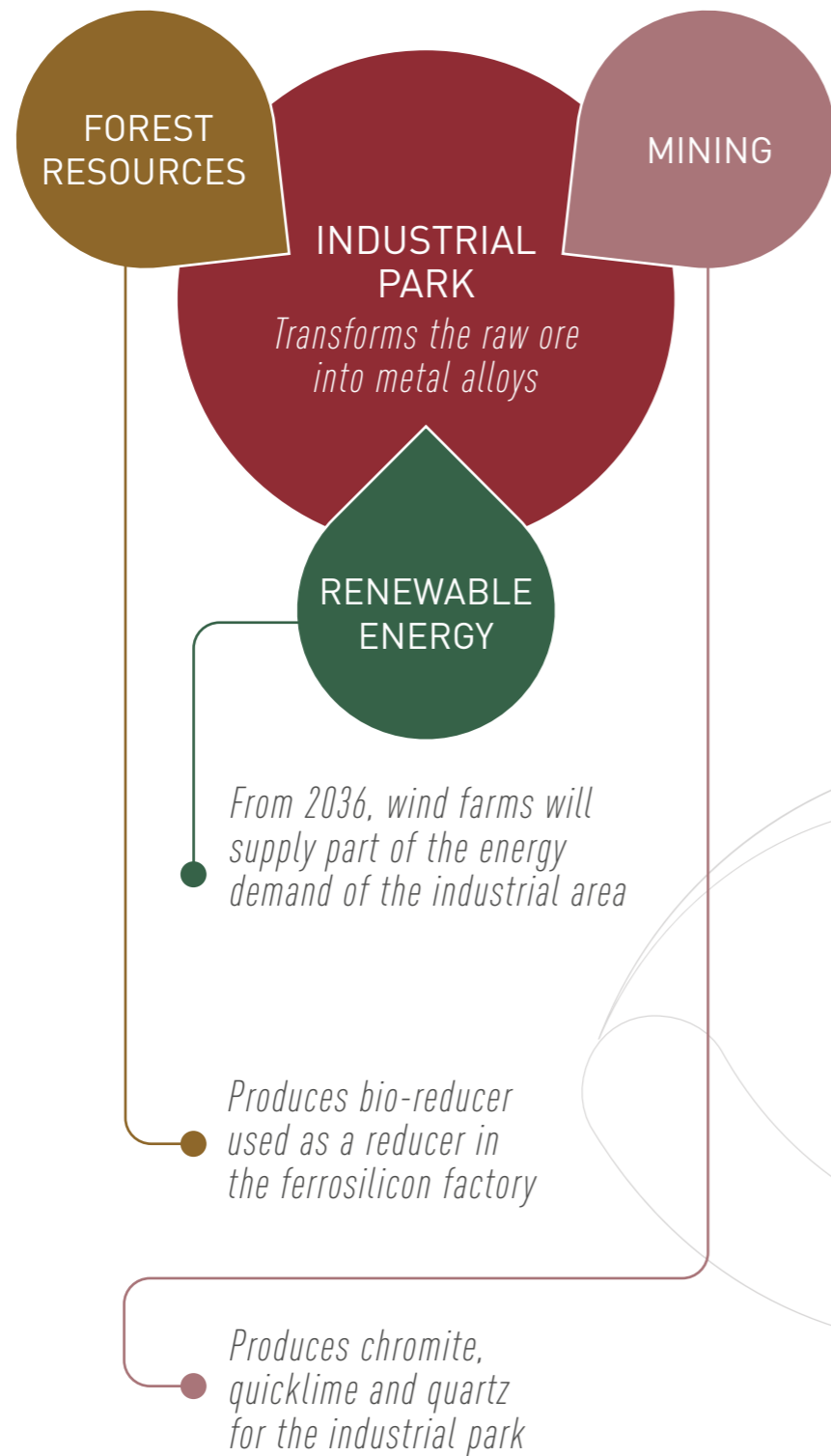
"The bioreducer is a fundamental input in the manufacture of ferrosilicon alloys, representing an important differential by avoiding the use of coal or coke in the production of this alloy, which enables the lowest emission of greenhouse gases (GHG)."



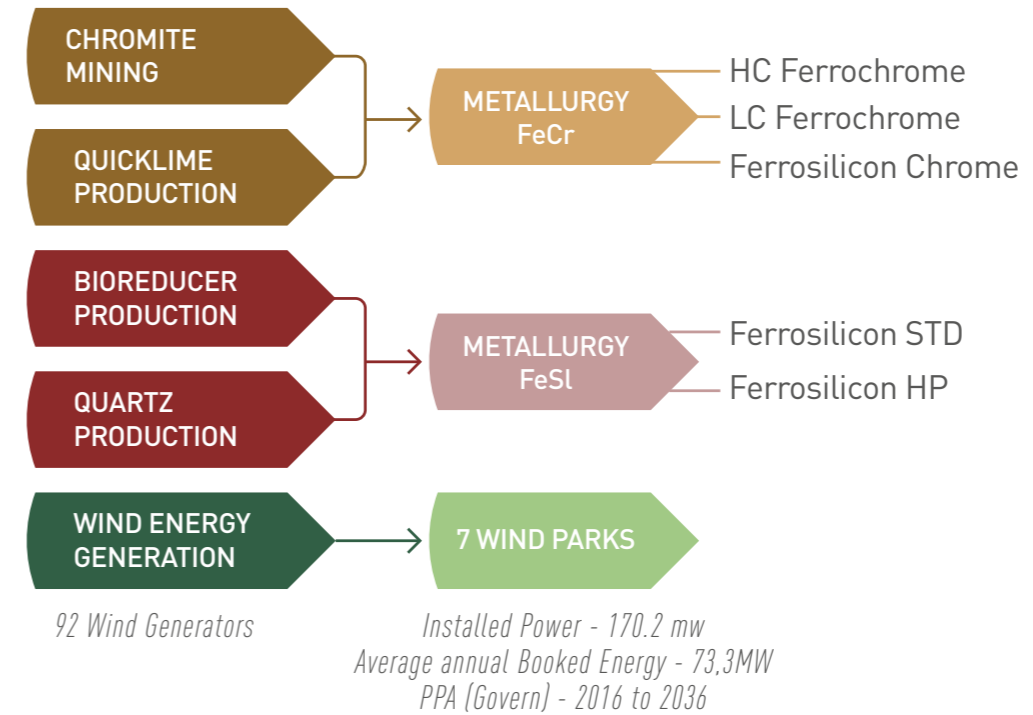
* Up to 2021, we reported the expiration of CCEE in 2034. After re-evaluation of the contracts, we corrected the information for 2036.



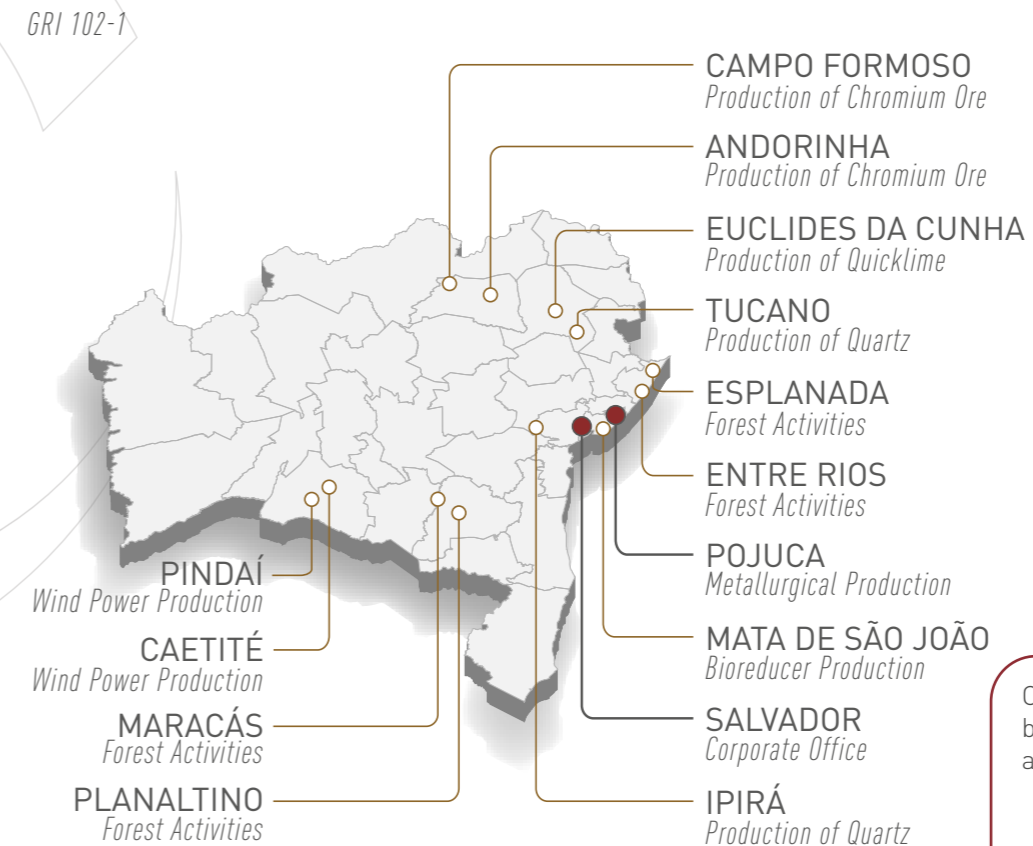
UNITS OF PRODUCTION



PORTFOLIO



GEOGRAPHICAL LOCATIONS OF THE OPERATIONS



Called Londrina, the mine of Ipirá began to operate to replace the activities closed in the town of Rafael Jambeiro.

Corporate Governance

A publicly traded company listed since 2011 as Level 1 Corporate Governance in B3, Ferbasa remains in line with international best practices. Management is constantly improved and performance is guided by a high degree of transparency, following strict principles of ethics, equity and responsibility. In the same direction, the conduct of social, environmental and governance (ESG) aspects aim at the sustainability of the business and the positive contribution to nature and society.

In this sense, a set of policies establishes guidelines that encompass all units, guide internal processes and guide relations with all stakeholders. Together with standards and procedures, these policies seek to mitigate risks and strengthen the generation of shared value.

Periodically, compliance and integrity controls and tools are strengthened, as well as governance mechanisms are improved, which includes the creation of new advisory bodies to the Board of Directors and the Executive Board, to enhance the degree of assertiveness in strategic decisions

The female presence is a highlight in Senior Management. At the end of the year, the Board of Directors had the participation of 25% of women among its 8 collegiate members. In the Board, the female gender represented 10% of the executive positions.

- 43,53%** Corporate office
- 25%** Board of directors
- 17,4%** Leadership and Coordination
- 10%** Direction
- 7,6%** Positions held by women at Ferbasa

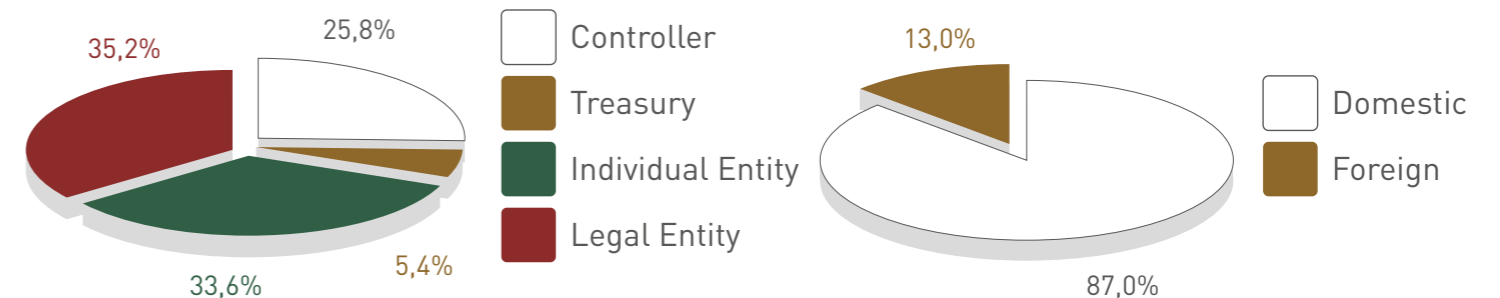


Shareholding structure

The following table demonstrates Ferbasa's shareholding structure as of December 31, 2022:

Shareholders (number of shares)	ON	%	PN	%	TOTAL	%
José Carvalho Foundation	29,086,696	98.80	15,162,000	25.75	44,248,696	50.10%
Trígono Capital	3,000	0.01	8,296,600	14.09	8,299,600	9.39
Vanguard Group	-	-	1,525,772	2.60	1,525,772	1.72
Black Rock	-	-	887,737	1.50	887,737	1.00
JP Morgan	-	-	807,901	1.37	807,901	0.91
Treasury shares	40,000	0.14	3,183,300	5.41	3,223,300	3.64
Other shareholders	310,304	1.06	29,016,690	49.28	29,326,994	33.24
Total	29.440.000	100,00	58.880.000	100,00	88.320.000	100,00

At the end of the year, the shareholder profile of the Company's preferred shares (FESA4) is as follows:



Organizational structure

GRI 2-9/ 2-16

The governance structure includes three bodies: Board of Directors (CAD), Fiscal Council and Executive Board, the members of the first two were elected at the Annual and Extraordinary General Meeting (AGOE – Portuguese acronym that stands for Assembleia Geral Ordinária e Extraordinária) held on April 18, 2022. Subsequently, the members of the Direction were elected by the CAD at a meeting held on the same date.

BOARD OF DIRECTORS

GRI 2-9/ 2-10/ 2-12/ 2-14

The highest governance body has as its main attribution to act diligently in favor of the Company's continuity, being responsible for approving strategic planning, investment plans, annual budgets, policies and guidelines, including management of corporate and financial risks, in addition to supervising the acts of the governing body and authorizing all actions that go beyond those of executive function. The body consists of a minimum of five and a maximum of eight members, with an independent representative appointed by minority shareholders, who are elected annually at an Annual General Meeting (AGM).

Name	Function (executive or non-executive)	Other functions and commitments
Geraldo de Oliveira Lopes	President	Member of the Institutional Management and Innovation Committees
Sérgio Curvelo Dória	Copresident	Member of the Institutional Management, People Development and Innovation Committees
José Ronaldo Sobrinho	Counselor	Member of the Institutional Management and Innovation Committees
Bárbara Klein de Araújo Carvalho	Counselor	Member of the Institutional Management, People Development and Audit Committees
Guilherme de Alencar Amado	Counselor	Member of the Audit Committee
Marcos Sampaio de Souza	Counselor	Member of the Innovation Committee
Marta Teixeira Barroso Fernandes	Counselor	Member of the Institutional Management, People Development and Audit Committees
Ricardo Antonio Weiss	Counselor	

Note: from January, 1 to April, 17, Mr. Paulo Roberto Magalhães Bastos was part of the Board.



Accompanying the execution of the CAD's deliberations, the Corporate Governance Secretariat is responsible for advising the group on corporate and governance issues.

FISCAL COUNCIL

With an annual mandate, the three effective directors and the three alternates act as independent supervisors. Their duties include examining and approving in a collegiate manner the financial statements, balance sheets and other statements of the economic and financial performance of Ferbasa.

Name	Function (executive or non-executive)
Cristiano Lima da Mota	Full Member
Massao Fabio Oya	Full Member
Emanuel Paixão de Oliveira	Full Member
José Augusto da Silva de Almeida	Substitute
José Santos Souza	Substitute
Maria Elvira Lopes Gimenez	Substitute

EXECUTIVE BOARD

GRI 2-9/ 2-13

The Board is constituted of 11 boards of directors and 10 members, the group is responsible for supervising the various control bodies, ensuring compliance with internal policies and preparing a budget, investment plan, financial statements and other guidelines and reports to be approved by the CAD.

Name	Function (executive or non-executive)	Attributions
Silvano de Souza Andrade	Chief Executive Officer	General management of the Company, the supervision and coordination of the executive boards, as well as the articulation between the Executive Board and the Board of Directors.
Álvaro Fernandes Santos	Director of Innovation and New Business	Direction and coordination of activities focused on innovation, prospecting and development of new business opportunities and acquisitions, in accordance with the Company's strategic planning.
Ana Paula Fontes Mesquita de Oliveira	Administrative Director	Direction and coordination of the processes inherent to the human resources area and the administrative activities of the Organization.
Claudiney Marcio de Araújo Pedrosa	Commercial Director	To manage the activities related to the Company's marketing areas, whether in the domestic or foreign markets.
Eriberto do Nascimento Leite	Mining Director	Direction, coordination and supervision of the Company's mineral production activities.
Heron Albergaria de Melo	Chief Financial Officer	Direction, guidance and supervision on the execution of activities related to the Company's finance and accounting areas.
Marcio Lopes Fernandes de Barros	Legal and Compliance and Investor Relations Director	Direction, coordination and supervision of the legal processes and internal control activities of the Organization. Direction and coordination of activities aimed at the relationship with the investing public, ensuring the information provided to the regulatory market and the Securities and Exchange Commission.
Oséias da Rocha Fiau	Industrial Director	Direction, coordination and supervision of the industrial operations of the Organization's metallurgical plants.
Sebastião da Cruz Andrade	Director of Forest Resources	Direction and development of forestry activities, as well as processes related to charcoal production.
Wanderley Lins de Oliveira	Director of Geology and Mining	Direction, coordination and supervision of activities focused on research, prospecting of mineral assets and mineral production.

Note: In the year, the position of Chief Executive Officer was held by Marcio Barros from 01/01 to 17/04 and temporarily by Ronaldo Sobrinho from 18/04 to 18/09.

Completing the Governance structure, the advisory committees are responsible for recommendations on topics within their competence. Currently formed by members of the CAD itself, the four groups carry out activities directly linked to Ferbasa's strategic objectives. They are:

- Audit Committee
- Institutional Management Committee
- People Development Committee
- Innovation Committee.

Other commissions, committees and multidisciplinary working groups, formed by professionals who are members of Ferbasa's own staff, are directly linked to the Executive Board, and act in the deepening of relevant topics, such as ESG, Innovation, Data Privacy and Waste Management.



Ethics, integrity and compliance

GRI 3-3

Ethics and respect for commitments are fundamental values for FERBASA.

Compliance issues and initiatives conducted by Internal Audit are strictly dealt with based on what is determined by the Code of Conduct, under the supervision of the CAD. The Company's policies, guidelines and contracts make explicit, in a transparent manner, the relevance of compliance with laws by employees, suppliers or service providers, establishing control measures, investigation mechanisms, application of penalties and other sanctions.

In 2022, the Risk Management and Compliance area was incorporated into the new Legal and Compliance Department, created during the year. Among the activities carried out during the year, the diagnosis of the Integrity Program stands out, which aims to present the elements brought by the Anti-Corruption Law and the Federal Decree that regulates the objective administrative and civil liability of legal entities for the practice of acts against the public administration (11.129/2022), in addition to verifying the level of compliance of Ferbasa's current program and recommending its improvement.

CODE OF CONDUCT

GRI 2-23/ 205-2

The instrument brings together the ethical principles that guide Ferbasa's relationship with its stakeholders, strengthens the company's institutional image before society and clearly demonstrates the expectations regarding conduct, respect for human rights and routine procedures that must be adopted by all its employees and suppliers, regardless of the position held. The Code also affirms the pursuit of excellence in all the Company's activities.

In order to ensure that non-compliance of ethical issues, violations and conduct deviations are adequately addressed, the Code of Conduct publishes the reporting channels, where occurrences can be reported by email: comiteconduta@ferbasa.com.br or by phone (71) 3404-3199. Open to anyone, the channel preserves the whistleblower's right to anonymity, as well as the confidential, impartial and impartial evaluation carried out by the members of the Ethical Conduct Committee. At the end of the year, six cases were registered, three of which were filed and three were in progress.

Investigative processes initiated

2020	2021	2022
4	3	6

CONFLICT OF INTEREST

The highest governance body works to prevent and mitigate conflicts of interest by monitoring the implementation and approval of policies and guidelines aimed at compliance with current legislation and the adoption of ethical and compliance practices that ensure preventive and detective action of risks, in accordance with the Code of Conduct

Every year, the Company revisits the topic related to conflicts of interest in its [Registration and Reference Form](#).



Risk management

GRI 3-3

The Risk Management and Compliance (GRC – Portuguese acronym that stands for Gestão de Riscos e Compliance) area supports managers in identifying and assessing the criticality of relevant risks, considering the impact and vulnerability matrix defined in the Company's Risk Management Policy. The document is aligned with the premises of the Committee of Sponsoring Organizations (COSO) and defines the responsibilities and participation of the levels of governance and leadership in relation to the risk management process.

GRI 2-25

The company is committed to prevention and precaution, as well as the protection of the environment. Thus, in case of incidents, immediate actions are taken according to established protocols. To manage possible environmental impacts arising from its processes, the conduct of occurrences is established based on the Analysis of Aspects, Impacts, Dangers and Damages – AIPD (Portuguese acronym that stands for Análise de

Under the supervision of the Legal and Compliance Department and the Audit Committee control adherence is checked out mitigating measures and issued recommendations for management, focusing on monitoring and reducing the degree of risk exposure to the acceptable tolerance level. During the year, the Executive Board reassessed the Material Risk Matrix.

Aspectos, Impactos, Perigos e Danos). In the same way, an internal ISO device assists in the handling of complaints, which includes investigation, communication with the community, negotiation and decision-making. Stakeholders are involved annually in meetings to listen and share solutions. The effectiveness of complaint mechanisms and other redress processes are verified through feedback from those involved and follow-up of recidivism of occurrences.

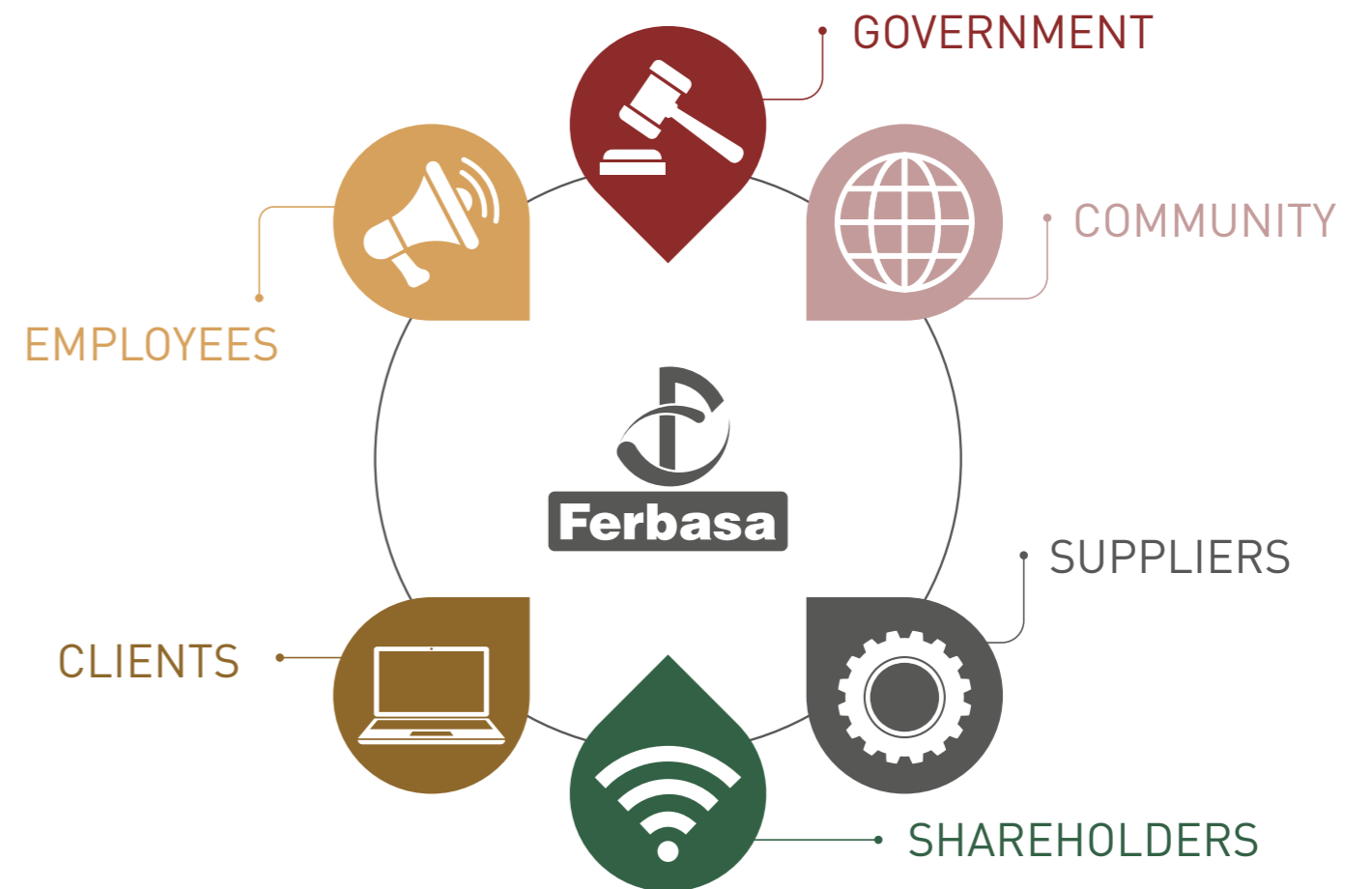
Communication channels and stakeholders

GRI 2-29

Ferbasa excels in long-term relationships and constant dialogue, as well as invests in strengthening ethical and healthy relationships with its various stakeholders. For this, it employs specific communication tools for each audience. They are:

Roadshows around Brazil

With each quarterly result released, Ferbasa held face-to-face roadshows with investors. In 2022, the Company focused on approaching independent analysis houses, including participating in public events promoted by the segment, in addition to prioritizing the simultaneous publication in Portuguese and English of financial information and those of interest to the market.



EMPLOYEES

Main themes

- People management practices;
- Labor conditions;
- Freedom of association and collective bargaining;
- Health, safety and quality of life;
- Benefits.

Main channels

- Daily Security Dialogues;
- Internal communication channels;
- Corporate Events;
- Structured feedback tools;
- Employee Commissions (per unit).

COMMUNITY

Main themes

- Actions aimed at territorial development;
- Support for social projects;
- Job vacancies;
- Vacancies in courses;
- Monitoring of processes aimed at managing impacts on operations;
- Education and environmental recovery.

Main channels

- Social Agenda;
- Socio-environmental programs;
- Technical visits;
- Volunteer actions;
- Events;
- Tools for receiving and analyzing requests for support / sponsorship.

INVESTORS

Main themes

- Results (business performance);
- Market analysis;
- Good ESG (Environmental, Social and Governance) practices;
- Partnerships signed.

Main channels

- Ordinary and Extraordinary General Meetings;
- Conference Calls;
- Periodic meetings with investors and market representatives;
- Quarterly earnings press releases;
- Investor Relations (IR) communication channels.

SUPPLIERS

Main themes

- Trade policies;
- Access to the Supplier Portal;
- Registry;
- Opportunities for local communities;
- ESG Factors.

Main channels

- Supplier Portal;
- Technical visits;
- Satisfaction surveys.

SECTORAL ASSOCIATIONS

Main themes

- Environmental practices;
- Projects for community development;
- Governance aspects;
- Regulatory issues;
- Innovation.

Main channels

- Meetings and sectoral meetings;
- Participation in governance agencies, federations and agencies.

CLIENTS

Main themes

- Trade policies;
- Production and generation data;
- Quality standard;
- Greenhouse Gas Emissions;
- ESG Factors.

Main channels

- Technical visits;
- Service categorized by portfolio;
- Satisfaction surveys.

GOVERNMENT AND REGULATORY BODIES

Main themes

- Respect for legislation;
- Social projects and contributions by Tax Incentive Laws;
- Waste management;
- Water resources management;
- Land issues.

Main channels

- Compliance with the offices and regulations;
- Meetings, surveys and inspections;
- Formal communications.



PRESENCE IN ENTITIES AND ASSOCIATIONS

GRI 2-28

Aiming to strengthen corporate structures, we participate in 22 sectoral associations, multidisciplinary councils, federations and other forums of institutional representation that aim at sustainable socioeconomic ethical development. These channels create opportunities for dialogue with their peers and society, intensify engagement with the various interest groups and maintain permanent alignment with the trends and institutional agenda of the sectors in which they operate.



LIST OF ASSOCIATIONS

- American Chamber of Commerce for Brazil - AMCHAM;
- Bahia Association of Planted Forests - ABAF;
- Brazilian Association of Wind Energy - ABEEÓLICA;
- Brazilian Association of Producers of Ferroalloys and Metallic Silicon - ABRAFE;
- Association of Large Energy Consumers and Free Consumers - ABRACE;
- Association of Users of the Ports of Bahia - USUPPORT;
- Itapicuru Water Basin Committee - CBHI;
- Recôncavo Norte and Inhambupe Water Basin Committee - CBHRI;
- Water Allocation Monitoring Committee - Andorinha Dam II;
- State Board of Water Resources - CONERH;
- State Council of the Environment - CEPRAM;
- Entre Rios Environment Council;
- Esplanade Environment Council;
- Maracás Environment Council;
- Environmental Council of Mata de São João;
- Sustainability Council of the Federation of Industries of Bahia - FIEB;
- Management Council of APA - North Coast;
- Municipal Council for the Defense of the Environment of Pojuca - COMDEMA;
- Bahian Forum on Global Climate Change and Biodiversity - FBMC-Bio;
- Mining Working Group of the Federation of Industries of Bahia - FIEB;
- Brazilian Mining Institute - IBRAM;
- Union of Forestry Companies of the State of Bahia - SINEFLOR;
- Union of Extractive Industries of Metallic Minerals, Noble and Precious Metals, Precious and Semiprecious Stones and Magnesita in the State of Bahia - SINDIMIBA;
- Union of Metallurgical, Mechanical and Electrical Material Industries of the State of Bahia - SIMMEB.

Innovation

For Ferbasa, to innovate is to encourage the way of thinking that is ahead of our time, ensuring the reliability, longevity and competitiveness of the Company.

In 2022, an Innovation Board was created with the challenge of seeking initiatives that make the company increasingly competitive, optimize processes and stimulate professionals with a vision of the future. The new area was integrated into the New Business department with the objective of enhancing the shared value generated by the Company for society and, at the same time, mitigating impacts on the business.

One of the most relevant internal activities related to the subject is the investment in feasibility studies aimed at the use of tailings as remineralizers and in process automation, with emphasis on the modern drilling equipment used in the underground mine of Ipueira that, through the use of advanced technology, provide more safety and comfort to workers.

Focus on innovation

- sustainable production
- automation
- energy efficiency



EMBRAPII DAY FOSTERS NEW PARTNERSHIPS

To provide an opportunity for a guided debate on the processes of disruption and continuous improvement, Ferbasa promoted the Embrapii Day workshop, a partnership with the Brazilian Industrial Research and Innovation Company (Embrapii Portuguese acronym that stands for Empresa Brasileira de Pesquisa e Inovação Industrial). The event was attended by all the Company's managers and specialists from Embrapii, Cimatec, the Institute of Research in Technology (IPT, Portuguese acronym that stands for Instituto de Pesquisas em Tecnologia, in São Paulo) and the University of Viçosa.

FERBASA INSIGHT

During the year, the Company's first open innovation call was launched, with the challenge of finding viable alternatives that reduce bio-reducer fines in the Forestry unit. The initiative, a partnership with the Federal University of Viçosa - UFV, through the Society of Forest Investigations - SIF, had a phase of internal awareness in the Company itself and dissemination of the theme in 65 undergraduate courses, 25 graduate courses and 206 research groups from all over the country. In the end, seven startups presented works considering criteria such as adequacy to the problem and innovation.



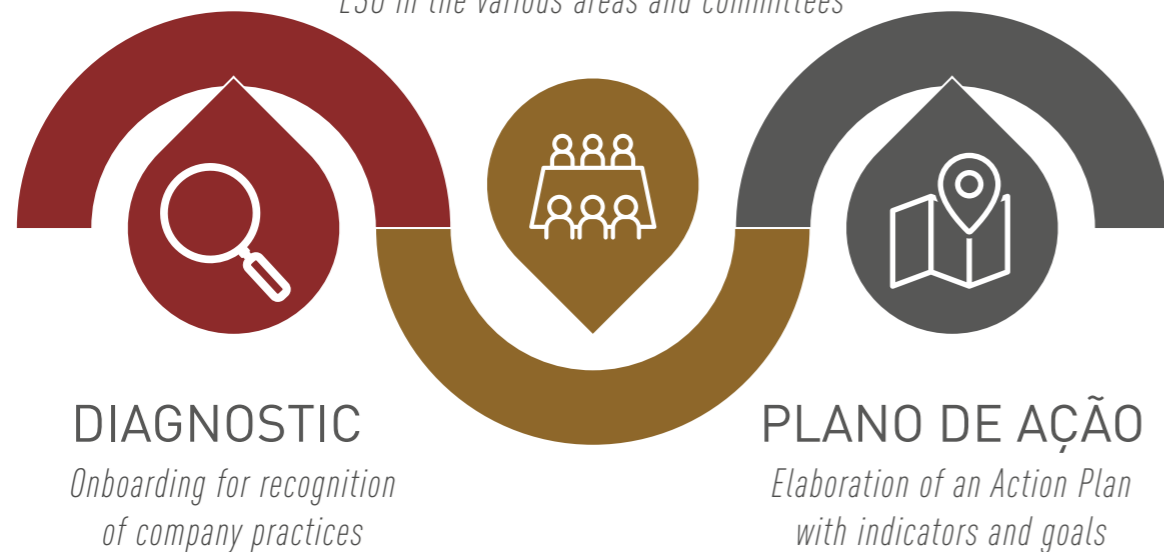
ESG Agenda

To organize internal initiatives and to know the vision of the various audiences on the company's positioning, an independent consultancy carried out a diagnosis on the environmental, social and governance issues. Based on this document, roadmaps were built that compose a structured agenda with a view to the evolution of internal indicators and achievement of goals by 2025.



GOVERNANCE AND POSITIONING

Roles and responsibilities on the agenda ESG in the various areas and committees



A package with 40 actions categorized by priority, effort and deadline for implementation was approved, thus segregated:

ENVIRONMENTAL - 16 ACTIONS

Establish roles and responsibilities regarding environmental management and risks.

- Natural Resources Management
- Waste, Effluents and Emissions
- Climate Change

SOCIAL - 12 ACTIONS

Establish roles and responsibilities regarding management and social risks.

- Relationship with employees
- Relationship with suppliers

GOVERNANCE - 12 ACTIONS

Establish roles and responsibilities for Corporate Governance.

- ESG integration into the Strategy
- Transparency and Management
- Integrity

In addition, 05 actions were incorporated in the theme of transparency, with the objective of reporting ESG information internally and externally in a transparent way and with a more robust communication regarding practices and results.



Materiality

GRI 3-1/ 3-2

The materiality matrix established in 2021 was maintained in 2022 in line with the guidelines of the Global Reporting Initiative (GRI), as it considered valid and pertinent the themes defined at the time. All the topics listed have repercussions inside and outside the Company, being reflected in its strategy and management, according to the social, environmental and economic impacts arising from its activities.

In the process of defining the matrix, interviews were conducted with some of the main stakeholders – directors, executive directors, managers, specialists, community leaders and employees, who also participated in the online consultation stage, which extended to shareholders and investors, customers and suppliers. Altogether, 261 respondents participated in this stage.



Material themes:

1. Waste management;
2. Local communities;
3. Attraction, retention and development of human capital;
4. Governance, transparency, ethics and compliance;
5. Energy resources;
6. Water resources;
7. Fair working practices, health and safety.

Human Capital Management

GRI 2-17

The Company believes that people are its main capital.

Ferbasa’s culture is directed to the development of its human capital as a vector of organizational excellence. To this end, the Company fosters a healthy, challenging, innovative, diverse, opportunity-rich environment that respects human rights. In this sense, it makes content available on learning platforms, that are accessible and relevant, to enable employee’s protagonism and self-development.

Highlight for the incentive to the participation of employees in continuous improvement projects (Quality Control Circle) and the inauguration of the My Doctor Novamed clinic (see more in Health and Safety, page 55).

In accordance with the objective of offering safe and healthy working conditions, it adopts quality of life programs, a remuneration package compatible with the market standard, provides training and maintains active dialogue with Internal Employee Committees and Unions.



INAUGURATION OF THE JOSÉ CARVALHO MEMORIAL

On July 23, the date of the 47th anniversary of the José Carvalho Foundation and an opportunity to celebrate the 60th year of Ferbasa, the José Carvalho Memorial was inaugurated, intended to disseminate the historical milestones of the life of the Founder of both companies and all his humanist legacy.

Bridge between the past and the new generations of ferbasers, the Memorial is a pole of dissemination of organizational and educational culture, mainly for students and employees of the José Carvalho Foundation and Ferbasa, but also for others interested in knowing in detail the achievements of the engineer who became famous for the life dedicated to education, as a way of giving back to society all that it has achieved by receiving free quality training during childhood and youth.



In the museum will be held temporary exhibitions on educational, social and cultural themes, while the permanent collection is distributed in three modules:

FERBASA WARD

It presents the history of the company since its foundation in 1961, through an exhibition of a vast collection of images that trace back the construction and expansion projects, the relevance of the people to the projects and the value of the institution for Bahia.



JOSE CARVALHO WARD

It portrays the trajectory of the boy born in 1931, in the town of Martinho Campos, Minas Gerais, his academic life until his training in Mining, Metallurgy and Civil Engineering, his career as one of the largest entrepreneurs and social investors in the country.



FOUNDATION WARD

Dedicated to the history of the José Carvalho Foundation, nationally recognized for its relevance to Bahia as a center for creating social opportunities through education.



Employees' Profile

GRI 2-7/ 2-8

- **3.189** direct employees
- **1.724** indirect employees
- **18** executives in governance departments
- **9,7%** of the employees are women
- **207** new direct employees admitted in 2022
- **5,1%** turnover rate
- **4,5%** of apprentices, *trainees*



Number of employees per town (BA)			
Município	2020	2021	2022
Pojuca	1.413	1.395	1.404
Salvador	113	113	121
Campo Formoso	187	189	204
Andorinha	1.006	1.021	1.055
Euclides da Cunha	47	47	51
Rafael Jambeiro	8	4	-
Tucano	21	22	25
Entre Rios	149	151	154
Esplanada	85	89	90
Mata de São João	57	57	55
Maracás e Planaltino	16	15	15
Ipirá	-	-	15
Total	3.102	3.103	3.189

Employee information, by gender									
	2020			2021			2022		
	Man	Women	Total	Man	Women	Total	Man	Women	Total
Permanent employees	2.725	217	2.942	2.740	217	2.957	2.820	234	3.054
Temporary employees	91	69	160	88	58	146	82	53	135
Total	2.816	286	3.102	2.828	275	3.103	2.902	287	3.189
Employees without a guarantee of hours			-			-			-
Full-time employees	2.719	217	2.936	2.736	215	2.951	2.816	232	3.048
Part-time employees	97	69	166	92	60	152	86	55	141
Total	2.816	286	3.102	2.828	275	3.103	2.902	287	3.189

Employee information, by region ¹				
		2020	2021	2022
Permanent employees	Northeast Region	3.102	3.103	3.189

¹ The increase in the number of employees occurred especially in mining activities: mineral research and prospecting and recomposition of shifts in the subsoil of the Ipueira mine.



Diversity

405-1

Our stimulus is to maintain an equitable and inclusive environment, with space for the various human representations, where people feel challenged to expand their consciousness in search of personal and professional growth.

Respect for the individual, their singularities and personal choices have always been part of Company values. Thus, the plurality of our people makes FERBASA a company naturally inclusive and diverse. In the way to expand knowledge about these countless representations, from June to August the first diagnosis on diversity, equity and inclusion was carried out.

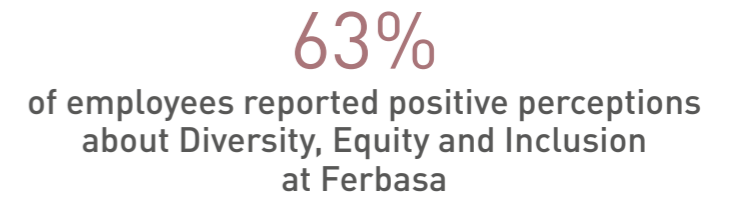
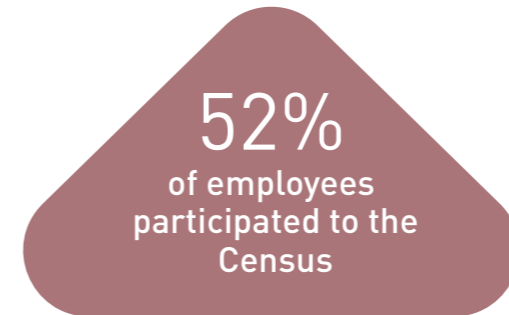
The study, conducted by an independent consultancy, showed that, despite the degree of receptivity to gender multiplicities in the selection processes, the Company operates in a traditionally male market. This reality reflects the prevalence of employees of this gender in the operational units. Another issue proven by the study was the self-declaration of black and brown collaborators, which reached 80%.

The census had the participation of 52% of the direct collaborators and 63% of this public reported positive perceptions on the subject.

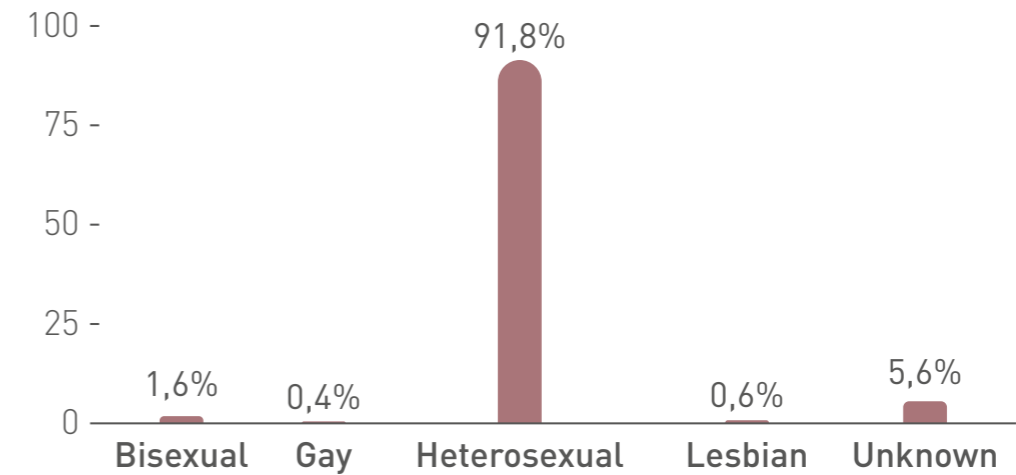
The diagnosis culminated in the development of roadmaps that, among other objectives, seek to expand the repertoire of all employees on topics related to diversity, equity and inclusion.

Employees by age group			
Age group	2020	2021	2022
Under 30	531	542	507
Between 30 and 50 years	2.100	2.093	2.140
Over 50 years	471	468	542
Total	3.102	3.103	3.189

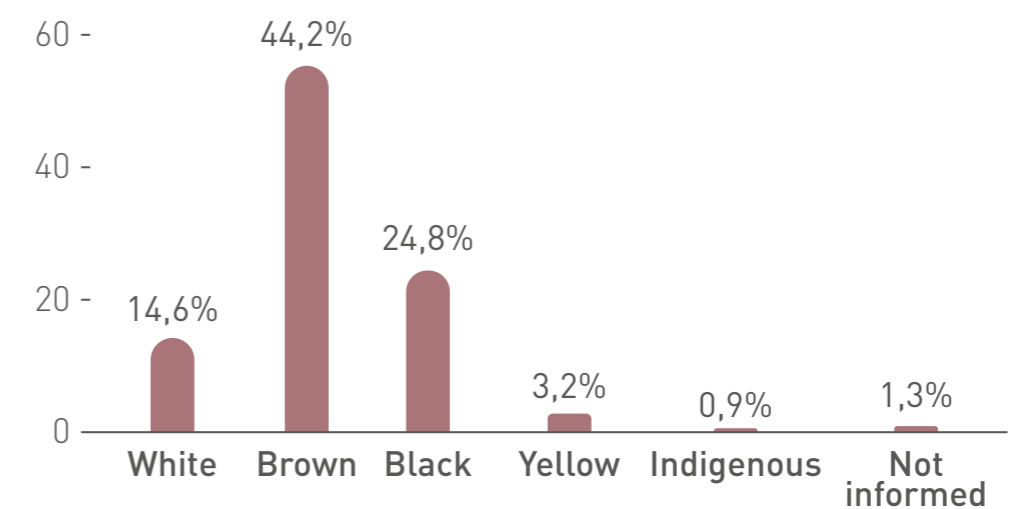
PCD X Total Roster			
Faixa etária	2020	2021	2022
Total staff	2.942	2.957	3.054
PCD	157	157	153
%	5,34%	5,31%	5,01%



SEXUAL ORIENTATION



RACE



EMPLOYEES BY FUNCTIONAL CATEGORY

Total employees			
Labor Category	2020	2021	2022
Management	25	33	35
Leadership/Coordination	54	52	54
Technical/Supervision	227	236	264
Administrative	409	399	414
Operational	2.387	2.383	2.422
TOTAL	3.102	3.103	3.189

THE FIRST WOMAN IN THE FERBASA OPERATION

The first woman to be part of the company's operational staff, in 1978, Mrs. Arlinda broke barriers. Married to a servant of the Company, who fell ill, she put on her husband's clothes and went to work in his place. Initially, due to the safety clothing, the colleagues did not notice the ingenious exchange. But in a short time, the presence of Mrs. Arlinda was discovered and many requested her withdrawal from the operation, on the grounds that this

work would be too hard for a woman. José Carvalho himself went to talk to Mrs. Arlinda, hiring her for the activity, because her performance was as good as that of her husband..



Training and Development

GRI 404-1 GRI 3-3/404-2

Our leadership is continuously qualified and stimulated to act in favor of the evolution of the potential of the members of its teams, either through training aimed at improving technical knowledge, skills or attitudes. In this context, they have at their disposal for the work of personnel management tools of continuous feedback and Individual Development Plans (PDIs Portuguese acronym that stands for Planos de Desenvolvimento Individuais) that help in directing the expectations of professionals and leverage the achievement of corporate objectives.

Investment in training grew by 15.45%, compared to 2021. 54,855.90 hours of training were performed, a quantity 15.08% higher than the previous year, with a positive impact on the safety, quality and efficiency of the processes.

In the period, safety actions were responsible for 23% of the total training performed, with emphasis on:

SECURITY BEHAVIORAL LEADERSHIP TRAINING PROGRAM

The leadership participated in this initiative, focusing on raising awareness of the relevance of the teams' behavioral aspects in the set of fundamental safeguarding factors for the Company.

2.600 hours
137 leaders

Theme: psychosocial risks and their articulations with the healthy occupational and security practices.



Trainment	Goal	Number of employees trained	Training hours	Units
Risk Management and Perception	Expand the critical analysis of risks and control measures, as well as behavioral activators for the perception of environmental risks and labor processes	723	2,892	Forestry and Mining
Safety Culture Transformation Workshop	Sensitize all leadership to the importance of their role as security protagonists	223	892	Metallurgy, Forestry and Mining
Security Awareness Workshops	Raise awareness about the importance of developing work in a safe way and have a safe attitude	1,172	4,688	Metallurgy and Forestry
TOTAL		2,118	8,472	

TALENTS IN DAY

Developed to enhance talents through the systematic monitoring of technical and behavioral skills, the program allows the manager to have a managerial overview of his team, aiming at professional development, continuing education and reinforcement of Culture. In 2022, the stage of defining criteria and requirements of the positions and the evaluation of the employees who make up the top management was carried out, providing the survey of strategic information that will serve as a basis for the construction and analysis of the succession maps. In the year, 42 leadership positions were mapped (Block 1) and in 2023, the program will reach a greater scope, also involving the coordination and several positions of higher level (Blocks 2 and 3).

Block 1:
Board of Directors, Superintendence, Managers and equivalent positions
42 people involved
42 mapped positions

Block 2:
Coordination and equivalent positions
62 people involved
58 positions being mapped

Block 3:
Higher level professionals such as analysts, engineers, geologists, lawyers, auditors, doctors and trainees
127 people involved
89 positions being mapped



TOP MANAGEMENT DEVELOPMENT PROGRAM

In order to support professionals who are transitioning to more complex leadership positions, the program seeks acculturation and obtaining the systemic/strategic vision of the business. The public receives training in the various perspectives of management and, transversally, the individual development plans are revisited, with the realization of planned interactions to analyze the evolution of competencies.

SaberEAD PLATAFORM

SaberEAD, through a digital platform, it made available specific content on leadership for our managers, allowing employees to create study groups on the topics, bringing as innovation the use of a hybrid learning methodology.

During the year, the following topics were addressed:

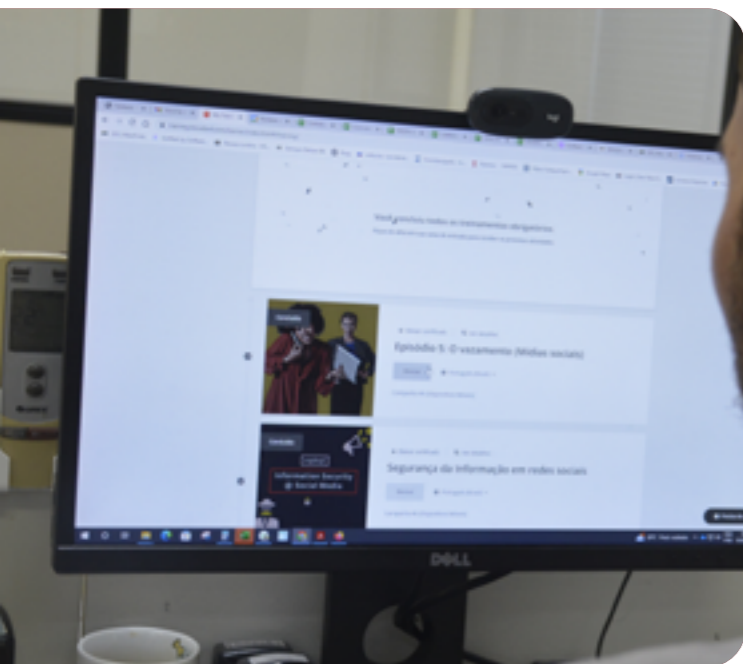
- Feedback,
- Individual Development Plan,
- Communication
- Emotional intelligence,
- Persuasion and influence
- Creativity and innovation.



AVERAGE HOURS OF TRAINING PER EMPLOYEE, BY LABOR CATEGORY

Labor category	2020			2021			2022			Δ 2021/2022	
	Total number of employees	Total hours	Average hours	Total number of employees	Total hours	Average hours	Total number of employees	Total hours	Average hours	Total hours	Average hours
Management	25	144,6	5,8	33	776,1	23,5	35	1.784,3	51	129,9%	116,8%
Leadership/Coordination	54	514,8	9,5	52	1.367,3	26,3	54	2.084,5	38,6	52,5%	46,8%
Technical/Supervision	227	2.905,6	12,8	236	5.959,6	25,3	264	7.256,3	27,5	21,8%	8,8%
Administrative	409	3.425,7	8,4	399	4.102,8	10,3	414	6.666,3	16,1	62,5%	56,6%
Operational	2.387	27.037,5	11,3	2.383	35.407,1	14,9	2.422	37.064,6	15,3	4,7%	3%
Total hours of training¹	3.102	34.028,1	11	3.103	47.612,8	15,3	3.189	54.855,9	17,2	15,2%	12,1%

¹ We had a variation of 15.2% of HH in training compared to the previous year. This is the result of the resumption of in-person training, interrupted during the pandemic. It is also the result of the continued use of online courses, an alternative that enables training without the need for travel.



YOUNG APPRENTICE

The Young Apprentice program offers the opportunity of first professional experience to young people between 18 and 22 years old. Carried out in partnership with the National Service of Industrial Learning (Senai), the vacancies are primarily directed to the children of employees and young people from the communities surrounding the operational units.

145 young people in activity
3.231 enrolled in the selection process

TRAINEES

The goal of the program is to train new professionals in the most diverse careers, through the combination of practical experiences and theoretical knowledge.

06 young professionals recently graduated
1.397 enrolled in the selection process

Segment	Career	Registered
Mining	Electrical Engineering	150
	Civil engineering	135
	Mining Engineering	185
Metallurgy	Electrical, Mechatronics or Automation Engineering	226
	Mechanical or Industrial Engineering	580
Forest	Forest Engineering	121



INTERNSHIP

Our Internship Program offers opportunities for young professionals, from different areas, to develop skills and to experience academic content in practice acquired. The Program resumed its activities in 2022, after remaining suspended during the pandemic. During the period, students were selected in the capital of Bahia and in the towns of Andorinha, Campo Formoso, Catu and Pojuca.

31 interns selected in 2022
16 men
15 women
830 registered in the selection process



COMPENSATION AND BENEFITS

GRI 2-19 / 401-2

In order to ensure the ability to attracting and retaining talent, Ferbasa's salary and benefits policy also encourages professional recognition. In this sense, the evaluation of its competitiveness in the labor market is made, periodically, by specialized consultancies.

Gender equity is also reflected in the salary policy, as there are no differentiations in base salaries between men and women in the same function. The competitive package of benefits includes extensive medical and dental care for direct dependents, scholarships, group life insurance, private pension plan, childcare allowance, restaurants in the operating units,

transportation and food assistance, personal accident insurance and vacation premium.

In addition, partnerships are established with educational institutions and service providers, which grant discounts to employees (the list of partner companies is available on the Intranet and is disclosed in internal communication vehicles). For employees with at least two years in the Company, there is also an incentive for professional and educational training with a subsidy of 50% of the value of postgraduate and/or language courses.

PROFIT SHARING PROGRAM (PLR – PORTUGUESE ACRONYM THAT STANDS FOR PROGRAMA DE PARTICIPAÇÃO NOS LUCROS E RESULTADOS)

The program reaches all employees and seeks to stimulate proactive participation for better results. The annual goals follow agreements signed between the company and the committees of representatives of the employees of each unit, which includes a member of their respective union.

VARIABLE COMPENSATION PROGRAM

Established as a way of engaging leaders in meeting the objectives of strategic planning, the program includes executive positions and has as a trigger net revenue and adjusted EBITDA. Annually, sustainability goals, strategic

projects, operational and economic efficiency are established; health and safety performance; and the results of the Competency Management Program.

NEW EMPLOYEE RATE AND TURNOVER

GRI 401-1

Traditionally, Ferbasa registers low employee turnover rates, the result of the culture of valuing human capital in line with the management and selection practices of people that prioritizes the internal ascension, the use of local labor at all hierarchical levels, retention and continuing education.

Turnover rate			
Gender	2020	2021	2022
Male	0,04	0,07	0,05
Female	0,00	0,03	0,01
Total	0,04	0,10	0,05

Note. The total turnover in 2021 stems from the termination and start of contracts of the Young Apprentice program - cycles 2019/2021 and 2021/2023.



In 2022, of the 405 open positions, 198 were filled by employees of their own staff. This total represented a utilization of 49% of employees in selection processes developed by the Company to meet the demands caused by staff expansion and replacement, changing structure and career programs. The average *turnover* was 5.14%, accounting for a total of 121 disconnected, between spontaneous and deliberate exits by the Company.

In the indicators of admission, dismissal and *turnover* are considered the apprentices, interns and *trainees*, who integrate specific programs.

New hires, by age group						
Age group	2020	%	2021	%	2022	%
Under 30	68	48,57%	244	81,61%	109	52,66%
Between 30 and 50 years	71	50,71%	55	18,39%	96	46,38%
Over 50 years	1	0,71%	0	0%	2	0,97%
Total	140	100%	299	100%	207	100%

New hires, by gender						
Gender	2020	%	2021	%	2022	%
Male	121	86,43%	222	74,25%	25	12,08%
Female	19	13,57%	77	25,75%	182	87,92%
Total	140	100%	299	100%	207	100%

New hires, by region

Region	2020	%	2021	%	2022	%
Northeast	140	100%	299	100%	207	100%

Turnover, by age group

Faixa etária	2020	%	2021	%	2022	%
Under 30	118	91,47%	210	70,71%	31	25,62%
Between 30 and 50 years	11	8,53%	87	29,29%	64	52,89%
Over 50 years	0	0%	0	0%	26	21,49%
Total	129	100%	297	100%	121	100%

Turnover, by gender

Gender	2020	%	2021	%	2022	%
Male	118	91,47%	210	70,71%	107	88,43%
Female	11	8,53%	87	29,29%	14	11,57%
Total	129	100%	297	100%	121	100%

Turnover, by region

Region	2020	%	2021	%	2022	%
Northeast	129	100%	297	100%	121	100%

Health and Safety

GRI 2-24/ 3-3/ 403-1/ 403-2/ 403-3/403-4/403-5/403-6/403-7/ 403-8

The health and safety of *ferbasers* are non-negotiable values for the Company and are anchored by an Integrated Management System (IMS), which covers all its own employees and third parties. Its processes are consolidated and are constantly improved, with ISO 9001, ISO 14001 and ISO 45001 certifications ensured by Bureau Veritas (BV), covering, respectively, aspects of Quality, Environment and Health and Safety. These certifications are renewed annually after conducting internal and external audits.



CIPA carried out a series of initiatives in favor of the dissemination of the safety culture, with emphasis on the Educational Blitz, which sought to sensitize motorcyclists to the aspects of defensive driving.

HEALTH AND SAFETY STRUCTURE:

- Internal Accident Prevention Commissions (CIPA – Portuguese acronym that stands for Comissões Internas de Prevenção de Acidentes)
- Specialized Services in Safety Engineering and Occupational Medicine (SESMTs Portuguese acronym that stands for Serviços Especializados em Engenharia de Segurança e em Medicina do Trabalho)
- Emergency Brigades in all units.

The groups work independently, depending on the differences in the activities and characteristics of each unit and region.

The control and registration of occurrences are handled corporately by the 18 multisectoral committees, which meet periodically to discuss incidents and discuss preventive practices. A total of 216 meetings were held during the year, in an interdisciplinary manner and with a diversity of hierarchies, which allowed managers to present the indicators, goals, objectives, status of the activities of the areas and respective action plans, when applicable. The behavioral approach indicator, in turn, reaches all the managers of the operational areas and translates the importance of caring for the other.

INTEGRATED MANAGEMENT POLICY

The Integrated Management Policy aims to ensure the protection of the health of direct and indirect employees and their safety. Its regulations are oriented to: ações de adequação ambiental;

- Environmental Adequacy Actions;
- Safeguard measures implemented in the units;
- operational improvements;
- Investments in updated protective equipment for the teams;
- Safety training;
- Contingency coping plans.

The safeguard items receive constant investments and act in the elimination of risks of injuries or fatalities, notably those related to NR 10, 12 and 35.

2022 ACTIVITIES:

- Continuity of projects that implement protections in machinery and equipment;
- Adequacy of workstations at height;
- Installation of lifelines and anchor points in buildings (certified by international standards);
- Implementation of Fire and Panic Fighting projects in the Metallurgy and Mining units, scheduled for completion in 2023.

The anti-collision system, on the other hand, aims to bring greater safety to the traffic of trucks and loaders within the perimeter of the units. Implemented in the processing plant, it ensures the integrity of all employees directly exposed to this risk, who uses a tag connected to a link that detects the approach and performs the blocking of the equipment, regardless of the direct action of the operator.

GRI 403-8

Workers covered by the occupational safety and health management system	2020	2021	2022
Number of workers covered by the system	3.928	4.194	4.760
Percentage of workers covered by the system	100%	100%	100
Number of employees covered by the system with internal audit	3.585	3.850	4.322
Percentage of workers covered by the system with internal audit	91%	91,8	90,8%
Number of employees covered by the system with external audit	3.585	3.850	4.322
Percentage of workers covered by the system with external audit	91%	91,8%	90,8%

Note: Minas Pedrinhas, Damacal, Quartzo and Itiúba do not have compliance certifications and, therefore, their own employees and third parties were excluded from the table above.



Health and Safety Indicators

GRI 403-9

Global accident frequency rates are historically adherent to international references. On a monthly basis, the Executive Board and the Board of Directors monitor the indicators related to the occurrence of accidents and their severity.

Segment	2021	2022
CAF Frequency	0,60	0,99
Severity	135	53
Frequency SAF	3,97	3,85

In the year there was an increase in the rate of accidents with lost time when compared to 2021. Despite the increase in the frequency rate, the significant drop in the severity indicator demonstrates that the occurrences of the year were of lower severity and that the annual goal of maintaining the numbers below 500 was achieved. On the other hand, the rates of accidents without time off follow a downward trend.

We pursue, year after year, to extinguish the risks of our operations and eliminate high-potential occurrences in all activities.

A set of actions were planned for 2023 based on the evaluation of the history of accidents and near misses of recent years and focusing on the pillars of behavioral safety, environmental conditions, standards and procedures. The goal is to expand the mechanisms for safeguarding people.



GRI 403-9

Information for employees	2020	2021	2022
Number of deaths resulting from an accident at work	-	-	-
Rate of deaths resulting from occupational accidents	-	-	-
Number of occupational accidents with serious consequences (except deaths)	2	5	9
Rate of occupational accidents with serious consequences (except deaths)	0,28	0,7	1,22
Number of notifiable accidents at work	37	37	44
Rate of accidents at work of mandatory communication	5,2	5,19	6
Number of hours worked	7.102.728,23	7.124.650,38	7.325.888,83

Information for hired	2019	2020	2021	2022
Number of deaths resulting from an accident at work	-	-	-	-
Rate of deaths resulting from occupational accidents	-	-	-	-
Number of occupational accidents with serious consequences (except deaths)	1	-	-	2
Rate of occupational accidents with serious consequences (except deaths)	0,46	-	-	0,54
Number of notifiable accidents at work	8	12	9	10
Rate of accidents at work of mandatory communication	3,71	4,2	3,19	2,72
Number of hours worked	2.153.797,67	2.816.688,78	2.816.687	3.675.662

RISK PERCEPTION

Sensitization, management and risk perception workshops were held with the objective of broadening the critical analysis on the subject and its control measures, as well as reinforcing the behavioral activators for the perception of environmental risks.

2.200 employees

11.000 hours of training/training

BEHAVIORAL APPROACHES TO SAFETY (ACS – PORTUGUESE ACRONYM THAT STANDS FOR ABORDAGENS COMPORTAMENTAIS DE SEGURANÇA)

The Behavioral Approaches to Safety were directed to the identification of opportunities for improvement and the change of attitude to reinforce the promotion of safe behavior.

10.280 ACS executed

QUALITY CONTROL CIRCLE (CCQ – PORTUGUESE ACRONYM THAT STANDS FOR CÍRCULO DE CONTROLE DE QUALIDADE)

Started in 2016, the Quality Control Circle (CCQ) reached its 5th cycle in 2022, keeping the stimulus to the development of solutions aimed at continuous improvement high. The project is premised on increasing the levels of collective engagement, creating a space where employees can use and abuse creativity and ensure the low cost of implementation.



CYCLE 2021-2022

09 propositions were developed by the groups;

65 Participating employees

2.656 hours of training in advanced quality tools and processes

R\$ 105 mil in investments

R\$ 1,18 milhão invested in the replication of projects

R\$ 4 milhões Return on investment

Over the last 6 years, the change in participants' mindset has overwhelmed financial and operational results, with employees who began to act as multipliers of a culture focused on combating waste, eliminating risks and efficiency. In addition, other non-measurable gains marked the period, such as the level of

satisfaction of employees and internal customers, the standardization of processes, the optimization of time, the reduction of the risk of accidents and production losses, the reduction of rework and environmental impacts.

	Number of employees trained	Project investment (R\$)	Replication Investment (R\$)	Updated measurable return (R\$)
1st cycle (2016/2017) 7 teams	49	41.293,0	65.120,0	331.864,0
2nd cycle (2017/2018) 12 teams	80	294.592,0	584.981,0	3.025.085,0
3rd cycle(2018/2019) 10 teams	70	205.726,0	490.000,0	799.254,0
4th cycle(2019/2020) 10 teams	68	125.022,0	1.287.747,8	4.591.642,5
5th cycle (2021/2022) 9 teams	65	105.044,8	1.174.783,2	4.218.105,0

Health and safety campaigns

Monthly, corporate actions are carried out aimed at disease prevention and health promotion, based on the national calendar of the Ministry of Health. In 2022, initiatives such as:

10 lives with invited doctors with a reach of 600 employees per initiative.

02 walks carried out with 250 participating employees

500 male and female condoms distributed in the operational units during Red December

2.952 employees vaccinated against covid-19 and flu.

LIVE+ (ORIGINAL NAME IN PORTUGUESE VIVA+)

A program aimed at promoting the health and physical and mental well-being of employees, **Live+** offers technical and playful interventions to stimulate healthy habits, with clinical follow-up of specific groups and actions to disseminate/raise awareness about the importance of prevention for quality of life.



The fronts of action include educational campaigns, which cover both employees and their families, and individualized medical care, including psychological, provided by specialists from various areas.

The **Live+** programming includes the monitoring of 100% of patients with chronic diseases, nutritional monitoring, psychological assistance and psychosocial guidance, work gymnastics sessions, as well as initiatives such as:

VIK

The Vik app was launched in 2022 as part of the Viva+ program. The gamification proposal of the App stimulates the practice of physical activities in a fun way, by bringing challenges to groups of employees, who receive awards, in addition to using the application as a space for socialization, where it is possible to enjoy the photos and activities of colleagues, exchange messages and monitor the performance in sports practices.

More than 600 employees benefited

92 prizes distributed

300 employees reported on the start of regular physical activities.

MOTHER'S LOVE PROGRAM (ORIGINAL NAME IN PORTUGUESE PROGRAMA AMOR DE MÃE)

Aimed at pregnant women (collaborators and dependents), the program performs multiprofessional monitoring, with guidance to the future mother on the care of her health and that of the baby. The new mothers enroll voluntarily and enjoy exemption from the co-participation of all examinations and consultations related to pregnancy.

69 Families benefited



Integral Health

MY DOCTOR NOVAMED

In 2022, the My Doctor Novamed clinic was inaugurated, a modern and fully equipped structure, located in the town of Pojuca, exclusively for the care of employees of Ferbasa (Metallurgy and Forestry), José Carvalho Foundation and their dependents.

The medical center offers consultations without co-participation in the health plan in the specialties of gynecology, cardiology, psychology, ophthalmology, family medicine and physiotherapy, emergency care, low complexity procedures, as well as imaging and laboratory tests, such as x-ray, ultrasounds and electrocardiogram. The specialized team is prepared to perform a humanized service and close to the employees, taking care of health in an integral way.



Clients

Committed to customer satisfaction, Ferbasa closely follows the points of attention presented by the research on products and services.

The few observations related to price and flexibility in negotiations receive continuous supervision for the Company to maintain its high standard of service. Regarding chromite sand, there was a decrease in the score compared to the previous cycle due to the limitation of availability of the product for sale, due to its prioritization for internal use.

Another mechanism for monitoring occurrences involving stakeholders is the systematic control of complaints, monitored by the working group of the Integrated Management System. In the year, they were registered:

Customer satisfaction survey – 2022		
	Good and Great	
	2021	2021
Metallurgy (goal 90%)	97%	93%
Chromite Sand (goal 90%)	90%	85%



Suppliers

GRI 2-6

Ferbasa handles about **R\$ 930 million** in contracts signed with approximately **1,600 active suppliers**.

To foster regional development, local hiring is prioritized. During the year, 48% of the volume of resources were traded in Bahia, 31% in other states and 21% in other countries.

The supply chain encompasses providers of equipment, materials and services, and is divided into three main segments:

- Raw materials, inputs and auxiliary materials: electricity, coal coke, various ores, bioreducer, diesel oil, electrodic paste;
- Maintenance, repairs and operation (MRO): items of correction, improvement, monitoring and/or inspection, whether for mobile or fixed equipment;
- Equipment: varied assets.

A significant part of the raw materials, such as ores and bioreducer, come from Ferbasa itself. In the services segment, the main demands refer to forestry activities, transportation, leasing and maintenance.



Mechanisms of Complaints

Complaints	2020	2021	2022
Number of complaints identified through the mechanism	6	1	6
Number of complaints addressed	0	0	0
Number of complaints resolved	2	1	3
Number of complaints filed prior to the reporting period and resolved during this period	N/A	4	0

Environmental Management

GRI 3-3

Due to the relevance of socio-environmental issues for the future of life on the planet, especially considering the socioeconomic impacts of climate change and the scarcity of water resources for the next generations, Ferbasa continuously invests in management, equipment and systems, as well as in programs aimed at preserving biodiversity. The intention is materialize our vision of being a reference in sustainability through the adoption of best environmental practices, prioritizing preventive controls..

Thus, internal initiatives aim at eco-efficient operations and prioritize using Innovative solutions. The corporate work platform includes actions to reduce the capture and use of resources, whose indicators and goals are managed by the tools of the Integrated Management System, in accordance with ISO 14.001.

It is important to emphasize that the reuse of co-products is one of the Company's priority strategies, which has chosen from among its material themes the management of waste, energy and water resources.



INTENDED CO-PRODUCTS

Type of co-product	Destination	Quantity (t) 2021	Quantity (t) 2022
High carbon ferrochrome slag ¹	Aggregate material for civil construction	251.044,0	200.476,0
Microsilica or active silica	Aggregate material for civil construction	12.842,0	12.976,0
Quartz fines ²	Rehabilitation of local roads and industrial exploitation	30.077,0	6.638,0
Bioreducer fines	Industrial production chain	35.460,0	45.319,0
Slag of FeSi75 ³	Industrial production chain, internal use	6.742,0	12.466,0
		336.165,0	277.875,0

NOTE 1: The shutdown of the crushing plant for maintenance and modernization caused unavailability of the material and consequent reduction of its destination in 2022, compared to 2021. The process was optimized and achieved productivity and safety gains, noise reduction and greater energy efficiency.

NOTE 2: The campaign for the destination of quartz fines, carried out in 2021, provided a significant drop in the stock of the co-product. During 2022, the allocation was 74% of the annual generation, with the remainder of the volume kept in the company only for internal activities, including its commercialization and donation to communities.

NOTE 3: An action of interaction of the production processes made it possible that the co-product generated in plant 02 (production of FeSi75) in the year 2021 was used in 2022 in plant 01 (production of FeCr), with positive environmental impact on waste management.

The year 2022 was one of advances in the dedusting system of Metallurgy’s furnaces, whose purpose is to reduce fugitive emissions, causing a positive impact on air quality. The multi-year project is part of a package of actions aimed at optimizing the performance of emission control, including increasing the particulate retention efficiency of the installed filters.

Also underway at the Araticum Farm (Forest Unit), is the implementation of a technology that aims to reduce the emission of smoke from 28 furnaces directly into the atmosphere, through the burning of gases in a large plant. In addition to this result, the emission of CO2 will be avoided and the odor that today generates complaints from the surrounding communities will be reduced (*see more in Communities*), extinguishing it or making it almost imperceptible.

In the same unit, another action brought positive benefits: the evolution of the drainage system of the Limoeiro Farm eliminated the potential risk of liquid waste reaching a watercourse and thus enables the seasonal use of rainwater.

In Mining Ipueira there was no water abstraction in the Andorinha II Dam, due to the restriction on the availability of the resource, according to the New Regulatory Framework of the National Water Agency – ANA (Portuguese acronym that stands for *Novo Marco Regulatório da Agência Nacional das Águas*) (*see more in Water Resources, page 87*).

Forest area

The Forest Resources unit is essential for Ferbasa’s verticalized production chain and also for its environmental performance, due to the significant capture of carbon volumes from planted eucalyptus forests and the benefits of using the bioreducer to replace inputs of mineral origin.



In 2022, 3,000 hectares of forest were formed with the aim of ensuring sustainability in the supply of bioreducer for metallurgy in the long term.

Biodiversity

Adhering to the assumptions of sustainability, the Company preserves more than the 20% established by the legislation in extension of forest assets composed of protected native forests, including areas of legal reserve and permanent preservation. Of this total, 1,243 hectares (about 3070 acres) of approved areas as a Private Natural Heritage Reserve (PNHR – in Portuguese: RPPN – Reserva Particular do Patrimônio Natural), under the custody of Ferbasa, in perpetuity.

The recovery plan for degraded areas, which encompasses all production units, aims at plant regeneration, reintroduction of plants in their original biome and the production of seedlings of native species, through the process of seed collection, planting and cultivation for the reforestation of the surroundings of the operations.

With seedlings grown in nurseries, in 2022 about:

- **07 hectares** of vegetation in the caatinga biome, in former areas of controlled deposits of sterile material;
- **79 hectares** in the Atlantic Forest biome, with a focus on preserving and enriching natural forests, totaling 461.31 hectares since 2018.



In addition, other initiatives promote better performance in terms of biodiversity protection, such as:

RENEWABLE FORESTS CULTIVATED IN MOSAIC FORM

It allows the formation of corridors of native forests essential for the flow of animals, in which several species of wildlife are found.

ANNUAL ANIMAL LIBERATION CAMPAIGNS

An agreement signed with environmental agencies promotes the reintegration of species into their original habitat, in FERBASA areas. Over the years, 454 reintegrations of species such as *Aratinga aurea* (king parakeet), *Accipitridae Vigors* (hawk) and *Aratinga auricapillus* (red-fronted jandaia) have been carried out.

02 Wild Animal Liberation Areas – ASAS were registered with the Institute of Environment and Water Resources (INEMA, in portuguese)

RIPARIAN FOREST RECOVERY ACTIONS

Executed continuously in the Forest unit, the recovery activities will be expanded in 2023 to the other units, within the project of recovery of springs and riparian forests.

ENVIRONMENTAL PROTECTION

In avifauna surveys carried out in 2022, 132 species of birds present at Buri Farm were identified. Seven of them are indicated as endangered according to the IUCN1 Global List1 and the National List of the Ministry of the Environment2 (MMA, 2014), are: *Touit surdus*3, *Amazona rhodocorytha*4, *Herpsilochmus pileatus*5, *Pyriglena atra*6, *Automolus lammi* Zimmer7, *Procnias nudicollis*8, *Xipholena atropurpurea*9.

A curious fact that occurs in the region is the presence of the *Paroaria Dominicana*10, popularly known as cardinal-of-the-northeast (In Portuguese *Cardeal-do-nordeste*), an endemic species of the caatinga (Brazilian biome commonly translated as Brazilian Ouback, an allusion to the Australian biome). Although unusual, the occurrence of the bird in the Atlantic Forest biome may be associated with the degradation of its natural habitat or by its creation in captivity in areas close to the RPPN.

¹ [International Union for Conservation of Nature - 2018]
² [MMA, 2014]
³ [Kuhl, 1820]
⁴ [Salvadori, 1890]
⁵ [Lichtenstein, 1823]



The rich diversity found proves the relevance of maintaining native forests and the quality of the environment in our planted forests. At the same time, protective actions, such as the performance of the fire brigade, the sensitization of the communities carried out by the Environmental Education Program and the patrols of the patrimonial security are fundamental for the preservation to be a reality in the area. During the year, there was no record of any burning in the forests of Ferbasa.

38.450 seedlings of various species were donated to communities, municipal governments and collaborators as an action of the Environmental Education Program - PEA.

⁶ [Swainson, 1825]
⁷ 1947
⁸ [Vieillot, 1817]
⁹ [Wied, 1820]
¹⁰ [Linnaeus, 1758]

Genetic Improvement Program

The Company implemented an acclimatization system in the research nursery of the Araticum Farm to optimize the storage of forest gene matrices and avoid losses due to relevant climate change. The initiative, which enables controlled crosses between Eucalyptus and Corymbia species, aims to develop a more resistant genetic material better adapted to the production of bio-reducer.



Waste

GRI 306-1/306-2/ 306-3/306-4/ 306-5

From origin to final destination, Ferbasa must respect the Waste Management Policy, supervised by the By-Products and Waste Management Committee. The management of the topic is carried out by a technical team, supported by the Solid Waste Management Program (PGRS – Portuguese acronym that stands for *Programa de Gerenciamento de Resíduos Sólidos*) and the internal standard. The data is monitored daily, in a process that includes collection and storage equipment, as well as other practices of control of the quantity, generating source and classification. All measures implemented focus on non-generation, reduction, reuse, recycling and adequate final treatment of waste, prioritizing the alternatives of reuse, recycling and reverse logistics, in line with the National Solid Waste Policy (PNRS - Portuguese acronym that stands for *Política Nacional de Resíduos Sólidos*).

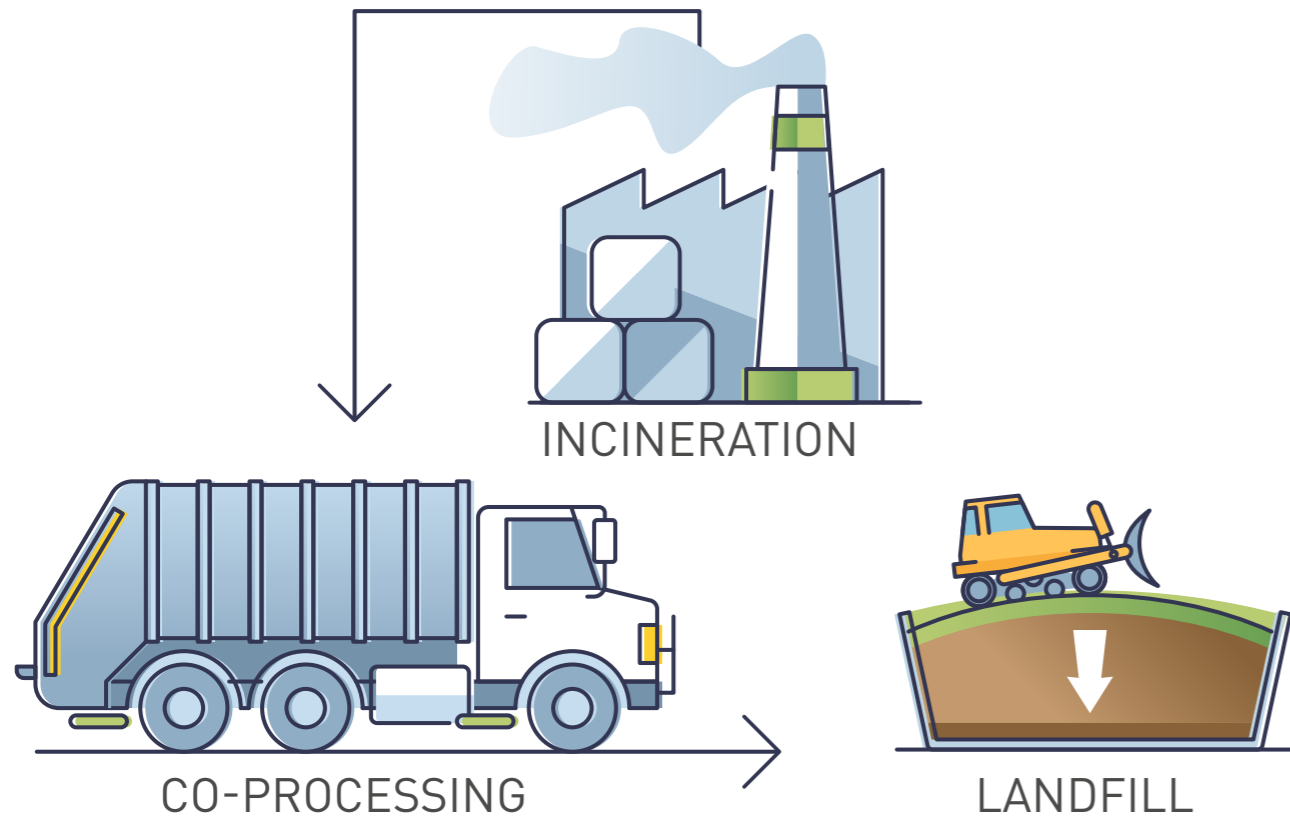
The cases of eventual environmental accidents with waste generation are treated by the committees of the Integrated Management System, prepared to act immediately in the evaluation of the occurrence and in the proposal of corrections and preventive measures, as recommended by ISO 14.001.

The By-Products and Waste Management Committee researches new alternatives to reduce the generation and/or transformation of waste into co-products.

SELECTIVE WASTE COLLECTION

After collection, the waste passes through storage centers before their final destination. The goal is to reduce generation globally, even though, in some units, such as Forest Resources, there is no production of large volumes. In the specific case of this area, the donation of organic residues of vegetation (tips, bark and branches) serves the neighboring communities. In addition to this action, another part of the waste is used in the recovery of the zones of extraction of sandy-clay material (gravel or clay) and applied in the internal roads.




The generation of inorganic waste contaminants is very low, compared to the complexity of the activities developed in the various units and the material is destined for proper treatment, in licensed companies, which use the latest technology available.



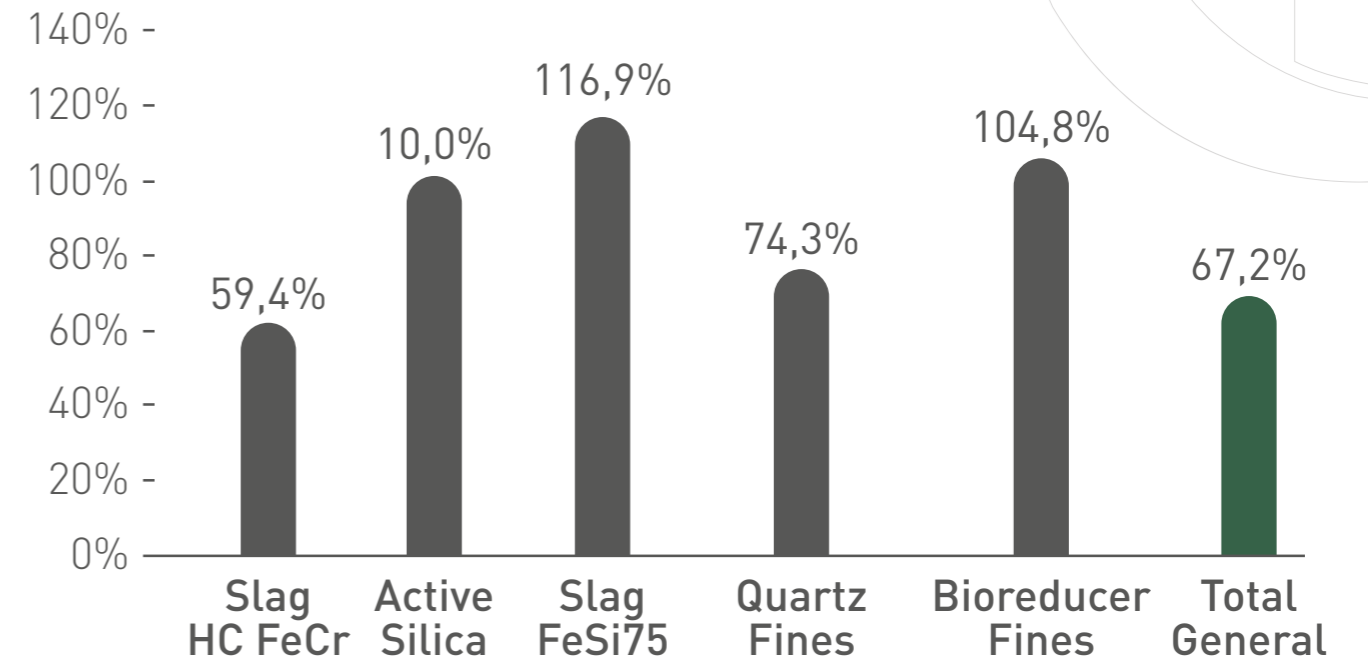
METALLURGY WASTE

The high carbon, high carbon ferrochrome slag is destined for the construction market, as shown in the chart below. On the other hand, low carbon ferrochrome residues are the target of several researches for their economic reuse and classification as a co-product. The studies prioritize the reduction of slag production, reclassification and its responsible disposal to mitigate or avoid possible environmental impacts.

POTENTIAL NEW USES OF LOW CARBON SLAG:

-  FERTILIZER
-  SOIL AMENDMENT
-  CONCRETE COMPONENT

INTENDED CO-PRODUCTS (%)



Note. The percentages consider the generation of the year plus the residual stock from previous years not allocated

Additionally,, improvements were made in the structures of the warehouses for the packaging of industrial waste, which which made it possible to reduce accumulated humidity and, consequently, the internal reuse of fines generated in the pre-treatment of the FeSi75 furnace dedusting system increased, a residue generated in the gas emissions control.

Other co-products of industrial origin, such as ferrosilicon and chromium ferrosilicon slag, are already reused internally or marketed for use as raw material in other metallurgical processes.

MINING WASTE

In mining, the optimization of mineral extraction and processing is prioritized in all phases of the operation. Thus, new technologies, equipment and processes that increase efficiency and reduce waste generation are constantly sought.

The tailings and sterile from mineral exploration constitute the main residues generated in the mining operations. The storage piles are part of the Degraded Areas Recovery Program (PRAD – Portuguese acronym that stands for Programa de Recuperação das Áreas Degradadas), formulated for each site and approved by the competent environmental agencies, when required. In chromite mines, after mining and recovery of the water used in processing, the sterile are stored in Controlled Sterile Deposits (DCEs - Portuguese acronym that stands for Depósitos Controlados de Estéreis) or in other areas for future application.

Currently, at Ipueira Mining, the scavenger stage is carried out, which increases the mineral use by collecting the tailings smaller than 1 mm, contributing to the reduction of the deposited mass. Through the wet gravimetric concentration method, the Company also achieved a 10% increase in metallurgical recovery. Quartz fines, on the other hand, can be used as co-products for the maintenance of local roads or in topographic reformation, according to the specifications of the PRAD.

As an example of reverse logistics, the other waste generated in the unit, either in the process or through the acquisition of inputs (batteries, tires and metal drums) return, preferably, to suppliers or receive the environmentally appropriate destination.

ECOLOGICAL SAND

FERBASA uses 100% ecological sand (re-purpose generated during concentration) in blasting galleries - activity carried out in underground mining operations. Through this process, the Company avoids the extraction of material from nature, which also implies saving financial resources.

2019	2020	2021	2022
4.395	5.837	6.685	7.400

Although this consumption represents only about 2.6% of the waste generated, investments are made to seek new alternatives of use.



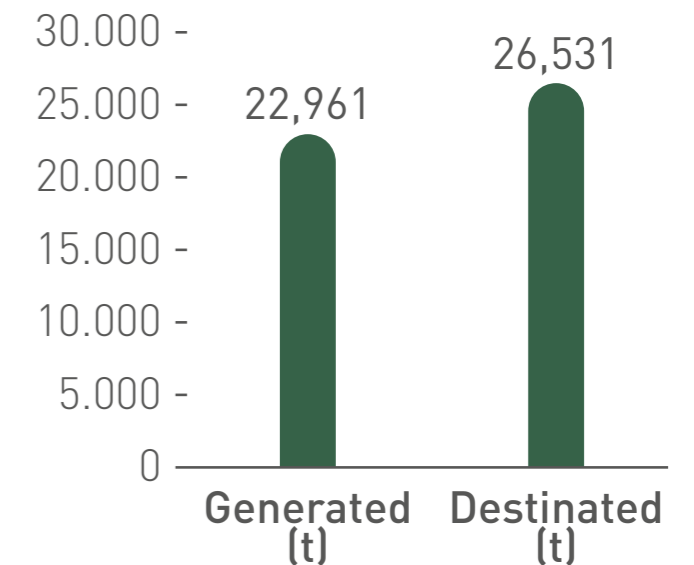
PROGRESS IN REUSE

In 2022, 115% of the waste stock that could be recycled or reused was allocated, considering the annual generation and the remaining stock from previous periods.

Compared to 2021, 19% increase reflects the maintenance of good performance in Metallurgy production chain. For organic waste, external disposal is preferably adopted for energy use, while the other ones are destined for co-processing of materials.

Barely what is considered unusable goes to storage in specialized landfills

WASTE DESTINED IN 2022



Note. Considered only waste that can be recycled, reused or otherwise disposed of.

WASTE MANAGEMENT INDICATORS

GRI 306-3

Waste generated in metric tons by waste composition (in tons)	2020	2021	2022	Δ2022/2021
Hazardous waste (Class I)	2.780,9	5.268,2	4.776,3	-9,3%
Non-hazardous waste (Class II)	90.935,6	129.271,2	67.312,5	-47,9%
Total	93.716,5	134.539,5	72.088,8	-46,4%

Note: There was a reduction in the generation of Class II waste, due to the reduction of production and the exclusion of eucalyptus bark from the database, as happened in 2020.

306-4

Waste not destined for disposal by waste composition and recovery operations (in tonnes)	2020			2021			2022		
	Recovery within the organization	Recovery outside the organization	Total	Recovery within the organization	Recovery outside the organization	Total	Recovery within the organization	Recovery outside the organization	Total
Hazardous waste (Class I)	0,00	0,00	0,00	5.327,28	6,50	5.333,78	4.650,61	122,92	4.773,53
Preparation for reuse	0,00	0,00	0,00	361,88	0,00	361,88	0,00	0,00	0,00
Recycling	0,00	0,00	0,00	4.965,40	0,00	4.965,40	4.650,61	51,97	4.702,58
Several Treatments	0,00	0,00	0,00	0,00	6,50	6,50	0,00	66,84	66,84
Other recovery operations	0,00	0,00	0,00	0,00	0,00	0,00	0,00	4,11	4,11
Non-hazardous waste (Class II)	0,00	0,00	0,00	71.667,11	3.063,38	74.730,49	56.341,58	3.663,50	60.005,08
Preparation for reuse*	0,00	0,00	0,00	61.068,51	50,7	61.119,21	44.836,90	0,00	44.836,90
Recycling	0,00	0,00	0,00	10.552,50	2.350,48	12.902,98	10.277,63	1.020,46	11.298,09
Reuse in areas of environmental regularization	0,00	0,00	0,00	0,00	0,00	0,00	1.142,96	1.685,98	2.828,94
Energy recovery	0,00	0,00	0,00	46,10	334,70	380,80	84,09	657,85	741,94
EMBASA Treatment	0,00	0,00	0,00	0,00	327,50	327,50	0,00	299,21	299,21
Other recovery operations	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Total General	0,00	0,00	0,00	76.994,39	3.069,88	80.064,27	60.992,19	3.786,42	64.778,61

306-5

Waste destined for disposal by composition of waste and by disposal operations (in tonnes)	2020			2021			2022		
	Disposition within the organization	Disposition outside the organization	Total	Disposition within the organization	Disposition outside the organization	Total	Disposition within the organization	Disposition outside the organization	Total
Hazardous waste (Class I)	17,90	580,77	598,67	1,03	698,05	699,08	0,00	126,22	126,22
Incineration (with energy recovery)	0,00	0,00	0,00	0,00	210,35	210,35	0,00	0,00	0,00
Incineration (without energy recovery)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	28,67	28,67
Landfill confinement	0,00	306,67	306,67	0,00	439,20	439,20	0,00	11,35	11,35
Other disposition operations	17,90	274,10	292,00	1,03	48,50	49,53	0,00	86,20	86,20
Non-hazardous waste (Class II)	0,00	166,11	166,11	0,00	121,18	121,18	0,00	331,89	331,89
Incineration (with energy recovery)	0,00	106,59	106,59	0,00	61,90	61,90	0,00	0,00	0,00
Incineration (without energy recovery)	0,00	0,00	0,00	0,00	0,13	0,13	0,00	15,80	15,80
Landfill confinement	0,00	59,52	59,52	0,00	52,10	52,10	0,00	311,98	311,98
Other disposition operations	0,00	0,00	0,00	0,00	7,05	7,05	0,00	4,11	4,11
Total General	17,90	746,88	764,88	1,03	819,23	820,26	0,00	458,11	458,11

Energy

GRI 3-3

With an electro-intensive operational base, Ferbasa acts to ensure the uninterrupted supply of electricity. The input is acquired externally, in long-term contracts with independent generating companies. The analysis of the demands of the operational units, especially of Metallurgy, and the monitoring of the indicators are carried out in a corporate way, through the monitoring of market and regulatory issues.

In the period, an additive was signed with the São Francisco Hydroelectric Company (Chesf – Portuguese acronym that stands for Companhia Hidrelétrica do São Francisco) to increase the contracted volume by 8.20%, which became effective in July 2022. This, among other initiatives, demonstrates the Company’s concern to preserve stability in production. In addition to the current contracts, operations for the purchase and sale of energy are carried out in due course on the Free Market.

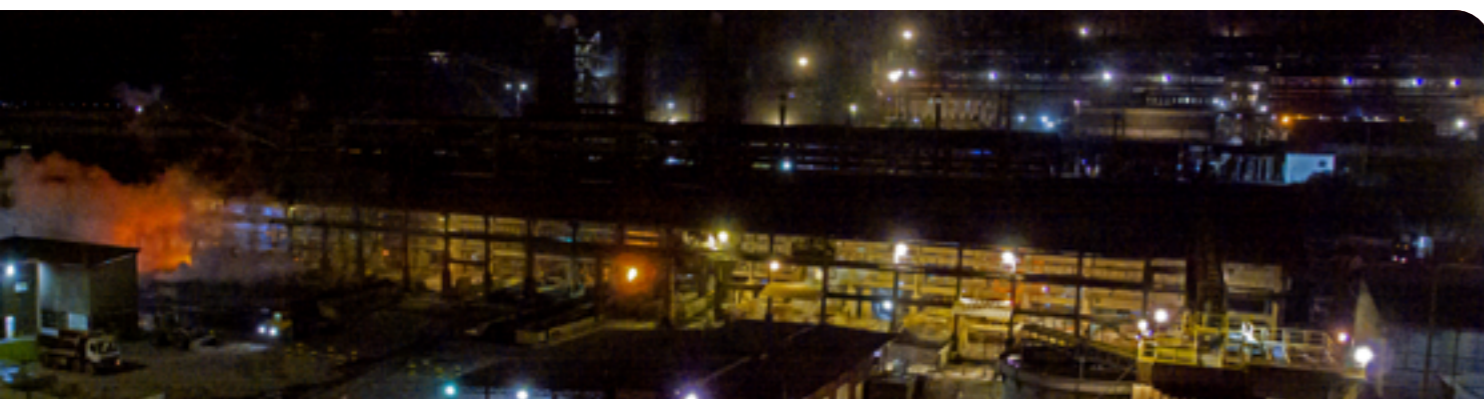
Over the course of the year, electricity consumed was slightly lower than in 2021, reducing from 6,589,953 GJ to 6,550,820 GJ in 2022.

INDEX OF ELECTRICITY CONSUMPTION PER ALLOY PRODUCED

	2020	2021	2022
Ferroalloys production (t)	296.394	309.770	301.627
Power Consumption (GJ)	6.610.966	6.589.953	6.550.820
Consumption index (t/GJ)	22,3	21,3	21,7

The Company invests in R&D projects that transversally promote cost reduction. During the year, some of Mining’s initiatives were highlighted, among them:

- **Photovoltaic energy:** project in the phase of economic feasibility study by specialized consultancy for design and installation of a photovoltaic plant.
- **Photovoltaic energy:** with the deepening of the mine and the consequent installation of new loads in the ventilation and pumping system, the average consumption of electricity in the year would be equivalent to 17.9 kWh/t ROM. Thanks to the controls and automation of the processes implemented in the period, the annual consumption reduced to 14.8 kWh/t ROM, representing a saving of 17.3%.
- **Optimization of drying:** Charcoal fines have replaced the use of wood in the drying furnaces of chromite sand due to their higher calorific value. In four months, consumption fell from 983t of wood to 281t of coal fines, while in costs the reduction reached 50%.



POWER CONSUMPTION

GRI 302-1

The data below refer to the energy consumption of the operational units of Metallurgy and Mining (Ipueira, in Bahia).

Energy consumption within the organization (GJ)				
	2020	2021	2022	Δ2022/2021
Non-renewable fuels	191.525,3	184.103,9	268.514,3	0,5
Gasoline (automotive)	3.273,4	3.258,6	12.377,9	279,9%
Diesel fuel	188.252	180.845,3	256.136,4	41,6%
Consumption of:	6.610.966	6.589.953,8	6.550.820,1	-0,6%
Electricity sold	128.145	37.964,2	315.895,4	732,1%
Total power consumption	6.802.491,3	6.774.057,7	6.819.334,4	0,7%

Due to lower consumption demand compared to booked, the volume of energy sold was higher than in 2021.

Emissions

IN SEARCH OF DECARBONIZATION

Ferbasa started in 2022 the implantation of a project aimed at the decarbonization of production processes. The work proposal, with goals to be achieved in all units, will be approved in 2023.

The project for the implementation of greenhouse gas burners in the furnaces of the Araticum Farm, Forestry unit, is underway. The expectation is a 21% reduction in CO₂e emissions in the charcoal process.

GREENHOUSE GAS INVENTORY

FERBASA's third Greenhouse Gas Emissions inventory, based on 2022 data, was finalized in the first half of 2023. Overall, the Company recorded a reduction of 6.79% compared to the study conducted in the year 2020.

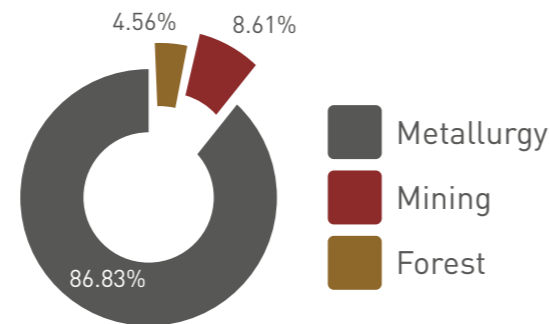
In the scope 1 analysis, 32% reduction in stationary combustion stands out due to the lower consumption of petroleum coke in the HC FeCr production (-53%) and 97% reduction in waste emissions result from the reduction in waste intended for composting. The 90% decrease in sanitary effluent emissions results from the change in the calculation methodology established by the GHG Protocol Program. The mobile combustion of vehicles controlled by the company showed a 23% increase in emissions compared to 2020, mainly associated with the growth in diesel oil consumption in the units (22%), due to the increase in production recorded in the year.

In scope 2, there was a reduction of 18,862 tCO₂e (-3%) compared to 2020, associated with emissions from the acquisition of electricity. While scope 3 emissions increased by 3%, mainly due to the increase in fuel consumption in vehicles controlled by third parties (102%) and in employee transport (118%). Emissions from the transport of inputs grew by 34%, mainly due to the greater km traveled reported in road transport (20%).

GHG INVENTORY (TCO2)

	2018	2020	2022
Scope 1 - Direct emissions from sources owned or controlled	301.695,23;	356.184,63	363.484,25
Scope 2 - Indirect emissions per energy purchased	117.614,81	105.790,55	71.602,87
Scope 3 - Other indirect emissions	71.857,46	93.256,73	82.421,84
TOTAL	491.167,51	555.231,91	517.508,96

Emissions are thus distributed by operating unit:



LESS DUST

Improving the paving of the ore storage areas and some internal roads of the metallurgical plant reduced the incidence and generation of suspended particulate matter, caused by the movement of vehicles within the factories and in the vicinity. The attenuation mechanism of this suspended dust mainly uses water and mechanical sweepers. In addition, the installation of filters in production processes, such as crushing of alloys and drying of ores, also contributes to the reduction of generation.



Water resources management

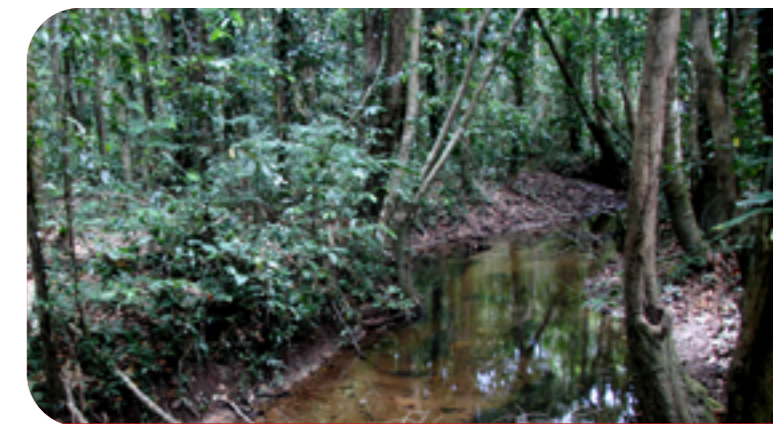
GRI 3-3/ 303-1/ 303-2

Due to the great relevance that water has in the ecosystem of the regions where Ferbasa maintains operations, especially in the Mining locations, which have historical water scarcity, the adoption of sustainable and progressively effective practices in the management of the input becomes indispensable. To this end, the Company adopts the conscious and rational use of water, operating reuse systems in a closed circuit, where the resource captured is only used to replace losses.

During the year, the operation of an effluent recovery system and the collection of rainwater generated a 3.3% reduction in raw water abstraction at the metallurgical plant. In the same unit, new hydrometers were installed - the initial project contemplated 13 equipments, in points of greater internal consumption, being 08 installed in 2021 and 04 in 2022. A final piece of equipment will come into operation in 2023, when the evaluation of the data of the set will also be carried out to propose new actions and review the goals.

The water resources consumed in the industrial operations of the Pojuca factories are captured in the Catu River, an affluent of the Pojuca River (part of the Recôncavo Norte water basin) and undergo treatment in Water

Treatment Plants (ETA - Portuguese acronym that stands for Estações de Tratamento de Água) and Effluent Treatment Plants (ETE - Portuguese acronym that stands for Estação de Tratamento de Efluentes). The site works below the grant limit and maintains a positive internal balance of funding and consumption. To face the effects of climate change and also diversify its matrix, the metallurgy drilled two wells in 2022 that are in the concession phase and whose initial expectation is to replace about 25% of surface water abstraction with underground.



Ferbasa has, year after year, been reducing the need for water use in its operations, both by improving efficiency and by expanding recirculation. From 2021 to 2022, the total reduction of surface water in the Company was 16.95%. In mining, the percentage was even higher, reaching 59.6%.

ACTIONS IMPLEMENTED IN MINING:

- Installation of another thickener, equipment that acts in the processing of ores in order to recover a greater volume of water;
- Incorporation of a multi-pole electromagnetic separator to the processing plant, increasing the efficiency of ore enrichment and, consequently, reducing the specific consumption of water in the process.

As explained in the chapter Environmental Management (page 68), in 2022, there was no water abstraction from the Andorinha II Dam and the Ipueira mine was supplied mainly by groundwater from the company's own wells and water stored in the Medrado pit.

HIGHLIGHTS:

- **96%** - Water recirculation index in closed circuit processes at the Ipueira mine
- **03** Licenses acquired for drilling new wells
- **13** Grants for the collection of existing wells.

The Ipueira concentration plant decreased from 0.80 m3/t to 0.55 m3/t the average annual uptake, reaching an approximate reduction of 45%, considering each ton of ore produced.

In the Forestry unit, the water comes from wells or from surface catchment. In addition to human supply, the resource is intended for bio-reducer production demands, building maintenance, road construction and repair, civil construction and firefighting.



GRI 303-3

	Unit of measurement	2020	2021	2022	Δ2022/2021
Total water abstraction	ML	1.829	1.989,25	1.651,98	-16,95%
Surface water Metallurgy (Total)	ML	1.451,1	1.447,83	1.368,2	-2,6%
Surface and groundwater Forest (Total)	ML	58,6	67,3	75	11,4%
Surface and groundwater Mining (Total)	ML	319,3	517,4	208,79	- 59,6%
Water abstraction in areas with water stress	ML	319,3	517,4	208,79	-59,6%
Surface water Metallurgy (Total)	ML	-	-	-	-
Surface and groundwater Forest (Total)	ML	-	-	-	-
Surface and groundwater Mining (Total)	ML	319,3	517,4	208,79	-59,6%

Note: Used as a basis of classification the framework by the Aqüeduct Water Risk Atlas, produced by the World Resources Institute (WRI) and recognized by ANA (National Water Agency, in Portuguese it stands for Agência Nacional de Águas). Thus, the 2020 and 2021 data were revised, considering that Metallurgy is not located in an area of water stress; only the town of Andorinha presents a risk classification of medium to high.

WATER CONSUMPTION (ML)

GRI 303-5

	2020	2021	2022
Forest	58,6	67,3	75
Metallurgy¹	1.440,4	1.399,73	1.322,8
Mining	319,3	517,4	208,79
Total water consumption	1.829	1.986,4	1.651,99

¹ Metallurgy: The methodologies consist of measurements by hydrometers installed in the intake pipelines, this equipment are calibrated every 02 years.

WATER DISPOSAL

GRI 303-4

Regarding water disposal, in 2022 a small reduction of 5.61% was registered due to better use in the system, with reduced abstraction.

Due to the quality presented from the moment of capture, in Metallurgy, eventually, the return to the water body of origin occurs outside the appropriate parameters (coliforms and BOD), even with low return volumes, around 100 m³/day, compared to the 1,800 m³/day granted.

WATER DISPOSAL PER UNIT (ML)

GRI 303-4

Unit	Font Type	2020	2021	2022
Metallurgy	Surface water	10,7	48,1	45,4
Forest	Freshwater (≤1000 mg/l Total Dissolved Solids)	0,27	0,02	

Since 2021, the Mining area has had an Oily Effluent Treatment Plant (ETEO – Portuguese acronym that stands for Estação de Tratamento de Efluentes Oleosos), with a treatment/reuse target of 100 m³/month. In the year, the unit reached 123.3 m³/month.

In forestry activities, the low volumes discarded underground, through sinks undergo treatment involving physical, biological and chemical processes to meet the standards provided for in the legislation and in accordance with the Effluent Treatment and Monitoring Plan.

Materials management

GRI 301-2

The management of inputs and raw materials obtained for use in the production process is based on the standards defined by ISO 14001 and legal regulations.

In the acquisition of raw materials from recycled materials, the percentage acquired may vary according to market conditions and availability. An example is the steelmaking scarp, which is purchased from third parties and used as a source of iron in the production of alloys, contributing to the reduction of the use of natural resources.

In addition, to ensure the best operational and environmental performance, as well as the reuse of industrial waste to replace hematite (iron ore), the Company is always looking for new suppliers in the domestic market.

Metallurgy also reused about 41,381t of its waste and by-products, such as FeSi75 and FeSiCr slags, remnants of fillers and ferrochrome and ferrosilicon dedusting fines in sintering.

GRI 301-1

RENEWABLE MATERIALS IN TONNES			
Materials	2020	2021 *	2022
Reducers (Bioreducer)*	48,1	48,1	48,1

NON-RENEWABLE MATERIALS IN TONNES			
Materials	2020	2021 *	2022
Mill Scale	32.679,8	55.634,1	33.050,5
Reducers (metallurgical coke)	75.367,6	155.531,1	80.837,9
Dedusting powder (external)		7,0	0,0
Waste generated in the dedusting of the FeSi and FeCr processes	13.914,0	10.137,0	10.313,0

Mine closure

GRI G4 -MM10

The actions related to the closure of mines are based on a planning aimed at the conversion of the mined areas, their integrity and physical and chemical stability, as well as their future use, including their infrastructure, which are decisive for the sustainable development of the territories where the Company operates.

The strategy has guidelines and good practices guided by DNPM Ordinance 237, of 10/18/2001, (NRM 20, Suspension, Mine Closure and Resumption of Mining Operations) and regulated by ANM resolution No. 872.273/2003, which determines the description of preliminary data on the situation of the areas, the planning for the total deactivation of the structures and the guidelines for the environmental and socio-cultural actions to be carried out until their complete decommissioning, considering the impact on stakeholders. In this perspective, R\$ 15.67 million was provisioned in the year, destined to the mine closure plans.

Although Ferbasa's ore reserves are significant, ensuring a very extended useful life at current production levels, in 2022 a consultancy was hired to revisit the plans, define the activities to be implemented in the region and evaluate the recovery plan of native vegeta-



tion. The consulting report filed with the ANM, responds to a series of obligations that must be fulfilled by companies. In this way, the closure plans for 100% of Ferbasa's mining operations will be updated and reported to public institutions.

CLOSURE OF ACTIVITIES IN RAFAEL JAMBEIRO

In 2022, Ferbasa entered the process of closing the activities of an open-pit quartz mining unit, located in the town of Rafael Jambeiro (BA), covering an area of 100 hectares (247 acres).

The mine closure plan complies with ANM Resolution 68, of April 20, 2021, considering a risk assessment that uses the EPA (U.S. Environmental Protection Agency) and ABNT NBR ISO 31000/09 – Risk Management methodologies for the definition of the Preliminary Risk Analysis (APR – Portuguese acronym that stands for Análise Preliminar de Riscos).

Dam management

Structured and maintained according to the best engineering practices, Ferbasa's dams were built by the downstream method and observe criteria of safety, preservation of the environment and legal compliance. Currently the operations include 5 tailings dams, located in the Ipueira and Coitezeiro mines, and 11 water dams, located in the Ipueira and Coitezeiro mines and in the Araticum Farm.

In 2022, the project to reassess the stability of the structures advanced under the tutelage of one of the most renowned consultancies in Brazil. The work is part of a plan of constant evaluation, with a view to maintaining safety and mapping the hypothetical impacts in case of dam break. The studies and implementation of the actions will continue in 2023 and updates are planned for the following years.



It is worth mentioning that the tailings dams are built on compacted soil and without upstream elevations, with heights, volumes and other characteristics lower than the limits established by the National Dam Safety Policy (PNSB, Law 12.334/2010 – Portuguese acronym that stands for Política Nacional de Segurança de Barragens). Periodically and regularly, they undergo inspections conducted by Ferbasa's own teams or external consultancies and are inspected by government agencies.

With the use of new technologies, the Company has been systematically reducing the need for tailings disposal. The initiatives in this sense seek, among other objectives, to increase the useful life of the dams, control the direction of solids and increase the percentage of water reuse.

All Ferbasa water dams are reported and classified by Inema, according to Resolution CNRH 143 and Inema Ordinance 16,481, of 2018.

Social responsibility

GRI 3-3/ 413-1/ 413-2

Attentive to the social and economic complexity of the territories where it operates, Ferbasa aims to enable socioeconomic progress and improve the quality of life of the communities located around its production units. With the purpose of generating shared value, it established six master lines for the actions of the Aqui Tem Ferbasa social responsibility program: Education, Rural and Community Development, Sport, Art and Culture, Environment and Health.

The Aqui tem Ferbasa program's main ballast is Education. Based on the ideals of our founder, José Carvalho, all initiatives are based on the certainty that the road of Education leads to citizen formation, the support of societies where values such as democracy, respect for others, equality and social justice.

2022 HIGHLIGHTS OF FERBASA IS HERE PROGRAM

130 communities benefited
34 municipalities in Bahia served
R\$ 21 million Total investment
170 thousand People benefited



34 MUNICIPALITIES

130 COMMUNITIES

170 THOUSANDS BENEFITED PEOPLE



METALLURGY

· Pojuca · Catu

CORPORATE

· Salvador

BW GUIRA PÁ

· Caetité · Pindai

FOREST

· Alagoinhas
 · Aramari
 · Araçás
 · Cardeal da Silva
 · Conde
 · Entre Rios
 · Esplanada
 · Itanagra
 · Maracás
 · Mata de São João
 · Planaltino

MINING

· Andorinha
 · Antônio Gonçalves
 · Campo Formoso
 · Cansanção
 · Castro Alves
 · Euclides da Cunha
 · Ipirá
 · Itiruçu
 · Itiúba
 · Juazeiro
 · Queimadas
 · Monte Santo
 · Rafael Jambeiro
 · Ribeira do Pombal
 · Senhor do Bonfim
 · Sento Sé
 · Tucano
 · Uauá

LINES OF ACTION



Education



Art and Culture



Sport



Rural and Community Development



Environment



Health

Aimed at integrating community assets, the Aqui Tem Ferbasa social responsibility program uses the four pillars of Education formulated by the United Nations Educational, Scientific and Cultural Organization (UNESCO):

Learning to learn – When Ferbasa initiates the first contacts with a community, it seeks primarily to institute a relationship of exchanges and learning. For this, values, culture, vocation and desires are diagnosed, in a process that privileges learning to learn.

Learning to do – The second step is the creation of bonds and deepening of knowledge, through an interactionist social relationship. In this way, one learns how to do and puts into practice the knowledge acquired.

Learning to live together – Spring propelling the continuous and assertive execution of social responsibility actions, sedimented in active listening and genuine dialogue. In this way, the self-sufficiency of the groups is fostered, which become capable of leading their own transformation.

Learning to be – The program aims to generate value for society, valuing diversity and allowing the personal and professional growth of the actors involved, whether they are communities, employees, volunteers, consultants or other stakeholders.

SOCIAL INVESTMENT GOVERNANCE

In addition to its own actions, Ferbasa adopts transparent practices for receiving and analyzing requests submitted for sponsorship or donations. The procedure is carried out by registering in the Sponsorship Request Form, available digitally on the Ferbasa website.

The information collected goes through the analysis of the Social Responsibility team, opinions of the correlated technical areas and approval by the board, through an internal system with previously determined flows and scopes. To receive any support, the projects must be in accordance with the lines of action of the social responsibility program, reflect the strategic objectives defined for the period and have budget allocation. During the year, 96 requests were received and handled through this channel.



Impacts

GRI 203-1/ 203-2

By investing in social impact strategies, Ferbasa participates in lasting territorial development and the creation of autonomous communities. .

Positive impacts generated:

- Provision of educational initiatives that contribute to sustainable progress;
- Expansion of employability and income generation through training in activities that reflect the vocation of the locality;
- Appreciation of local socio-cultural customs, encompassing traditional peoples and communities;
- Promotion of sport as an element of social inclusion;
- Preservation of biomes;
- Provision of dignified health services to the population through support to the Government and non-profit institutions, with donation of equipment or contributions to projects.

In 2022, the lines Art and Culture, Education and Sport resumed face-to-face activities and projects focused on health counted on an increase in investments made (see more in **Social achievements, Support to health entities**).

Negative impacts, when detected, either through complaints reported by the channels or by direct verification of professionals in the areas of social responsibility, environment and operations, are treated proactively, having as premises the active listening and the search for assertive resolution of the issues.



The year 2022 was severely impacted by invasion promoted by the Landless Rural Workers Movement (MST – Portuguese acronym that stands for Movimento dos Trabalhadores Rurais Sem Terra) of forest areas in Maracás and Planaltino (BA) stands out. In this second town, the movement invaded five hectares (around 12.4 acres) of the Reunidas Redenção Farm, a property that is part of Ferbasa’s list of forestry projects, in addition to benefiting the local community through the assignment in lending to an association of milk producers, which uses the area for pasture and cattle management. In view of this, the Justice was triggered for the repossession of the lands.

In the town of Entre Rios (BA), representatives of the locality of Sítio do Meio filed a complaint due to the smoke from the Araticum Farm (Forest Unit). To know the demand, meetings were held with the community, Ferbasa employees and municipal public agencies. A study was then initiated with national companies and an investment of approximately 24 million was approved for the implementation of gas burners that prevent the dispersion of smoke.



Installation of the equipment is expected to begin in July 2023. In this same place, the technical training of 26 people from the community was carried out, who will be able to apply for job vacancies during the assembly/construction of the project.

In the same way, the community of Cacimbas, Itiúba (BA), held a demonstration requesting from the Public Authorities and Ferbasa a position on the emission of particulates (dust) by the traffic of cargo vehicles on the road that crosses the locality. After a series of studies, Ferbasa, in a partnership with municipal agencies, promoted improvement in a stretch of 1.5 km (about 1 mile) using an additive to give cohesion to the soil. In the second phase, scheduled for 2023, the additive will be applied in a stretch of 5.3 km (about 3.3 miles).

Other areas are also benefit by actions aimed at recovering roads, mainly in the mining region, whose roads are precarious and constantly need maintenance, through the application of crushed stone and lime and materials donated by the Company to municipalities or communities

Social achievements

SERTÃO FORTE

The actions of the **Sertão Forte** program in the communities surrounding the Mining unit, carried out during the year, confirmed the potential of the existing production chain in the region. The incentive to goat farming was added to other economic activities diagnosed, such as sheep farming, and promoted the evolution of pastures, with the use of breeding grounds for genetic improvement, development of backyards of forage palms and technical assistance provided by a specialized veterinarian. The promotion of beekeeping materialized in the training for the use of honey in personal hygiene products.

The project has achieved results, through the realization of activities such as:

- Structuring of goat’s milk and cheese production;
- Training and beginning of the assembly of a special meat cutting room;
- Training focused on the use of available materials, such as vines, piassava fiber and licuri straw in handicrafts;
- Cleaning of waterfalls and reservoirs of the communities;
- Opening of 01 artesian well;
- Support for productive associations;



Ferbasa has also boosted female entrepreneurship through poultry farming. Five chicken coops were implemented in 2022 as an activity that will allow, from 2023, women to maintain their household chores while helping to balance the household budget, through the sale of eggs.

CULTURE IN THE SERTÃO FORTE PROGRAM

In addition to community rural development initiatives, *Sertão Forte* brought to light the richness of the *sertaneja* culture¹ and the importance of preserving the local history and traditions still alive in cordel literature². The work of the cordelists was revered with the edition and sponsorship of the book "Fireflies, Prose and Poetry in Cordel", by the Bahian author Teones Almeida. The artist participated in cordel workshops promoted in schools in the region and integrated the programming grid of the Ferbasa stand at the Bahia Book Biennial 2022.



SOCIAL PROJECTS



A CHAMPION IN SCHOOL

Line of Acting: Education and Sports

Goal: Act in the education of children and young people through reinforcement of Portuguese, Mathematics, English, Computing and training in football techniques, applied under the guidance of Esporte Clube Bahia (ECB)

- **117** participants among children and adolescents from Pojuca
- It started in 2018.



FERBASA EDUCATES

Line of Acting: Education

Goal: Offer continuing education for direct and indirect employees.

- **40** graduates in 2022;
- **527** People graduated in elementary and secondary education;
- **06** graduates of the program assumed new positions in the Company in 2022;
- It started in 2014.

FESTIVAL NACIONAL DE QUADRILHAS

Line of Acting: Art and Culture

Goal: Reconhecer e valorizar a cultura e as tradições regionais; geração de renda

- **12** estados brasileiros foram representados;
- Apresentação de **30** grupos culturais juninos;
- Público de **1.000** pessoas;
- Município de Entre Rios.

PROFESSION TALENT

Line of Acting: Education

Goal: Offer qualification of labor in the segments of Metallurgy and Mining

- **34** employees completed the Electromechanics course;
- **600** hours taught by SENAI (Institute of Education).

SING LUIZ

Line of Acting: Art and Culture

Goal: Recognize and value regional culture and traditions; income generation

- **32 Thousand** people;
- **18** towns;
- It started in 2017.



ENVIRONMENTAL EDUCATION PROGRAM

With the theme “**Designing the Future**”, the Environmental Education Program (PEA – Portuguese acronym that stands for Programa de Educação Ambiental) promoted a Drawing Contest with the aim to establish the importance of environmental preservation for future generations, through actions that can be carried out daily. In total, 14 towns were contemplated with the training of 160 teachers and 794 children, aged between 6 and 10 years, participated in the initiative. The most creative designs of each town were awarded with tablets, electronic games and speakers.

The other funds were contributed to institutions such as:

- Martagão Gesteira Hospital;
- Hospital of Love;
- Association of Parents and Friends of the Exceptional (Apae – Portuguese acronym that stands for Associação de Pais e Amigos dos Excepcionais);
- Fabiano Home;
- Santo Antônio Educational Center (Cesa – Portuguese acronym that stands for Centro Educacional Santo Antônio) from Obras Sociais Irmã Dulce;
- Bom Viver (Obras Sociais Irmã Dulce – OSID).



SUPPORT TO HEALTH CARE ENTITIES

With the good result achieved by Ferbasa in 2022, it was possible to expand the financial contribution to health support entities. In total, R\$ 3.8 million were allocated, of which R\$ 2 million was directed to the renovation of the Irmã Dulce Memorial in Salvador (BA), a permanent exhibition space on the legacy of love and charity of the Good Angel of Bahia. The Museum, attached to the Irmã Dulce Hospital, brings together more than 800 pieces designed to preserve and keep alive the ideals of the nun.

PROFESSIONAL TRAINING

In search of the autonomy of the communities that benefit from the Ferbasa Is Here program, in 2022 the Company held 12 training courses taught by the National Trade Service (Senac – Portuguese acronym that stands for Serviço Nacional do Comércio), which totaled 163 class hours. In total, 305 people participated in the initiatives in ten municipalities in Bahia. They are:



Course	Community	Town
Course Fine and handmade biscuits	Sítio do Meio	Entre Rios
Course Preparation and assembly of cassava-based dishes	Cachoeira do Edgar	Esplanada
Course Jams and Compotes	Cachoeira do Ninizio	Esplanada
Bar Snacks Course	Oitis e Cachoeira do Edgar	Esplanada
Course Research, Planning and Development of Collection	Pimentel	Andorinha
	Praça	Monte Santo
Workshop Talking about Solidarity Economy with artisans	Salgado	Andorinha
Course Good Practices and Food Safety in times of pandemic	Palame	Esplanada
Eyebrow Design with henna	Central and Corujão	Pojuca
Brazilian Cupcake	Central and Corujão	Pojuca
Fundraising for social projects	City Halls and Municipal Secretariats	Andorinha, Araçás, Campo Formoso, Cardeal da Silva, Conde, Entre Rios, Esplanada, Mata de São João, Monte Santo e Pojuca
Social Media Marketing	Communities in general	Andorinha, Araçás, Campo Formoso, Cardeal da Silva, Conde, Entre Rios, Esplanada, Mata de São João, Monte Santo e Pojuca

Ferbasa also sponsored the Bahia Handicraft Fair, an event aimed at promoting socio-productive inclusion and income generation for Bahian artisans. The Company selected ten communities, which marketed their art at the fair, held in a prominent location of a mall in Salvador, and received practical training for pricing, customer service and presentation of products in a more attractive way. The event was a good opportunity to value the cultural traditions of Bahia's identity territories.

SUSTAINABLE FORESTS



Ferbasa maintains a positive relationship with the cooperatives located in Alagoinhas, Araçás, Entre Rios, Maracás and Tucano. Together with them, it promotes the generation of income, through the cession of land used for beekeeping and pasture, as well as the donation of eucalyptus tips, marketed as a way to increase the family income of these groups. These activities generate economic, environmental and social effects essential for the development of agribusiness, entrepreneurship and social inclusion.

Performance in 2022

In 2022, market conditions in general were significantly impacted by the conflict between Russia and Ukraine, mainly due to the expressive levels of inflation around the world, and the effect of restrictions still related to the Covid-19 pandemic. This scenario promoted an increase in the prices of *commodities*, inputs and materials used in the steel sector chain.

Despite this situation, the Company maintained a high utilization of its productive capacity, to take advantage of the commercial conditions especially favorable to its business.

SUSTAINABLE FORESTS

NAME OF THE ACTION	BENEFITED	PARTNERS	TOWNS SERVED
Donation of tips	94 families	7 associations	Araçás, Entre Rios, Esplanada, Mata de São João e Cardeal da Silva
Assignment of area for beekeeping	40 families	6 cooperatives	Campo Formoso, Entre Rios, Maracás, Ribeira do Pombal e Tucano
Assignment of area for pasture	40 families	1 association	Planaltino



Investments

Ferbasa invested R\$ 260.2 million, exceeding by 104.7% the total committed in 2021. The amount was distributed in:

Unit	R\$ MM	%
Metallurgy	77,5	30
Mining	92	35
Florest	75,4	29
Wind Power	15,3	6
Total	260,2	100



R\$ 77,5 million | Metallurgy

The investments allowed us to keep the production volume close to that recorded in the previous year when a historical level was reached. The funds were applied in implementations, expansions, replacements, renovations and maintenance, as well as in improvement works, such as pavements. It is worth mentioning the possibility of increasing the production levels of high-purity ferrosilicon by increasing the refining capacity (converters) and casting (*Casting Machine*).

R\$ 92 million | Mining

Mainly applied in the development of mines, buildings and acquisition of equipment (underground and ore processing).

R\$ 75,4 million | Forest Resources

Forestry operations received a significant volume of resources in 2022, destined to forest training and maintenance, construction of roads, machinery/equipment and buildings.

R\$ 15,3 million | Renewable energy

The resources were directed, essentially, to the acquisition of machinery and equipment.

Operating results

METALLURGY

Total Production

301,6 thousand tons of ferroalloys

2,6% reduction compared to 2021, when the Company reached record volume.

Trading

269,9 thousand tons of metal alloys

Production variations

4,5% growth - high purity ferrosilicon (HP FeSi)

3,9% shrinkage - chromium alloys

0,3% growth - silicon alloys

The installation of a second came in the casting machine increased the annual production of special silicon alloys to 70,000 tons, without changing the installed capacity of the metallurgical plant, which had already been operating at the limit (interruptions only at peak hours and during the scheduled renovations of reduction and refining furnaces). In 2022, the refined FeSi75 also achieved good results, using 82.8% of the installed capacity.



MININGS

Total production

513.788 thousand tons

12% reduction compared to 2021

Underground mine operations rely on increasingly intensive use of technology, including automation capabilities, lowered loaders equipped for remote operation, and digital ventilation and air quality control systems. These improvements, in addition to promoting more safety in the mine and quality in the work environment, allowed to raise the ore recovery index, reduce the phosphorus content and save water resources, with the use of equipment such as the electromagnetic separator and the thickener.



FOREST

Total production

139 thousands tons of bioeducer

Maintaining 2021 levels

In the Forest area, the year was marked by a forest formation program in the order of 3 thousand hectares (about 7413 acres). The productivity indicators and the relative cost of bioeducer remained in line with expectations, even with all the pressure of the inflationary effects perceived in recent times in the country.

To ensure the supply of bioeducer for the metallurgical plant, Ferbasa acquired from the market about 20% of this input, coming from planted eucalyptus forests.



WIND POWER

Total generation

64,5 average MW

14,8% below the annual physical guarantee

In November, the implementation of an asset management system of the wind complex was initiated, with full operation expected at the end of the first half of 2023. This system allows the continuous monitoring of the most diverse operating conditions of wind farms, which will bring significant gains in operational performance, especially for wind turbines.

In addition to the climatic effects, the high level of restrictions imposed by the National Electric System Operator (ONS – Portuguese acronym that stands for *Operador Nacional do Sistema Elétrico*), especially in the first half of 2022, impacted the year’s generation by 4.9 average MW. Had such restrictions not occurred, annual generation would have corresponded to 69.4 average MW.

Financial results

GRI 201-1/ 201-4

269,9 thousand tons of ferroligas marketed
0,8% reduction compared to 2021

This variation was influenced by the 12.1% decrease in sales to the domestic market and the 15.4% increase in volumes destined to the foreign market, which reaffirms the Company’s ability to adapt its marketing mix to market fluctuations. Added to this, the 42.0% increase in the average price of ferroalloys in dollars, made net revenue grow 31.4% when compared to that recorded in 2021.

The favorable operating performance led Ferbasa to record the best financial performance in its history.

ADJUSTED EBITDA

R\$ 1.285 MILLION

NET PROFIT

R\$ 1.063 MILLION

DIRECT ECONOMIC VALUE GENERATED AND DISTRIBUTED (R\$ THOUSANDS)

GRI 201-1

	2020	2021	2022
Added value to distribute	704.173	1.431.380	1.985.001
Net Revenue	1.622.019	2.389.477	3.139.016
Distributed economic value	693.567	905.925	1.236.250
Personnel (remuneration and benefits)	277.740	358.802	415.705
Taxes, fees and contributions	87.206	249.366	379.079
Remuneration of third-party capital	269.213	180.305	127.743
Interest on equity and dividends	59.408	117.452	313.723
Economic value retained	10.606	525.455	748.751

Due to the industrial enterprise installed in the area of operation of the Superintendence of Development of the Northeast (SUDENE), the Company enjoys the tax benefit of income tax reduction, with a percentage of reduction of 75% on income tax and additional non-refundable, incident on revenues.

SALES OF FERROALLOYS (THOUSAND TONS)

Year	Volume traded	Variation (%)
2020	268,1	20,4
2021	272,1	1,5
2022	269,9	-0,8

ADJUSTED EBITDA (R\$ MILLION)

Year	Adjusted EBITDA	Variation (%)
2020	406,8	68,3
2021	935,7	130,0
2022	1.285,0	37,3

NET PROFIT (R\$ MILLION)

Year	Net Profit	Variation (%)
2020	70,0	-68,4
2021	642,9	818,4
2022	1.062,5	65,3

TOTAL MONETARY VALUE OF THE FINANCIAL ASSISTANCE RECEIVED BY THE ORGANIZATION FROM ANY GOVERNMENT (R\$ THOUSAND)^{1 2}

Year	2020	2021	2022
Type of assistance			
Tax incentives/credits	2.528	983	
Grants for investments, research and development, and other relevant types of grants	6.833	156.637	226.535
Total	9.361	157.620	226.535

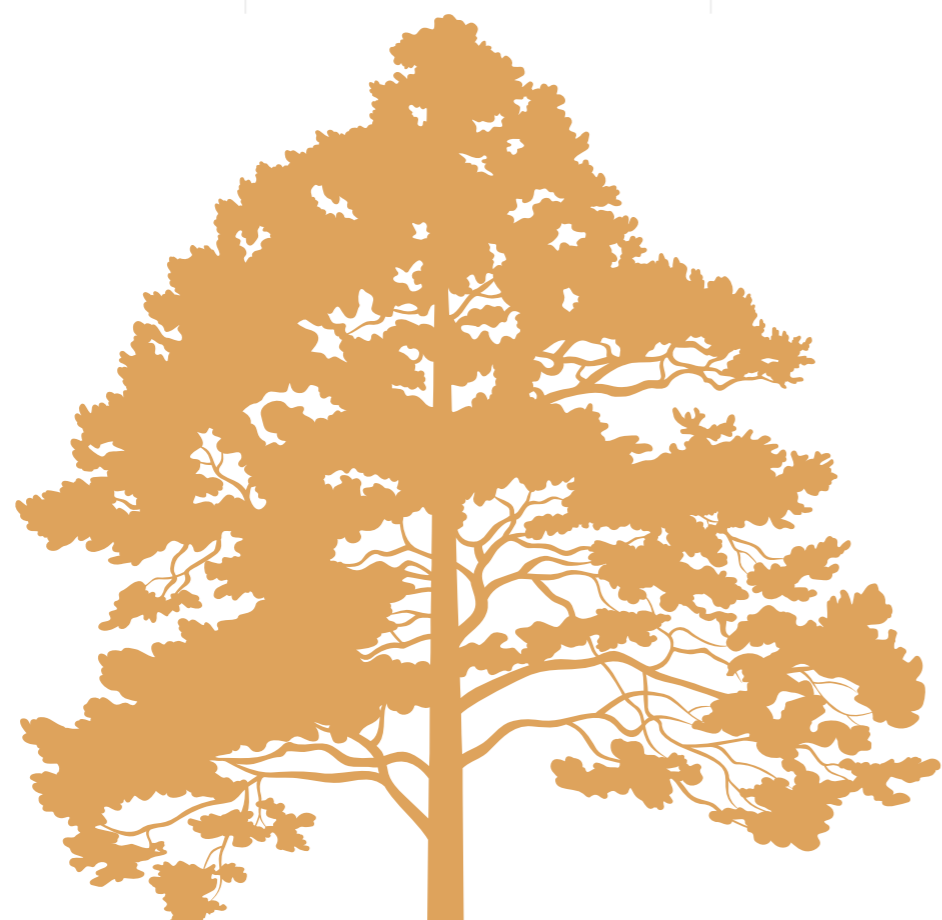
¹ Tax incentives/benefits are restricted to Brazil, the country where the Company is located.

² The government does not participate in the organization's shareholding structure.



GRI Content Summary

Statement of use	GRI 1 used	GRI G4 Suplemento Setorial de Mineração
Ferbasa has reported in accordance to the GRI Standards for the period of January 1st to December 31st, 2022	GRI 1: Foundation 2021	GRI MM4 / MM 10



GENERAL DISCLOSURES

The organization and its reporting practices			
GRI Standard/G4	Disclosure	Page	Response
GRI 2 General Disclosures 2021	2-1	Organizational details	5, 8, 17
	2-2	Entities included in the organization's sustainability reporting	List of organizations controlled by FERBASA: BW GUIRAPÁ I S.A. - Subsidiary/ Industria de Minerios Damacal Ltda - Subsidiary/ Mineração Vale do Jacurici S/A - Subsidiary/ Reflora Reflorestadora and Agricola S/A - Subsidiary/ High Purity Silicon of Bahia - S/A - Silbasa - Controlled. FERBASA has no other entities that are listed in the Company's financial statements.
	2-3	Reporting period, frequency and contact point	The sustainability report refers to the period 2022 and its publication occurs annually
	2-4	Restatements of information	Changing the base period. In relation to indicator 301-1, in 2021 only the "Dedusting dust generated in the process". In 2022, we registered waste generated in factory dust removal processes of Ferrochrome and Ferrosilicon, excluding microsilica, which had already been intended as a by-product. Additionally, there was a correction in the source classification, which went from renewable to non-renewable.
	2-5	External assurance	The report will not be subject to external verification.

Activities and workers			
GRI Standard/G4	Disclosure	Page	Response
GRI 2: General Disclosures 2021	2-6	Activities, value chain and other business relationships	8, 11, 67
	2-7	Employees	40
	2-8	Workers who are not employees	40

Governance
Governance

GRI Standard/G4	Disclosure	Page	Response	Omitted requirements	Omission Reason	Explanation	
GRI 2 General Disclosures 2021	2-9	Governance structure and composition	20, 22	In the composition of the CAD, 25% of the members are female.			
	2-10	Nomination and selection of the highest governance body	20				
	2-11	Chair of the highest governance body		The chairman of the Board of Directors does not hold a senior executive position at the Company.			
	2-12	Role of the highest governance body in overseeing the management of impacts	20				
	2-13	Delegation of responsibility for managing impacts	22				
	2-14	Role of the highest governance body in sustainability reporting	20	The Board of Directors composed the research carried out by the Company, to define material themes, following the same methodology applied to stakeholders. After the information collection process and report production, the result is checked, evaluated and approved by CAD, before final publication.			
	2-15	Conflicts of interest		The Board monitors potential conflicts of interest, through implementation of segregation of duties, use of IT systems (RP), Policies, Internal and External Audits and reporting channels. The controlling shareholder is the José Carvalho Foundation.			
	2-16	Communication of critical concerns	20	All relevant, crucial and sensitive communications are investigated by the relevant Committees, analyzed by the Directors corresponding and informed to the Board.			
	2-17	Collective knowledge of the highest governance body	37				
	2-18	Evaluation of the performance of the highest governance body			2-18	Not applicable	The issue was not experienced by the Company in the periods analyzed.
	2-19	Remuneration policies	51		2-19-a iv) bonus return and incentives (clawbacks).	Information not available	The practice addressed in the question was not experienced by the Company in the aforementioned periods.
	2-20	Process to determine remuneration			2-20	Not applicable	The issue was not experienced by the Company in the periods analyzed.
	2-21	Annual total compensation ratio			2-21	Confidentiality	The questions are addressed in confidential manner by the Company.
	2-22	Statement on sustainable development strategy	6				

Strategy, policy and practices

GRI Standard/G4	Disclosure	Page	Response	
GRI 2: General Disclosures 2021	2-23	Policy commitments	24	
	2-24	Embedding policy commitments	55	
	2-25	Processes to remediate negative impacts	26	
	2-26	Mechanisms for seeking advice and raising concerns	The code of conduct is a normative instrument that directs which employees behaviors and actions, whether of any hierarchical powers, must assume in accordance with the Company's guidelines.	
	2-27	Compliance with laws and regulations	The SOGI Lira electronic platform is used to manage conformities and non-conformities. In 2022, there were four fines applied environmental measures, one by INEMA and three by the municipality of Conde, related to the suppression of vegetation, launch of effluents and APP degradation. There was no record of sanctions non-monetary in the same period. Three fines were paid in 2022, while one is in administrative defense. In addition, a fine was paid in 2021 after the completion of an administrative process.	
	2-28	Membership associations	30	

Engagement of stakeholders

GRI Standard/G4	Disclosure	Page	Response
GRI 2: General Disclosures 2021	2-29	Approach to stakeholder engagement	27
	2-30	Collective bargaining agreements	100% of the Company's employees are covered by agreements or collective labor convention, in accordance with their respective segments of activity.

MATERIAL TOPICS

GRI Standard/G4	Disclosure	Page	
GRI 3: Material topics 2021	3-1	Process to determine material topics	5, 36
	3-2	List of material topics	36

Local communities

GRI Standard/G4	Disclosure	Page	Response	
GRI 3: Material topics 2021	3-3	Management of material topics	96	
GRI 203: Indirect economic impacts 2016	203-1	Infrastructure investments and services supported	99	
GRI 301: Materials	301-1	Materials used by weight or volume	91	
GRI 413 Local communities	413-1	Operations with local community engagement, impact assessments, and development programs	96	The actions and projects carried out are monitored through technical visits, meetings and reports from each project (number of beneficiaries, investment, number of communities, number of municipalities).
	413-2	Operations with significant actual and potential negative impacts on local communities	96	

Governance, transparency, ethics and compliance

GRI Standard/G4	Disclosure		Page	Response
GRI 3: Materials Topcs 2021	3-3	Management of material topics	24, 26	
	205-1	Operations assessed for risks related to corruption		The Company carried out a diagnosis related to the Integrity, the result of which was presented to the Executive Board at the month of Dec/22. The next reporting levels are the Committee Audit and Board of Directors, which is expected to occur in 2023. The actions resulting from the Diagnosis will be implemented after approval of the document by the competent authorities. Therefore, in 2022 we did not have a risk assessment specifically focused on corruption.
GRI 205 Anticorruption	205-2	Communication and training about anti-corruption policies and procedures		All employees are trained and receive a code of conduct printed when they join the Company.
	205-3	Confirmed incidents of corruption and actions taken		There wasn't.

Hydro resources

GRI Standard/G4	Disclosure		Page	Response
GRI 3: Materials Topcs 2021	3-3	Management of material topics	87	
	303-1	Interactions with water as a shared resource	87	
	303-2	Management of water discharge-related impacts	87	
GRI 303: Water and effluents 2018	303-3	Water withdrawal	89	
	303-4	Water discharge	90	
	303-5	Water consumption	89, 90	

Waste management

GRI Standard/G4	Disclosure		Page	Response
GRI 3: Materials Topcs 2021	3-3	Management of material topics	68	
GRI 301: Materials 2016	GRI 301-1	Materials used by weight or volume	91	
	GRI 306-1	Waste generation and significant waste-related impacts	75	
	GRI 306-2	Management of significant waste-related impacts	75	
GRI 306: Waste 2020	GRI 306-3	Waste generated	75, 79	
	GRI 306-4	Waste diverted from disposal	75, 80	
	GRI 306-5	Waste directed to disposal	75, 81	

Attraction, retention and development of human capital

GRI Standard/G4	Disclosure		Page	Response
GRI 3: Materials Topcs 2021	3-3	Management of material topics	45	There is no mapping of objectives, targets and indicators for evaluate the progress of the topic. There were no lessons that led to changes to its policies or practices. In many cases, the impacts are known in a general and are not under the management of Ferbasa. Ex. Power generation through fossil fuels. For this reason, the Company does not has specific mitigation actions. The most forceful action are renewable energy contracts. There is also not a specific monitoring for energy contracts, in terms of objectives and goals, as there is no way of knowing what the non-renewable energy consumption.
	GRI 401: Employment 2016	401-1	New employee hires and employee turnover	52
401-2		Benefits provided to full-time employees that are not provided to temporary or part-time employees	51	
GRI 404: Training and education 2016	404-1	Average hours of training per year per employee	45	
	404-2	Programs for upgrading employee skills and transition assistance programs	45	

Energy resources

GRI Standard/G4	Disclosure	Page	Response
GRI 3: Materials Topcs 2021	3-3	Management of material topics	82
			There is no mapping of objectives, targets and indicators for evaluate the progress of the topic. There were no lessons that led to changes to its policies or practices. In many cases, the impacts are known in a general and are not under the management of Ferbasa. Ex. Power generation through fossil fuels. For this reason, the Company does not has specific mitigation actions. The most forceful action are renewable energy contracts. There is also not a specific monitoring for energy contracts, in terms of objectives and goals, as there is no way of knowing what the non-renewable energy consumption.
GRI 302: Energy 2016	302-1	Energy consumption within the organization	84
	302-4	Reduction of energy consumption	There was no reduction.

Fair hiring practices, health and safety

GRI Standard/G4	Disclosure	Page	Response	
GRI 3: Materials Topcs 2021	3-3	Management of material topics	55	
	403-1	Occupational health and safety management system	55	
	403-2	Hazard identification, risk assessment, and incident investigation	55	
	403-3	Occupational health services	55	
	403-4	Worker participation, consultation, and communication on occupational health and safety	55	
	GRI 403: Occupational health and safety 2018	403-5	Worker training on occupational health and safety	55
		403-6	Promotion of worker health	55
		403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	55
		403-8	Workers covered by an occupational health and safety management system	55, 57
		403-9	Work-related injuries	58, 59
403-10		Work-related ill health	We hadn't cases of professional diseases in this period.	

Extra gri disclosures - disclosures that are not included in the materiality, but which ferbasa has decided to report in accordance with previous reporting and for comparison purposes, or due to the importance of the topic.

GRI Standard/G4	Disclosure	Page	Response
GRI 201: Economic performance 2016	201-1	Direct economic value generated and distributed	111
	201-4	Financial assistance received from government	111
GRI 203: Indirect economic impacts 2016	203-2	Significative indirect economic impacts	99
			There is no government participation in the structure shareholder of the organization
GRI 301: Materials	301-2	Recycled input materials used	91
GRI 415: Public policy	415-1	Political contributions	No donations or support were made to organizations policies in the last 3 (three) years.
GRI G4: Mining and metals sector disclosures - Labor/ Management Relations	MM4	Number of strikes and lock-outs exceeding one week's duration, by country	There were no records of strikes in 2022.
			In compliance with current legislation, Ferbasa maintains all Mine Closure Plans - PFM of mining processes covered by legal obligation. To know: Thirteen (13) mining operations with a Mine Closure Plan: Vale do Jacurici Mining Group - Jacurici Mine - Ore Chrome Campo Formoso Mining Group - Coitezeiro Mine - Ore of Chrome Damacal Mine - Limestone Jacaré Mine - Quartz Mina Rancho Alegre - Quartz Mina Itapura - Quartz Campinhos Mine - Chrome Ore Mina Sacambira - Quartz Mina Bela Vista - Quartz Mina Tiririca - Quartz Mina Araticum - Clay Juruaba Mine - Clay Limoeiro Mine - Clay
GRI G4: Mining and metals sector disclosures - closure plans	MM10	Number and percentage of operations with closure plans	92
			All legally mandatory processes are duly instructed with the respective Mine Closure Plans, or that is, 100% of operations, in accordance with legal regulations. Ferbasa keeps Provisioning updated annually Financial Report for Mine Closure, with reports that identify actions specific to the mine closure phase, such as environmental recovery, demobilization and disposal of scrap and others, and, based on this information, sizes and provisions the values for these actions, in the mining units.