

Sustainability Report **2024-2025**





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01 Introduction

About this report
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About this report

[GRI 2-1, GRI 2-2, GRI 2-3, GRI 2-4, GRI 2-5, GRI 2-14]

To demonstrate our increasingly strong commitment to our socio-environmental agenda and to provide greater visibility to the initiatives implemented during the year, we wish to present the fifth publication of our Sustainability Report, which was prepared based on the 2021 Standards of the Global Reporting Initiative (GRI), and the principles established by the International Sustainability Standards Board (ISSB) and guide the Integrated Report. The report also addresses themes related to disclosure and metrics for the Sustainability Accounting Standards Board (SASB) for the Metals and Mining and Machinery and Industrial Goods sectors, as well as recommendations from the Task Force on Climate-related Financial Disclosures (TCFD). The contents of the report and performance data were correlated with the United Nations' (UN) Sustainable Development Goals (SDGs).

The document consolidates information, indicators and highlights of the management of Tupy SA's activities during the period from January 1 to December 31, and coincides with the dates considered in our financial statements.

The report covers operations in Brazil (Betim, Joinville and São Paulo¹), Mexico (Ramos Arizpe and Saltillo), Portugal (Aveiro), and offices in the United States (Detroit) and Europe (Munich, Germany; Turin, Italy; Arnhem¹, the Netherlands; and Luxembourg¹).

The data for this report was collected internally, with the support of a third-party consultancy and without external verification, and the scopes 1 and 2 of the Greenhouse Gas (GHG) inventory and the Value Added Statement (DVA) are verified by an independent third party. The Executive Board was responsible for verifying the information presented and the Board of Directors was responsible for approving the Report after analysis and favorable opinion was provided for the Strategy, Innovation and Sustainability Committee (CEISus). Changes to the data published in previous editions will be clarified throughout this Report.

Questions or suggestions about this report can be sent to the email sustentabilidade@tupy.com.

1. Subsidiary .

Methodology



Based on GRI standards.



Presents guiding principles for Integrated Reporting (ISSB).



Addresses themes from the Sustainability Accounting Standards Board (SASB).



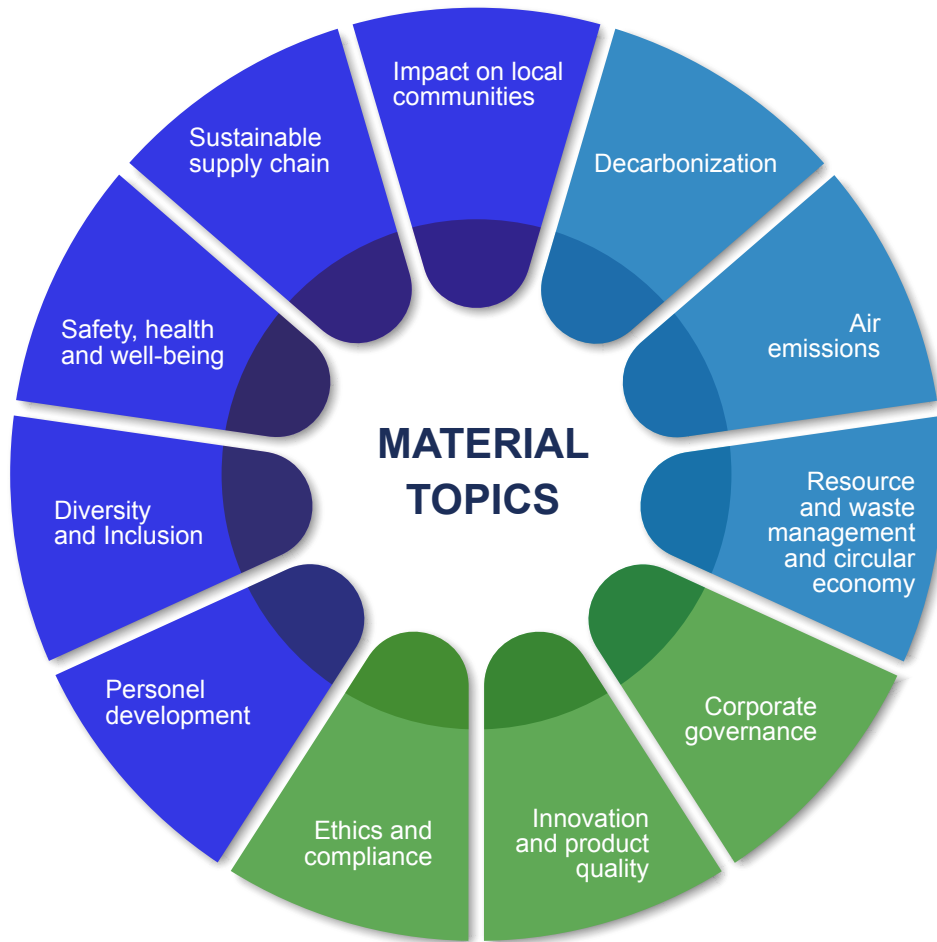
TASK FORCE ON
CLIMATE-RELATED
FINANCIAL
DISCLOSURES

Addresses recommendations of TCFD.

The main highlights of this Report can be accessed in the 2024 Executive Summary, available at this [link](#).

Material topics

[GRI 3-1]



► Environmental

► Social

► Governance

Materiality

[GRI 3-1, GRI 2-14]

The topics considered material for Tupy's sustainability management were reviewed in 2023, in order to connect the content of subsequent reports with business priorities and the perceptions of our main stakeholders. We also work with the concept of double materiality, which highlights the need for organizations to assess not only how their activities have an environmental and social impact on surrounding areas, but also how these external factors affect the Company's financial performance and may pose a risk to the sustainability of our business.

The review of our materiality consisted of five phases: identification of topics based on the business strategy, benchmarking studies with 11 Brazilian and foreign companies, and sustainability guidelines and standards; consultation with management to assess the relevance of the topics; prioritization of aspects through the perception of the parties involved; validation based on analysis of the topics by the Strategy, Innovation and Sustainability Committee (CEISus) and definition of the final list of topics and approval from the Board of Directors. At the end of the study, the topics were validated by the chairpersonship and CEISus, with the decision to maintain the topics of the materiality process carried out in 2022, with an expansions only made to topics Waste management and circular economy, which now includes Resource management. As a result, three environmental topics, five social topics and three governance topics were maintained.

The full list of themes, scope, impacts and indicators of the material topics is presented in the Annexes – Complementary indicators.

Message from the CEO

[GRI 2-22]

Thinking about future generations is essential for sustainable development. In business, this means acting responsibly, seeking not only business continuity but also building a positive legacy for society.

The company we will be in the future is being built every day. We have become a global company and dedicate our activities to products and services related to cargo transportation, infrastructure, and food production. These are fundamental and essential items for a dignified life. In addition, we have continuously brought technological advances that seek to generate economic efficiency for society.

Decarbonization remains one of the priorities in our solutions. For many years, we have been committed to technologies and services associated with a viable energy transition that, in addition to reducing our carbon footprint, promotes economic efficiency. Whether in the development of structural materials and components, biofuels, compatible

engines and equipment, or in the adoption of cleaner industrial processes, we remain committed to innovation, competitiveness, and environmental responsibility.

Everything we deliver to our customers is the result of investments in research carried out since the 1970s. Throughout Tupy's history, in addition to a passion for knowledge, built collaboratively, the consistency of our actions stands out. Since our founders, we have been guided by a history of devotion to technical knowledge, innovation, and research, as well as a concern for the company in a dimension beyond business, thinking about its impact on society.

Our portfolio has also grown in terms of quantity, variety, and potential of the solutions offered. We have expanded our operations through new contracts with customers and the expansion of services offered, such as machining, assembly, vehicle transformation, and

Bioplintas. These advances reflect the strength of our business model, detailed throughout this Report.

And to nurture long-term relationships with employees, customers, suppliers, technology partners, and the communities in which we operate, we need to continuously generate value.

Reducing the accident frequency rate to the lowest level in Tupy's history, for example, is an achievement celebrated daily by our employees and, especially, by their families. Although we have not yet achieved our goal of zero accidents, this result reinforces that our efforts to promote safer and healthier environments are having an effect. Only with a committed team, working in a safe and respectful environment, and valued on merit, is it possible to achieve the transformations that are taking place at Tupy.

Another indicator where we have made progress is the representation of women in executive positions, 27% of whom were

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promoted or hired in 2024, as a result of initiatives aimed at diversity and, above all, the inclusion of all people.

Looking at the financial results, operational efficiency and management discipline have led us to new records. In 2024, we achieved the highest cash generation ever recorded by the Company, R\$1.4 billion, and the highest Adjusted EBITDA, of R\$1.3 billion. Tupy continues to be the largest contributor to Brazil's auto parts trade balance.

Our more than 7,000 suppliers are also part of this value creation, and we have supported them in developing policies and processes that help them implement social and environmental practices. Our network of partners also includes universities, technological institutes, and startups, which allow us to remain at the forefront of technology and anticipate solutions for the market.

All the knowledge generated within Tupy is translated into the products and services we deliver to more than 40 countries. But beyond our business vision, what drives us is the transformation we promote in essential sectors, which enable a better quality of life, especially for our nearly 19,000 employees, their families, and the communities where we operate.

These achievements are the result of the commitment and dedication of our entire team. To each one of you, my sincere thanks for being part of this journey and contributing to Tupy's success. I am ending an important cycle. Together with you, over these 33 years, I have sought to build a legacy based on purposes that motivate us and honor the history of this Company. Thank you for the immense honor of serving this exceptional team. Serving as CEO of Tupy has been a great achievement in my professional life.

To future generations, we leave the desire that innovation continue to be a method for creating increasingly sustainable solutions. I leave with the certainty that everything we have planned has fertile ground to bear fruit.

I invite you to learn more about this journey of transformation, challenges, and achievements in the following pages of this Report.

I wish a bright future for the glorious Tupy.

Beyond our business vision, what drives us is the transformation we promote in essential sectors, which enable a better quality of life, especially for our nearly 19,000 employees, their families, and the communities where we operate.

**Fernando
Cestari de Rizzo**
CEO





Financial Capital

R\$1.4 billion

in operating cash flow generation

R\$1.3 billion

in adjusted EBITDA

New contracts

with an expected annual revenue of R\$250 million



Human Capital

10% reduction

in the accident frequency rate

258 thousand

hours of training

27% of women

in executive positions were promoted or hired in 2024.



Manufactured and Intellectual Capital

Top 10

in the 100 Open Startup Ranking

R\$58.5 million

in R&D investment

3rd Bioplant project signed



Social and Relationship Capital

R\$3.6 million

invested in social impact initiatives

28% expansion

of the Parts Distribution Center (PDC)

7,189

active suppliers



Natural Capital

8% reduction

in the particulate matter emissions index

13.4% decrease

in the landfill waste index

Over 183,000 tons

of waste transformed into coproducts

Highlights of the year



02 Discover Tupy

Who we are
Awards and recognitions
ESG scores and commitment

Who we are

[GRI 2-1, GRI 2-6]

Tupy is a Brazilian multinational with almost nine decades of history and operations in over 40 countries. We are publicly traded with shares listed on the Brazilian stock exchange (B3) since 1966 and, in 2013, we joined the Novo Mercado, a listing segment intended for trading shares of companies that voluntarily adopt corporate governance practices in addition to those required by Brazilian law and the Brazilian Securities and Exchange Commission (CVM). Tupy develops and produces highly complex geometric and metallurgical cast iron structural components to offer solutions to a wide range of sectors, such as cargo transport (across all transport modalities), infrastructure, agribusiness and power generation. Technological innovation and

the technical knowledge of our employees are our hallmark within the marketplace. We rely on over 18,000 employees who are committed to the mission of providing high-value products and solutions, following the principles of valuing people; customer orientation; integrity; commitment; transparency; health and safety; communication; learning and innovation; economic excellence; care for the environment and positive impact on the community.

The services we offer include casting, machining, assembly, technical validation and engineering activities associated with these areas, which have been expanded following recent acquisitions. We invest into continually expanding our capability to offer

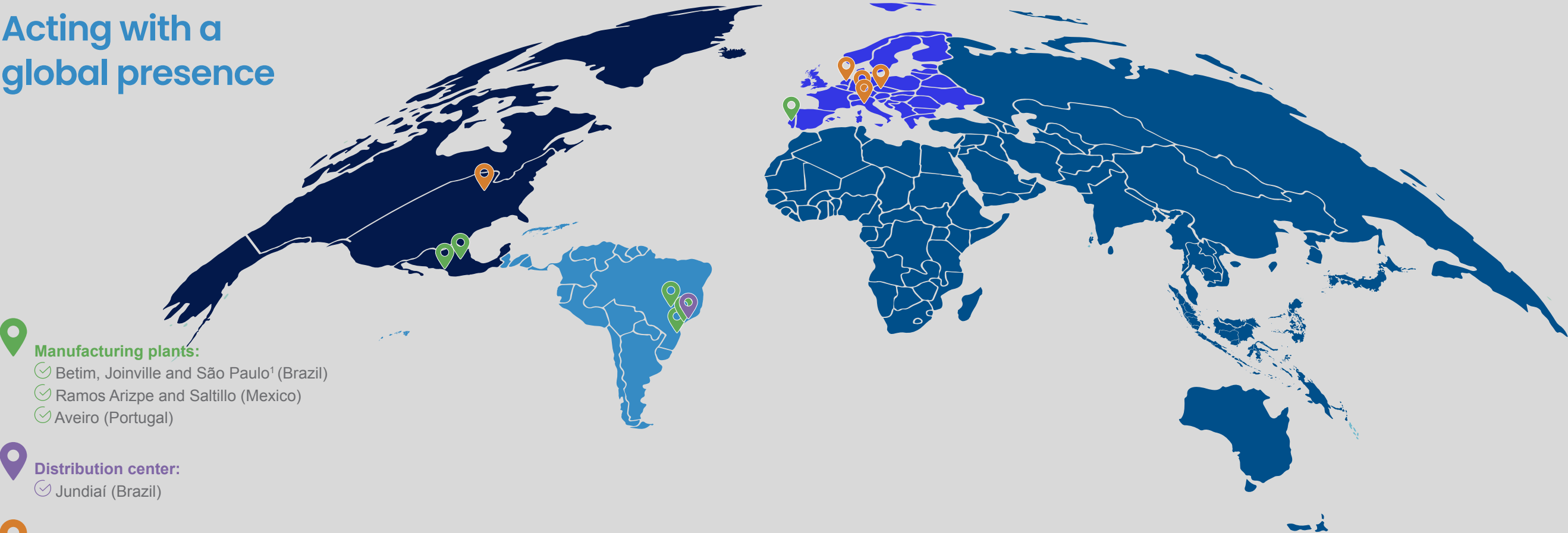
economical and cleaner solutions, with an Energy and Decarbonization portfolio that includes biogas and biomethane engines and generator units, as well as complete and customized solutions, from waste management to the generation of biofuels, electricity, organomineral fertilizer and green carbon dioxide. We also operate in the distribution market, with pipe fittings and spare parts, through an authorized network of resellers. Additionally, we produce and supply vessel propulsion systems in the maritime sector.

With a strategy connected to society’s challenges, our solutions meet essential needs that contribute to a better quality of life for people: basic sanitation, drinking water, food, housing, and mobility.

More information about our operations and portfolio can be found in the **Strategy and business model chapter**. Learn more about [Tupy](#) and [MWM](#) products and solutions.



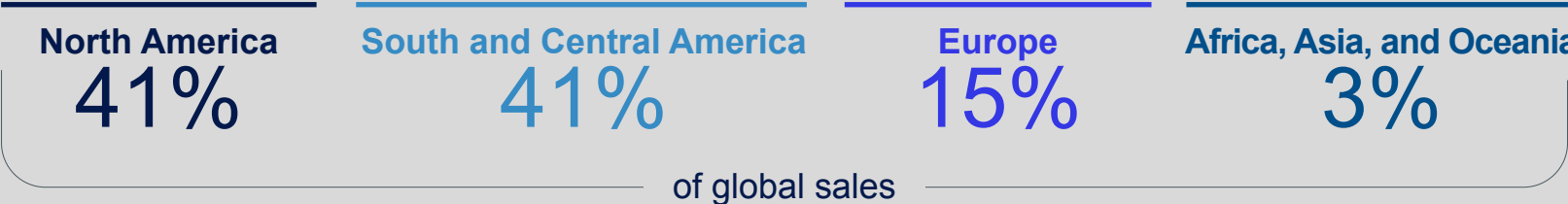
Acting with a global presence



- Manufacturing plants:**
- ✓ Betim, Joinville and São Paulo¹ (Brazil)
 - ✓ Ramos Arizpe and Saltillo (Mexico)
 - ✓ Aveiro (Portugal)

- Distribution center:**
- ✓ Jundiaí (Brazil)

- Offices:**
- ✓ Arnhem¹ (Netherlands)
 - ✓ Detroit (EUA)
 - ✓ Luxembourg¹ (Luxembourg)
 - ✓ Munich (Germany)
 - ✓ Turim (Italy)



1. Subsidiary.

Awards and recognitions



EXAME Best and Biggest 2024 Ranking
Tupy was named 6th best Company in Brazil within the Capital Goods sector, according to the EXAME Best and Biggest 2024 Ranking, produced by the editorial team in partnership with IBMEC. Tupy rose three positions compared to last year.



Best in Exame ESG Award
Tupy was one of the highlights in the Capital Goods and Electronics category of the Best of Exame ESG Awards, an annual award that recognizes companies making the greatest contribution to sustainable development.



Top 500 South Award
Promoted by Grupo Amanhã and PwC Brasil, the ranking of the 500 largest companies in the South highlights the largest companies in this region of the country. Tupy was ranked 6th in the Top 10 largest companies in Santa Catarina, where the Company is headquartered.



Valor 1000
Tupy ranks 102nd in net revenue in the Valor 1000 award from Valor Econômico newspaper, rising 9 positions compared to the previous year. We were also considered under the survey to be best and largest Company in the Metallurgy and Steel sector in southern Brazil.



Ser Humano SC 2024 Award
Our HR practices – represented by the Viva+ programs, focused on comprehensive health services; Gerar, dedicated to pregnant employees; and the internal communication app TupyOn – were all recognized by the Brazilian Human Resources Association (ABRH-SC).



Ranking 360° Época Negócios
Award that evaluates companies based on six dimensions: Innovation, Future Vision, Financial Performance, ESG/Governance, ESG/ Socioenvironmental and People. Tupy is among the five outstanding companies in the Mechanical and Metallurgy sector, moving up one position compared to the previous edition.



Ranking 2024 100 Open Startups
Once again, our work with startups was recognized by 100 Open Startups and, this year, we were awarded 7th place in the Top 10 of Open Corps, in the Mining and Metals category, advancing one position compared to 2023.



Valor Inovação 10 anos Award
Tupy moved up two positions and ranked was 2nd in the Capital Goods category and 47th in the Valor Inovação Brasil 2024 ranking, from among the 150 most innovative companies in the country, advancing 44 positions compared to the previous year.



Destaque Educação SESI SENAI 2024 Award
Award granted by the Youth and Adult Education (EJA) Santa Catarina by SESI/SC – Social Service of Industry. The initiative recognizes industries and municipalities with the highest number of enrollments in the EJA program, which offers training to Elementary and High School students.



Magneto de Ouro Bosch Award
Tupy received the Bosch Magneto de Ouro Award 2024, in the Sustainability category, with the project on the reuse of effluents in its plants. The award from Bosch Latin America recognizes of the best suppliers of the year.



ESG scores and commitments

[GRI 2-24, GRI 2-25, GRI 3-3 Corporate governance]

Tupy’s sustainability strategy and commitments are based on the conviction that our technologies can help solve the world’s major social challenges and promote better living conditions, reducing our impact on the environment and increasing value within society. We are evaluated by agencies that analyze risks in terms of environmental, social, and governance related aspects and create ratings to classify companies. This evaluation is of great importance for us in understanding the market’s perception of our ESG strategy and practices, contributing to the process of continuous improvement in our management.

S&P Global Ratings rated us 42, up 4 points in 2023, and 50% above the average rating in the Capital Goods/Electrical Machinery and Equipment category. Sustainalytics granted us a score of 20.3, drop in performance by 3.4 points in 2023. We were rated up by MSCI, maintaining our BBB rating.

	2022	2023	2024	Performance
	C	C	C	↔
	B	BB	BBB	↑
	31	38	42	↑
	18.8	16.9	20.3	↓

Our concern for sustainable development is expressed in Tupy’s values by showing care for people, the environment, and integrity when conducting business. We have reaffirmed our position by taking on external commitments with other organizations, which enhances our efforts on behalf of the ESG agenda.

In 2024, Tupy became part of the Cooperation Agreement for Low Carbon Mobility in Brazil - MBCB, aimed at promoting a transition in the country’s transport sector, respecting technological neutrality and stimulating neo-industrialization. Another important initiative was the participation of our CEO, Fernando Cestari de Rizzo, in the 2nd National Seminar on Industrial Policy – Green Industry: Innovation and Sustainability, where he presented Tupy’s decarbonization journey on the panel

Success Stories in the Development of Green Solutions, Energy Transition and Decarbonization, demonstrating our commitment to a low-carbon economy.

We would also like to highlight Tupy’s participation in B20 Brazil, a forum that connects the business community to the governments of the G20 (group of the world’s largest economies), where policy recommendations were formulated by different task forces, including the digital transformation task force, led by our CEO. At the end of the forum, the **B20 AI Platform** which was developed jointly by Tupy, Google and Stefanini Group, and brings together the recommendations and actions needed to expand access and ensure responsible use of technologies.



03

Strategy and business model

Strategic drivers
Business model

[GRI 2-22]

Tupy offers viable and scalable solutions to address society’s challenges, based on the continuous evolution of technical capacity and technological innovation; and the diversity of products, services, and markets.

As the population grows and urbanization increases, so does the demand for food, basic sanitation, housing, and mobility. This growth reflects the search for a better quality of life and also has an impact on increased demand for energy, a sector that accounts for 34% of GHG emissions¹, the gases responsible for climate change.

As we move towards a low-carbon economy, we understand that it is important to pursue a fair energy transition that allows society’s essential needs to be met without increasing the cost of living or widening inequalities. The balance between lower environmental impact and affordability for all is the basis for promoting viable decarbonization. This concept guides the company’s strategy.

1. Source: INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC). Climate Change 2022: Contribution of Working Group II to the Sixth Assessment Report (AR6). 2019. pp. 236–237.

Strategic drivers

[GRI 2-6]

Since its foundation, Tupy has made a significant contribution to society through the technologies it develops. Our solutions in the transportation, infrastructure, and agriculture segments contribute to ensuring access to essential goods and services in an increasingly cost-effective manner, and to the transition of these sectors towards sustainable development.



Strategy map





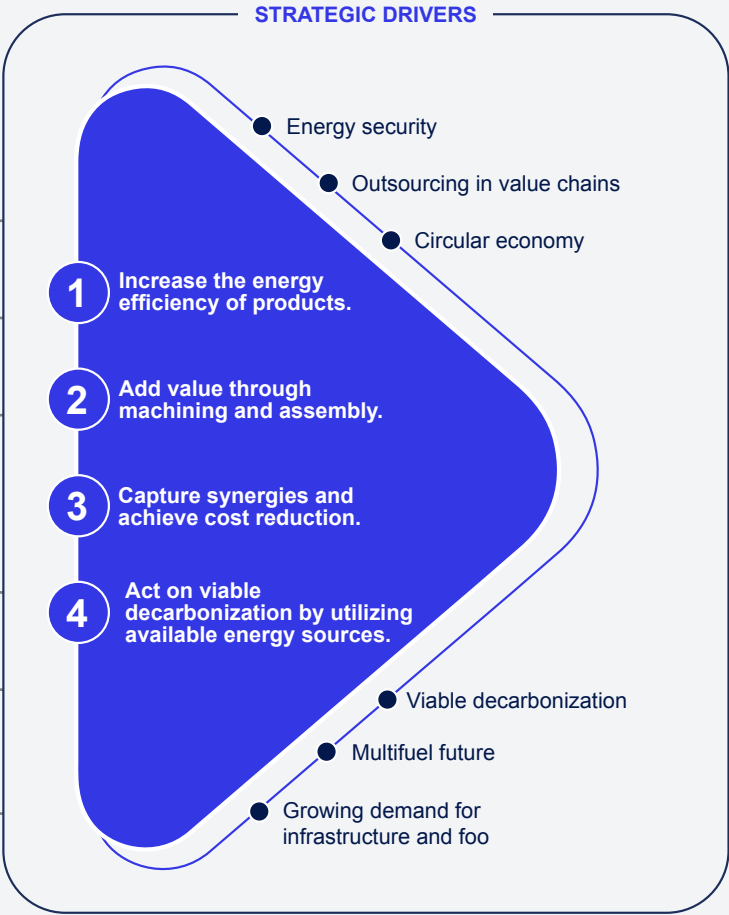
Business model

[GRI 2-6]

Tupy’s business model represents the way in which the Company captures value from the capitals that are essential to the development of its activities – financial, manufactured, natural, intellectual, human, social, and relationship – and how

they are transformed throughout the production cycle, according to the strategic drivers, in order to achieve the best results and share the value generated with all stakeholders.

	VALUE CAPTURE	VALUE CREATION
FINANCIAL CAPITAL	Cash generation or capital market resources for the production of goods and services and business expansion.	Cash and debt management, cost control, risk management, capture of synergies from operations.
MANUFACTURED CAPITAL	Industrial units, offices, distribution centers, machining and assembly, industrial equipment and machinery, and technical laboratories.	Allocation of investments in modernization and expansion of assets that increase our competitiveness.
NATURAL CAPITAL	Natural resources (scrap metal, sand, resin, coal dust, coke, natural gas, electricity, and water).	Reducing the consumption of natural resources, using recycled materials, reusing and recycling waste, and minimizing atmospheric and GHG emissions.
INTELLECTUAL CAPITAL	Tacit knowledge, organizational rules and procedures, corporate systems, patents, licenses, technologies, R&D projects. It also includes processes for sharing and generating knowledge through connections with other players in Tupy’s network of relationships.	Development of new products and solutions, with a focus on the decarbonization journey, product improvement, and operational improvements through technologies and digital transformation.
HUMAN CAPITAL	Individual skills, knowledge and abilities of professionals.	Job creation, talent development, promotion of health, safety, and quality of life, actions to align the workforce with the corporate culture and strategy.
SOCIAL AND RELATIONSHIP CAPITAL	Relationships with communities and the value chain, sharing values, building a brand and reputation.	Socio-economic development through job creation, injection of resources into the economy, social investment in communities, and stimulating the value chain for sustainable growth.

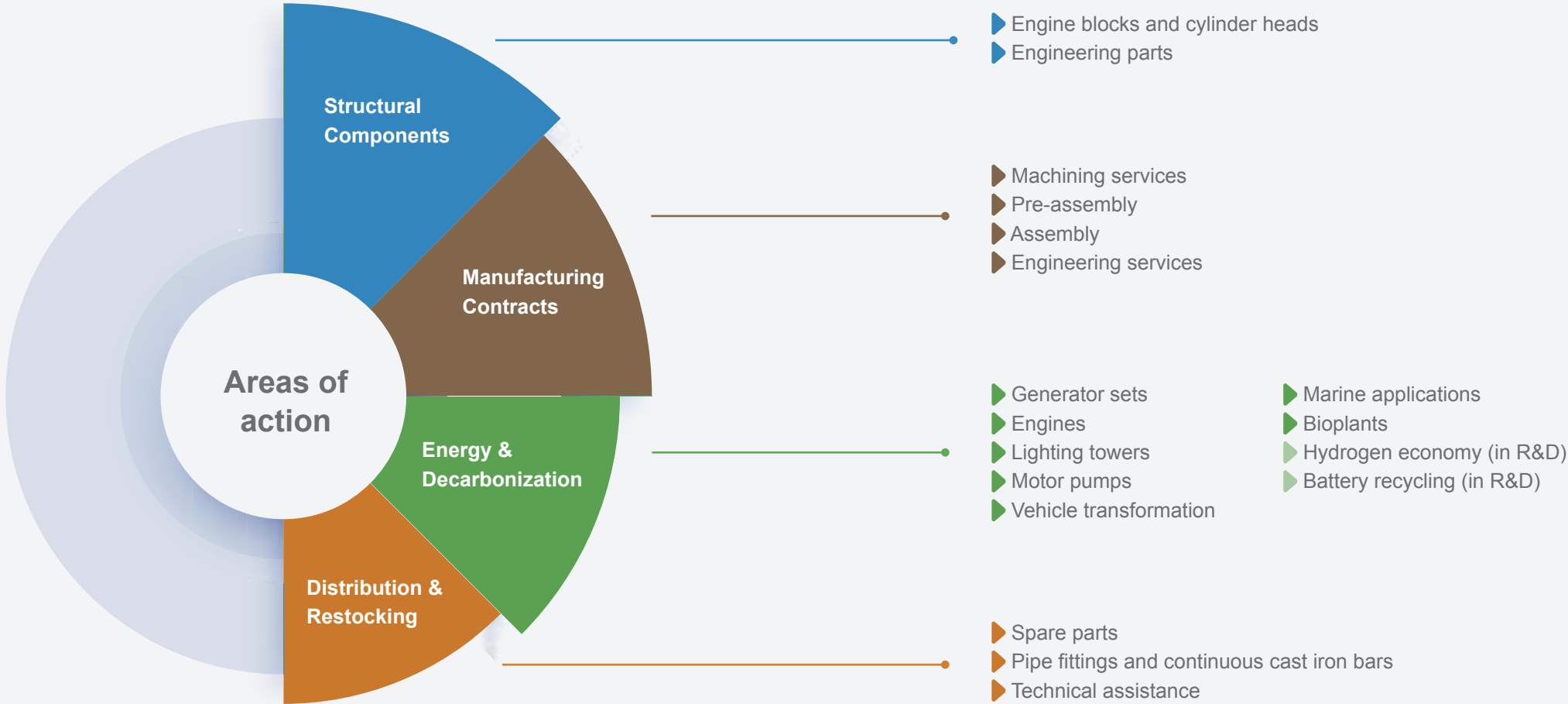


SHARED VALUE
R\$82.4 million in net profit. R\$1.3 billion in EBITDA. R\$325.5 million in dividends paid to shareholders.
R\$469 million in Capex investments. 12 business units.
R\$30.8 million invested in environmental improvements. 95,6% metallic material is recycled.
R\$58.5 million investment in R&D. 20 patent families. 55 laboratories. 3.9 mil technicians and engineers. 45 projects developed from open innovation initiatives.
18,747 direct and indirect jobs. R\$2.2 billion in salaries and benefits. 258 thousand hours of training.
R\$7.6 billion paid to suppliers. R\$3.6 million invested in social initiatives. 57.2 thousand people benefited by projects in the communities.

Our action fronts

[GRI 2-6, GRI 3-3 Decarbonization]

In order to be the main capital goods partner, increase efficiency and capture synergies in our business, we have structured 4 fronts of action:



Main characteristics of the new business model:

► **Portfolio expansion:** in addition to structural components, Tupy offers manufacturing contracts, with the delivery of products assembled to order and the provision of engineering services for a multi-fuel future. It also offers its own products and those of its partners to the maritime sector to provide nautical propulsion with national manufacturing and on-board energy.

► **Investments in energy and decarbonization:** the Company is investing in technologies that promote energy efficiency, the use of available energies and technological innovation for new businesses, with a focus on Brazilian agribusiness and the use of gas from solid urban waste, with a platform for the manufacture of generator sets and biofuel engines, as well as progress in the hydrogen chain.

► **Extensive distribution and technical assistance network:** restocking market for engine and generator components and hydraulic products, with a variety of industrial applications.

This form of organization allows us to respond faster and more efficiently to the particular demands of each business front, optimizing our industrial vocation to solve complex challenges in a scalable way.

This is only possible thanks to the existence of a culture focused on Research, Development and Innovation (RD&I) as a method and aimed at generating value, based on a highly qualified technical staff and the active participation of all levels of the organization, from its structure of committees linked to the Board of Directors to operations.

With a focus on sustainable development and business longevity, we have the involvement of the Board of Directors, especially the Strategy, Innovation and Sustainability Committee (CEISus). The integrated vision of the three topics, in the same committee, helps to ensure that sustainability permeates the organization and our investments.

This vision is materialized on all business fronts, especially Energy & Decarbonization, which offers viable solutions that enable the use of alternative fuels and cleaner energy sources, as well as improving efficiency and promoting the use of wasted energy.

The industry is dedicated to solving challenges and this is only possible with engineering, RD&I as a method and the goal of generating value. Tupy has transformed its portfolio and continues to seek innovative and sustainable solutions for the demands of the future.



04

Corporate Governance

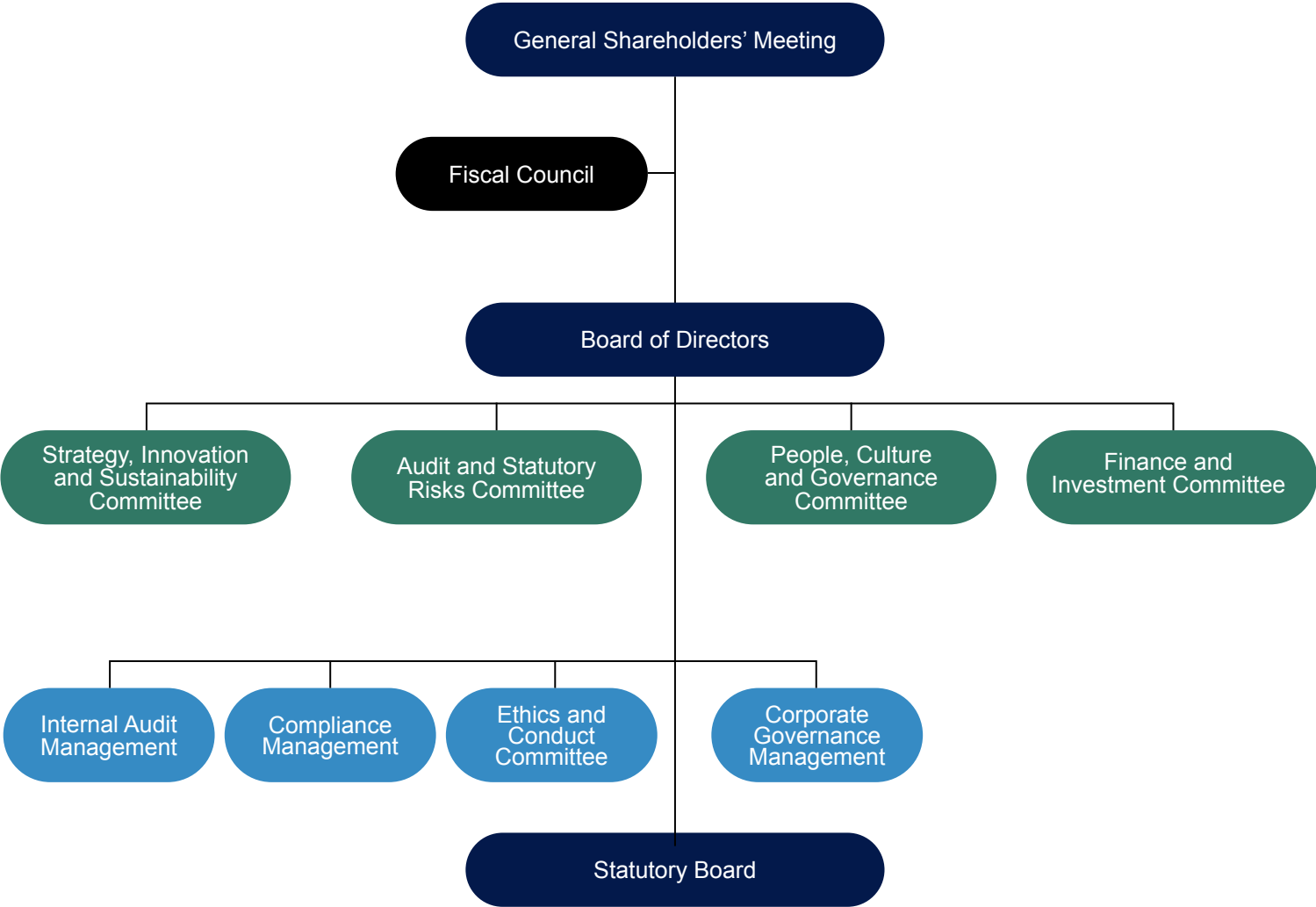
Governance structure
Risk management
Ethics, integrity and compliance
Investors

Governance structure

[GRI 2-1, GRI 2-9]

As a publicly traded Company with shares listed on the Brazilian stock exchange, B3, and participation in the Novo Mercado, we have adopted a

corporate governance structure made up of decision-making and strategy advisory bodies, which are aligned with our ethical principles, transparency, and respect for stakeholders.



General Shareholders’ Meeting

[GRI 2-16]

Meetings are held annually and, on an extraordinary basis, when necessary or if the company’s interests require a statement from the shareholders.

Fiscal Council

[GRI 2-9, GRI 2-13]

Responsible for supervising the legal, regulatory, and statutory compliance of the acts carried out by the bodies and members of the administration and consulting on certain matters submitted for resolution at the General Shareholders’ Meeting.

Board of Directors

[GRI 2-9, GRI 2-11, GRI 2-12, GRI 2-13, GRI 2-16, GRI 2-17]

The Board of Directors is responsible for the strategic direction of the company’s business, taking into account the risks and opportunities and the economic, environmental, and social impacts; for supervising and guiding the Executive Board; as well as monitoring the risk management and internal control systems; the integrity program and the audit plan.

It is made up of nine members, with a two-year term of office, elected and removable by the General Shareholders’ Meeting. All the effective members elected are independent, in accordance with the applicable regulations. Among the members, there

are two women, including the chairwoman of the Board, who does not hold an executive position in the Company.

In 2024, the Board met 22 times, with 15 ordinary meetings and 7 extraordinary meetings. The body has four committees, responsible for advising on specific issues according to their respective areas of activity: the Audit and Risks Committee (CAE), which is statutory in nature; the Strategy, Innovation and

Sustainability Committee (CEISus); the Finance and Investment Committee (CFI) and the People, Culture, and Governance Committee (CPCG).

It is worth noting that the members of the Board of Directors and the CEISus participated in several sustainability agendas throughout 2024, covering topics related to climate, regulations, and governance practices.

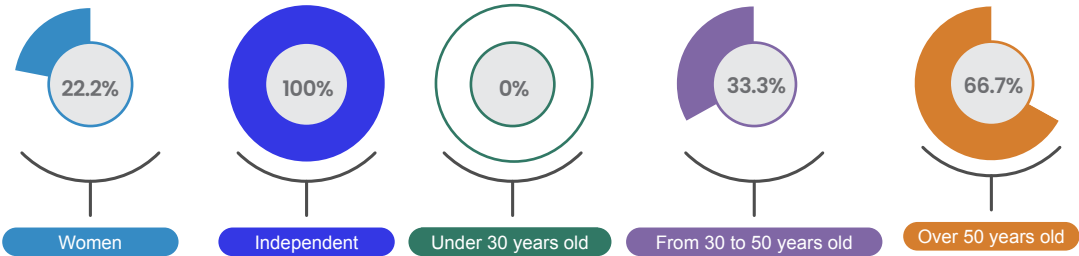
Statutory Board

[GRI 2-9, GRI 2-13]

In compliance with the limits set by law and our Bylaws, the statutory directors are responsible for carrying out all the actions necessary for the proper performance of the business, in line with Tupy’s strategic planning.

Board composition

[GRI 405-1]



Find out more about the composition of the Board of Directors, Statutory Executive Board, Fiscal Council and Committees.

We are certified by **Women on Board (WoB)**, an independent initiative supported by UN Women, which recognizes organizations that promote corporate environments with the participation of women on boards of directors or advisory boards.

Performance Evaluation of the Board of Directors

[GRI 2-18]

A board based and individual self-assessment process has been carried out once a year by the Board of Directors since 2014 and by the Advisory Committees since 2015.

Since 2022, the process has been conducted by an independent consultancy and considers, in addition to the self-assessment made by the collegiate bodies, the individual assessment of the members of the Board of Directors, Committees, and the Governance Officer, covering the following dimensions:

- For the Board of Directors:

a) Fulfillment of mandate.

b) Composition and structure.

c) Processes and support structure.

d) Dynamics and effectiveness.

e) Contributions.

f) ESG engagement

- For the Advisory Committees:

a) Execution of the mandate.

b) Team dynamics.

c) Composition and structure.

d) Processes.

e) Contributions.

f) Action plans.

As opportunities for improvement are identified, these evaluated bodies develop, implement and monitor action plans.

Nomination and selection process

[GRI 2-10]

Directors and members of the Advisory Committees are nominated and selected out in accordance with specific rules established in Tupy's Nomination Policy, as well as in compliance with the provisions of the Company's Bylaws, Internal Regulations of the Board of Directors and applicable legislation.

Information on the candidates for the positions is disclosed to the market, in compliance with the rules of the Brazilian Securities and Exchange Commission (CVM). The appointment of the current external members of the Advisory Committees was approved by the Board of Directors on May 16, 2023, according to a list of names made up of qualified professionals with appropriate (technical, professional, academic) experience and aligned with the Company's values and culture, as well as the ethical and behavioral aspects set out in our Code of Ethics and Conduct.



[Click here](#) to access Tupy's Nomination Policy.

Conflicts of interest

[GRI 2-15]

Tupy has implemented a Policy on Transactions with Related Parties and Situations of Conflict of Interest, in line with the recommendations of the Brazilian Corporate Governance Code and B3's Novo Mercado Regulations. To ensure that individuals whose interests conflict with those of the Company can identify themselves and refrain from participating in decision-making, our governance defines additional rules in documents such as the Code of Ethics and Conduct and the Internal Conflict of Interest Standard.



[Click here](#) Tupy's Policy on Transactions with Related Parties and Situations of Conflict of Interest here.



Directors’ remuneration

[GRI 2-19, GRI 2-20]

The total amount of the annual remuneration of managers (members of the Board of Directors and Statutory Executive Board), members of the Statutory Audit and Risks Committee and the Fiscal Council is set at a General Meeting, according to a proposal drawn up by the People Department and reviewed by the People, Culture, and Governance Committee. The proposal is then approved by the Company’s Board of Directors, under the terms of the Remuneration Policy for Managers and Members of Advisory Committees. This policy aims to ensure a value compatible with the functions and risks of each position, maintaining the competitiveness of the total remuneration package, managing costs and encouraging the attraction, retention, motivation and recognition

of the performance and potential of the members, seeking to align the interests of the professionals with those of the Company over the long-term.

The proposal made by the People Department takes into account data collected in a market survey carried out by a specialized consultancy. The procedures adopted by the Board of Directors to define the individual remuneration of the body and the Executive Board are available in item 8.1, “b” of the [Reference Form](#).

The remuneration of the members of the Board of Directors and Committees is fixed and, if a director is also a member of a committee. As a result, he or she receives an additional fee for participation (limited to one additional fee, regardless of the number of committees of which he or she is a member). Statutory directors receive a monthly base salary, short-term variable remuneration – linked to corporate and individual targets set by the Board of Directors – and long-term variable remuneration, which includes an Incentive Plan approved by the General Meeting.

	Fixed remuneration	Additional committee participation (if applicable)	Short-term variable remuneration	Long-term variable remuneration
Board of Directors	✓	✓		
Fiscal Council	✓			
Statutory Audit and Risk Committee	✓			
Other non-statutory committees	✓			
Executive Board	✓		✓	✓



[Click here](#) to access the Remuneration Policy for Directors and Members of Advisory Committees to the Board of Directors.

Remuneration linked to ESG performance

[GRI 2-20]

In its sustainability governance practices, Tupy ties the short-term variable remuneration of executives to the achievement of environmental, social and governance performance targets. It is to the responsibility of the Board of Directors to validate the individual goals of the CEO and other vice-presidents, and these are rolled out to other levels of the organization.

All statutory directors have a portion of their individual targets linked to ESG factors. In 2024, the topics considered included: reducing GHG emissions, expanding energy efficiency actions, developing low-carbon products, social investment, safety at work and promoting diversity and inclusion. The last two targets were shared by the entire Board of Directors.



Sustainability strategy

[GRI 2-22, GRI 3-3 Corporate governance]

Given the importance of sustainability at Tupy, as well as the connection between this key issue and the company’s strategy, the Vice-Chairpersonship of Institutional Relations and Sustainability was created in 2024. Its role is to act as a sponsor in multidisciplinary work to strengthen economic, environmental and social development, as well as business competitiveness and the positive impact on the communities in which Tupy operates.

We also have implemented a Strategy, Innovation, and Sustainability Committee, which is responsible for: advising the Board of Directors on the choice of Company guidelines; assessing research and innovation initiatives and best sustainable practices; and controlling risks related to our scope of action. It is made up of eight members, three of whom are members of the Board of Directors. The board ensures that the significant risks and relevant impacts identified are discussed and communicated transparently and accurately, thus reinforcing our commitment to corporate responsibility and sustainability in business.

This structure contributes to the evolution of the sustainability strategy and the engagement of the Company’s entire value chain. We are convinced that our skills and technologies can contribute to solving major social challenges, promoting better living conditions.

New regulatory demands

Tupy is attentive to changes in the market in relation to sustainability, such as the definition of the Carbon Border Adjustment Mechanism (CBAM) in the European Union, the S1 and S2 standards of the International Financial Reporting Standards (IFRS), as well as the regulation of the carbon market in Brazil. To this end, a specific working group was set up, made up of the Risk Management, Controllershship, Corporate Communication, and Sustainability areas. The team has been mapping out initiatives based on the knowledge gained from participating in the Pioneering Companies Work Group, an external multidisciplinary group that analyzed aspects of the voluntary and mandatory adoption of the Standards. In addition, the Company has been working continuously to develop products and services that enable our clients to remain competitive and, at the same time, comply with the new legislation.

Policies and commitments

[GRI 2-23, GRI 2-24]

The actions of Tupy and its subsidiaries, as well as those of all employees and suppliers, are governed by the guidelines established in the Bylaws, the Code of Ethics, and Conduct and corporate policies. These regulations are reviewed and updated periodically and published on the Investor Relations website.

Compliance with the policies and commitments is verified by the managers responsible and monitored by the Statutory Executive Board and the Board of Directors. Other forms of monitoring and control are external and internal audits, which aim to ensure compliance with applicable technical, legal, and regulatory requirements.

Tupy’s main policies:

- ✓ Code of Ethics and Conduct

✓ General Purchasing Conditions

✓ Corporate Bylaws

✓ Human Rights Policy

✓ Anti-Corruption and Anti-Bribery Policy

✓ Crisis Management Policy

✓ Risk Management and Internal Controls Policy

✓ Integrated Management Policy: Safety, Environment, Quality, and Social Responsibility

✓ Board of Directors and Advisory Committees Member Nomination Policy
- ✓ Integrity Policy

✓ Securities Disclosure and Trading Policy

✓ Donations and Sponsorships Policy

✓ Regulations



[Learn more](#) about our policies and commitments.

Risk management

[GRI 2-12, GRI 2-13, GRI 2-25]

The Board of Directors, with advising from the Audit and Statutory Risks Committee (CAE), assesses our exposure and approves the guidelines for the integrated risk and control management process, including strategic risks, prioritizing the respective response and contingency plans. The measures relating to the most relevant risks are updated every three months by the Company’s managers and previously reported to the CAE.

The Statutory Board is responsible for ensuring the implementation of risk management practices and internal controls, aligning these activities with Tupy’s strategy. For this purpose, we have an Executive Committee for Risk Management and Internal Controls, linked to the Executive Board, which monitors risks and evaluates the effectiveness of mitigating actions and key indicators (KPIs).

In 2024, we implemented the Archer tool to integrate processes acrosses our units, with focus on improving risk management, internal controls, and internal auditing. This system makes it possible to map, identify, and classify the risks of each unit and draw up action plans in a coordinated manner.

With regards to managing risks related to climate change, Tupy carries out an annual assessment based on the Carbon Disclosure Project (CDP) and the Task Force on Climate-Related Financial Disclosures (TCFD) and classifies them as physical or transitional and lists the three main areas for formalization in a matrix.

We also have a Crisis Management Policy in place to guide the adoption of appropriate and urgent responses in situations of this nature, through the planning, implementation, and adoption of previously defined and evaluated measures.

Information Security

[GRI 3-3 Innovation and Product Quality]

Tupy continuously invests in the development and technological updating of systems to improve internal controls and procedures in all our units, in order standardize and govern processes, protect data, and mitigate cyber risks and any impacts on the business.

In 2024, we made further progress in the area of Information Technology with the integration of processes, strategic projects, and cybersecurity, with a self-assessment that resulted in important improvements being implemented.

Our Information and Cyber Security Standard sets out guidelines to be followed by all professionals who use our IT resources. The document, approved by the Executive Board, seeks to preserve the confidentiality and

integrity of information and, in the event of non-compliance with this standard, appropriate disciplinary measures are applied. The issue is presented periodically to the Statutory Audit and Risks Committee, the Fiscal Council and the Board of Directors.

Tupy is also subject to risks associated with non-compliance with the General Personal Data Protection Act (LGPD) and penalties such as fines and other types of sanctions. In order to comply with the provisions of the LGPD, we have implemented internally defined action plans. The Company has also appointed a person to be the channel of communication with data subjects and the National Data Protection Authority (ANPD).



Ethics, integrity and compliance

[GRI 3-3 Ethics and Compliance, GRI 2-23, GRI 2-24, GRI 205-1]

Tupy’s solidity and credibility in the market are due to its ethics and integrity in conducting business and relationships with stakeholders. Our Code of Ethics and Conduct is published on the company’s institutional and investor relations websites, as well as on the CVM and B3’s websites. The code applies to all employees, representatives, suppliers and partners, with 12 ethical principles relating to the commitments of respect for life; people; sustainability; integrity and transparency. The document reflects the Company’s responsibility to defend human rights and to create a working environment where people are treated with dignity and respect.

To formalize our commitment to such an important issue, in 2024 we approved our Human Rights Standard, available on the website and disseminated internally. The document aims to establish the guidelines and general principles for Tupy’s actions to

ensure respect for these rights in our activities and in our relationships with stakeholders. The standard applies to all employees of the Company and its subsidiaries, our representatives and third parties who maintain a direct or indirect relationship with Tupy.

We have an Integrity Program, evidenced in a Policy, which aims to prevent, detect, and respond to incidents. To this end, it establishes initiatives that reinforce ethical values at all levels of the Company. It also defines the main guidelines for the Compliance area to improve existing actions, manage the Code of Ethics and Conduct, and the reporting channel. To ensure independence and impartiality, the area reports directly to the Board of Directors, through the Statutory Audit and Risks Committee. This Committee monitors the

progress of the Integrity Program in all Tupy units on a monthly basis; the quantitative and qualitative indicators for ethical issues, including reports of fraud and corruption; and defines the compliance objectives and targets approved by the Board of Directors.

In 2024, work on the integrity risk assessment work which, carried out every two years, was completed. To mitigate the risks that have been mapped, we have implemented action plans across the group’s units.

We repudiate any practice of exploitation, such as human trafficking, child or forced labor, or labor analogous to slavery, and we demand that the same actions be taken by our business partners.



[Click here](#) to access the Integrity Policy, Code of Ethics and Conduct and Human Rights Standard.

Supplier Integrity Assessment

[GRI 3-3 Sustainable supply chain]

Tupy has a complex supplier management system in place, which requires a rigorous due diligence process carried out by a multidisciplinary team to identify and assess high-risk entities in terms of compliance and reputation. In 2024, no suppliers were added to the restricted list.

Respect for life, people,
and sustainability

Promotion of health and safety

1

Respect for human rights

2

Respect in working relationships

3

Diversity and inclusion

4

Combating harassment
and abusive conduct

5

Commitment to sustainability

6

Our ethical
principles

[GRI 2-23]

Integrity and transparency

7

Respect for laws and regulations

8

Actions without conflict of interest

9

Responsibility in relationships
with third parties

10

Proper use of the Company's assets

11

Confidentiality, privacy
and security of information

12

Responsibility in disclosing information

Communication and training

[GRI 205-2, GRI 3-3 Sustainable supply chain , GRI 408-1, GRI 409-1; SASB EM-MM-510a.1]

The Code of Ethics and Conduct is available on Tupy’s website and clearly presents the values and ethical principles we hold dear and the conduct expected of its managers, employees, suppliers, and business partners. The Compliance area is always looking to implement new practices, and to check and review the actions already underway, with a focus on continuous improvement and progress in the maturity of the Integrity Program.

At the beginning of each year, communication and training plans are defined, setting out the actions to be carried out during the period, with a view to raising awareness and educating people about the importance of ethical behavior. All the Company’s employees receive training on the Code of Ethics during their induction and are informed annually of the results of the indicators relating to the Code. In addition, refresher training is carried out periodically in-person and online, through the GoTupy platform, so we can consider that all

employees are informed and aware of the issue. For the administrative areas, specific training has also been given on our Anti-Corruption Policy and the Conflict of Interest Standard, as well as other leadership training aimed at combating moral and sexual harassment and abusive conduct.

Among the communication initiatives on the subject, in 2024 there were annual campaigns against harassment and conflicts of interest, actions aimed at Tupy’s 12 ethical principles and a total of 46 disclosures on ethics and integrity, with monthly publications.

Also of note is the periodic communication and training of our suppliers, who, from the registration process onwards, must commit to observing and complying with: the Code of Ethics and Conduct; the Integrity Policy; the Anti-Corruption and Anti-Bribery Policy; the Human Rights Standard; and the Conflict of Interest Standard by accepting the documents on the approval portal and

when contracting new business processes. The Company provides ethics channels so that suppliers can report cases that violate these guidelines. In cases of non-compliance, the appropriate disciplinary measures are applied. In 2024, there was no record of any case of violation of our guidelines.

Last year, we held some workshops with suppliers to reinforce practices, including ESG. In addition, our General Purchasing Conditions contain provisions on anti-corruption and social commitments, such as not using child or forced labor; complying with labor laws and conventions on remuneration; working hours; combating discrimination, etc. Failure to comply may result, depending on the severity, in a warning or written notice and even the interruption of business relations, as well as appropriate legal action. In 2024, we did not identify any suppliers with a significant risk in these labor aspects.



Ethics channels

[GRI 3-3 Ethics and Compliance]

Tupy has ethics channels available to receive reports of conduct contrary to the law, internal rules and our ethical principles. The channels are secure, ensuring confidentiality and accessible to all audiences, 24 hours a day, seven days a week. They are managed by a totally independent third-party company, Aliant. Complaints can be made anonymously, in accordance with each country's data processing legislation.

The cases registered through these channels are forwarded for investigation and, once this stage has been completed, are presented to the Ethics and Conduct Committee, made up of an exempt group of executives appointed by the Board of Directors, to decide on the complaints and indicate the appropriate disciplinary measures and corrective actions. For employees, these range from a verbal warning to termination of employment for just cause, depending on the severity.

For third parties or intermediaries acting on behalf of Tupy, they include a warning, interruption of institutional and/or commercial relations, as well as adoption of the necessary legal measures.

The Audit and Statutory Risks Committee monitors the effectiveness of the performance of the Ethics and Conduct Committee in managing complaints and reports, and informs the Board of Directors of any evidence of error or fraud that is important and compromises the reliability

of this governance. Tupy periodically discloses the indicators of the ethics channels to all our stakeholders through the Sustainability Report.

We actively promote communication about advice on conflicts that do not infringe on the Company's values and ethical principles. Opinions, general dissatisfaction, complaints and disagreements can initially be shared with management, the Human Resources business partner or the Compliance area.

Complaint mechanisms [GRI 2-26]

	2022	2023	2024
Number of complaints received	499	513	742
Number of complaints addressed	499	513	742
Number of complaints resolved	407	401	680
Number of complaints registered before the current year and resolved during the year	153	190	290

Measures taken in 2024

The following steps were taken in cases that were well-founded or partially well-founded:

In-house staff:

- ✓

83 guidelines
- ✓

9 suspensions
- ✓

23 warnings
- ✓

31 dismissals

Suppliers:

- ✓

7 notifications



Ethics channels

Site: www.tupy.com.br/etica
E-mail: etica@tupy.com

Phones

Brazil: 0800 721 7895
Mexico: 800 288 0150
Portugal: 800 180 431

In addition to the ethics channels, the e-mail address compliance@tupy.com is available for questions or advice.

Anti-corruption

[GRI 3-3 Ethics and Compliance, GRI 2-23, GRI 2-24, GRI 205-1, GRI 205-3, SASB EM-MM-510a.1]

Tupy has an Anti-Corruption and Anti-Bribery Policy with guidelines for combating all forms of corruption and bribery, as well as guidelines for employees and other professionals who represent us, for situations that may involve or characterize corrupt acts. Instructions are given on the commitment to combating money laundering and terrorist financing, as well as for interactions with the public administration, political contributions and activities, donations and sponsorships, among other situations.

In 2024, 15,405 employees were trained, covering all of the company's business units. Employees who joined the company less than a year ago are not considered among those reported above, as they receive this training when they join.

Last year, we completed another integrity risk assessment, conducted by a third-party company specializing in the subject, which covered 100%

of Tupy's business units. The assessment identified 38 risks, and for all those mapped, we defined action plans aimed at mitigating them and improving internal procedures. No significant risks related to corruption were found, nor did we have any confirmed cases of corrupt conduct or cases that resulted in the dismissal or punishment of employees for this reason. We have also not recorded any cases of termination or non-renewal of contracts with business partners due to corruption-related violations and there have been no corruption-related lawsuits filed against Tupy.

To strengthen the company's commitment to this issue, we have been a signatory since 2022 to the Pacto Empresarial pela Integridade e Contra a Corrupção (Business Pact for Integrity and Against Corruption), promoted by the Ethos Institute. Every year, we update the information on our Integrity Program with the entity to ensure that our adherence to the Pact is renewed.



[Click here](#) to access our Anti-Corruption and Anti-Bribery Policy.





Investors

[GRI 2-29]

We maintain a positive and transparent relationship with investors, moving beyond the legal disclosure obligations, participating in conferences throughout the year and receiving visits from investors to our manufacturing facilities.

On our Investor Relations website offers communication channels for contacting the IR department, access to the materials used in the quarterly disclosure of results, material facts and notices to the market. Investors can also register for the mailing list to receive these updates in their e-mail.

Participation in 14
conferences and live events,
and over 200 interactions with
debt and equity investors, both
in Brazil and overseas.



05 Human Capital

Occupational health and safety
Employee's profile
People management

Occupational health and safety

[GRI 3-3 Safety, health and well-being, GRI 403-1, GRI 403-8, GRI 403-9]

The health and safety of our employees are invaluable values and rank among Tupy's greatest commitments. To make sure honor them with seriousness and responsibility, we rely on an Integrated Health, Safety, Environment, Quality, and Social Responsibility Policy, as well as a Health and Safety Management System based on international standards and legal requirements. This system is standardized and covers all operating plants, employees, contractors and other people who access our units. The Aveiro unit is ISO 45001 certified, while the remaining facilities follow practices in line with the standard. We maintain strict controls and audited procedures to promote a safe and healthy environment.

In 2024, the Occupational Safety area made progress in this journey, with greater consolidation of corporate guides to

standardize and make processes more efficient. We achieved the lowest accident frequency rate in Tupy's history, with an 10% reduction, as well as a 17% reduction in high-potential events compared to the previous year.

Despite the record, our objectives remain focused on eliminating high potential events and strengthen our organizational culture of health and safety. For this purpose, a global target was created to reduce the rate of reportable accidents at work. This was one of the CEO's goals

and was replicated by the Company's remaining executives.

The significant results achieved last year are due to the initiatives, programs and investments made in 2023 and this year. From among the topics invested in, we wish to highlight: machine and equipment protection, process improvements and fire protection systems and electrical installations, thus reducing the risk of accidents that can impact operations and, above all, jeopardize lives.

We achieved the lowest accident frequency rate in Tupy's history, with a 10% reduction, in addition to a 17% decrease in high-potential events compared to the previous year.





In 2024, 829 brigade members were trained.

In 2024, we drew up 11 new corporate standards and automated the management of indicators. We wish to highlight a new Personal Protective Equipment (PPE) technology that can reduce the user’s muscular effort by up to 60%, depending on the activity. It is a wearable exoskeleton that improves ergonomics for employees, reducing effort and contributing to safety and

productivity in operations. The equipment is lightweight, versatile and easy to adapt to. A pilot was implemented with 10 pieces of equipment in use at the Betim (MG) plant, to evaluate and validate the results. It is worth mentioning that this technology was developed by Exy, a startup accelerated by ShiftT, which connects Tupy to entrepreneurs across the country.

Tupy has Emergency Response Plans (PAE) at all its plants and brigade structures that are trained and equipped for preventive actions and responding to environmental, operational and occupational incidents. In 2024, 200 new fire brigade members were trained. To evaluate and improve our ability to respond to possible emergency scenarios, we carry out frequent drills.

Accidents at work¹ – employees [\[GRI 403–9; SASB EM-MM-320a.1, SASB RT-IG-320a.1\]](#)

	2022	2023	2024
Number of hours worked	37,619,498	42,174,759	38,448,574
Number of deaths resulting from accidents at work	0	1	0
Rate of deaths resulting from accidents at work	0,00	0,02	0,00
Number of accidents at work with serious consequences (except fatalities)	1	2	0
Index of accidents at work with serious consequences (excluding deaths)	0,03	0,05	0,00
Number of occupational accidents subject to mandatory reporting (including deaths)	525	417	344
Index of reportable accidents at work (including deaths)	13,96	9,89	8,95

1. The accident rate is calculated as the number of occurrences x 1,000,000/number of hours worked. The information on accidents at work only covers workers who are employees.

Accident prevention

[GRI 3-3 Safety, health and well-being, GRI 403-2, GRI 403-4, GRI 403-7]

Tupy adopts standards and procedures to prevent accidents based on the characteristics of each operation, identifying and assessing the risks at all units, both for routine and non-routine activities, defining a risk matrix and action plans, with the aim of eliminating, reducing and controlling risks. These analyses are updated whenever there are changes to the processes that could impact the health and safety of employees.

In 2024, we carried out programs such as the leadership checklist, with inspections of key topics on preventing high-potential accidents. In order to adopt procedures for critical activities, we relied on the participation of leaders and process specialists in the mapping; and analysts and technicians in the field to assess safety conditions.

Also this year, we began our work on adapting to climate change by establishing certain strategic points in all the plants, so that in times of extreme events these places can serve as shelters. Expansion of training is planned for 2025.

We apply the occupational risk control hierarchy and monitor performance indicators on a monthly basis, which includes frequency and severity rates and high-potential accidents. These indicators are presented at every weekly board meeting. Tupy also has the Golden Rules for Health and Safety in place, under which non-compliance is recorded as serious misconduct and punishable under the disciplinary code.

RISK CONTROL HIERARCHY



Golden safety rules



Safety as a value

No activity can be considered so urgent or so important that it cannot be carried out safely.



Energy control

The lockout system (lock + personal tag) must always be used. During maneuvers, maintenance work, or cleaning of machines and equipment, isolating all energy sources is mandatory.



Safe vehicle operation

The operation of industrial vehicles and mobile equipment must be carried out by qualified, trained, and authorized professionals. Everyone must adhere to speed limits and wear seat belts.



Risk work release and authorization

Work that involves risks and is non-routine will only be carried out with written authorization from the Task Safety Analysis (AST) and/or the Special Work Permit (PTE).



Personal and collective protective equipment

The use of PPE (Personal Protective Equipment) or CPE (Collective Protective Equipment) is mandatory in all operational areas. When performing special tasks, specific equipment must be used, and safety regulations must be followed.



Health and safety prevention

Access to the Company under the influence or possession of alcohol and/or illegal drugs, as well as carrying firearms or bladed weapons, is not permitted.

In order to strengthen our organizational culture with regards to Health and Safety, we encourage active participation of employees in identifying and resolving issues related to safety at work, as well as the use of ethical reporting channels, while ensuring confidentiality and anonymity. We also promote various forums to discuss safety-related issues, such as:

- ▶ Daily Safety Dialogues, with more than 182,000 meetings held throughout 2024.
- ▶ High-potential Event Prevention Committee.
- ▶ Weekly leadership meeting.
- ▶ Fusion area Safety Committee.
- ▶ Daily operational meetings.

Also noteworthy are the routine programs, some of which are carried out by the technical area and others by the leadership, such as: audits, inspections, behavioral observations, safety walks and surprise inspections, inspection of critical equipment and emergency systems.

Training

[GRI 403-5; SASB EM-MM-320a.1, SASB RT-IG-320a.1]

Tupy offers regular training so that employees learn to recognize danger signs and act proactively to reduce risks. It is compulsory for all employees to undergo the training required to carry out their activities, in accordance with the legislation of each country. New hires must take part in health and safety induction programs and the rest undergo recurrent retraining. In 2024, we recorded an average of 6.71 hours of training per employee, which focused on health and safety.

Some operational areas also have an Orientation and Knowledge Fusion Program, aimed at strengthening education on safe operation. And for continuous awareness-raising, we carry out educational campaigns on health and safety, as well as requiring that contractors adequately train their employees.

Health and well-being

[GRI 3-3 Safety, health and well-being, GRI 403-3, GRI 403-6]

Attention and care for employees' health is not restricted to the occupational environment. We prioritize comprehensive health care, with a multidisciplinary team to ensure people's well-being inside and outside of work.

In 2024, we focused on psychological safety, with initiatives aimed at psychosocial aspects, such as preventing mental health illnesses and training leadership to act in a more humanized way and be able to talk about these issues in a natural way.

Our health plans include primary and specialized care, emergency services, as well as partnerships with local clinics and health centers to increase the range of services available. At the units, the internal clinics have specialized and trained teams and operate 24 hours a day, every day, providing assistance to employees and contractors.

As for occupational illnesses, the main types identified at the company include inflammation of tendons and joints; noise-induced hearing loss; intervertebral injuries and problems and wear and tear on joints due to repetitive strain. These are identified through periodic assessments, audiometric monitoring, risk analysis, the Environmental Working Conditions Technical Report (LTCAT), the Risk Management Plan (PGR) and ergonomic reports. Employees who report discomfort or pain undergo a medical assessment at the unit itself and, when necessary, complementary tests are carried out for a more precise diagnosis.

Tupy has an Ergonomics Committee to improve working environments. It also carries out ergonomic analyses and more than 7,950 activities related to the subject. A highlight is the Muscle Recovery Program, implemented for physical rehabilitation and prevention of sick leave. 772 employees were treated and 2,895 physiotherapy sessions were carried out over the past year.

We believe in prevention and healthy habits as the foundations for lasting health, which is why we promote frequent campaigns on topics such as musculoskeletal diseases, hypertension, diabetes, eye health, breast cancer, prostate cancer and mental health, as well as cultural and sports programs. We also carried out vaccination campaigns, administering 6,468 doses of vaccines against influenza and other diseases in 2024.

To encourage the use of alternative transportation and provide more comfort and safety for employees and service providers, our largest bike rack has undergone improvements, including: paving, new lighting, painting, changing the fence, a charging point for electric bikes and an environment 100% monitored by cameras.

It is also worth highlighting the Gerar program, which provides support and assistance from the nursing team to our employees during pregnancy, the puerperium and lactation. Last year, 113 pregnant women were monitored. Among the program's initiatives are: identification of needs; training programs with lectures on pregnancy, breastfeeding and baby health; a lactation room; reassignment to a lower risk job; ongoing medical monitoring; and adapted uniforms.



Viva+ Program

[GRI 403-6]

The Viva+ program, created in 2022, is a reflection of our commitment to the integral health of our employees and includes safety, well-being, physical and mental health initiatives. It is based on guiding managers to observe and identify employee behaviors that require attention, acting preventively and helping to propose appropriate actions.

The program is supported by a medical team, psychologists and social workers, as well as a 24-hour communication channel with nursing professionals to listen and direct people to internal or external care. In occupational consultations, we identify common and chronic pathologies, such as hypertension, diabetes, obesity, respiratory diseases, among others, which enables recommendations, such as using the health plan for regular consultations and routine examinations.

The results achieved in 2024 were:

4,913
multidisciplinary
consultations.

Support for
individuals
with substance

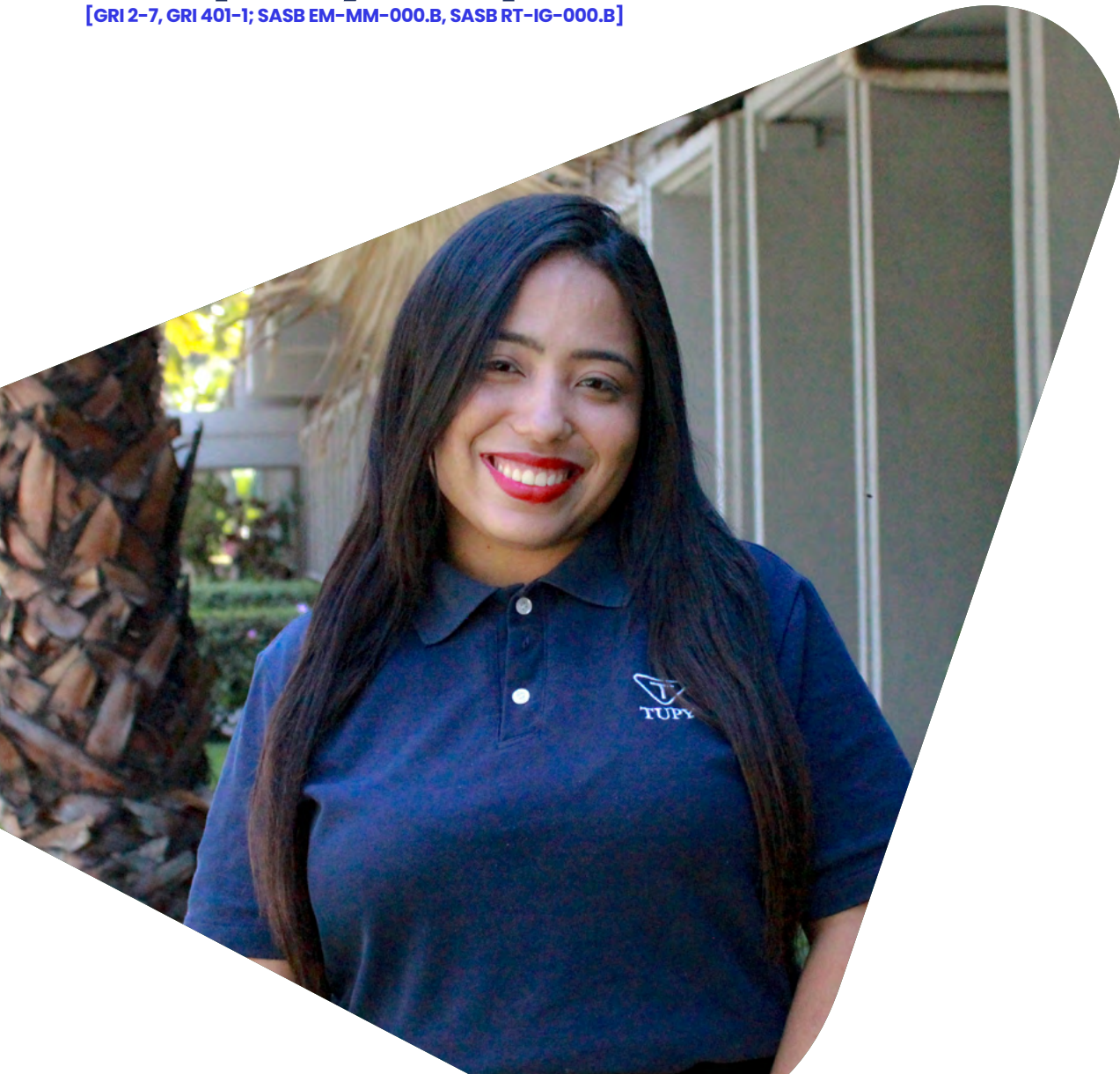
dependence, including referral for external treatment.





Employee profile

[GRI 2-7, GRI 401-1; SASB EM-MM-000.B, SASB RT-IG-000.B]



For 87 years, Tupy has celebrated a successful career built on people, our most valuable capital. In 2024, 4,167 employees were hired, bringing the total to 18,460, considering all the units in Brazil, Mexico, Europe and the USA.

The Company is committed to diversity and inclusive actions to provide equal opportunities and fair treatment for all. We strive to maintain a healthy and safe working environment so that our employees can express their ideas and points of view. We value uniqueness within social markers such as race,

ethnicity, gender, sexual orientation, religion, origin, social class, age, nationality, physical ability or other diversity, whether visible or not. The plurality of our workforce intensifies every year and we currently have four generations working within the company, as well as continuing to attract immigrants from different regions and nationalities.

Diversity and Inclusion (D&I) are part of our Code of Ethics and Tupy’s daily commitment to all people, so that each one feels respected and part of the Company. Our practices related to this topic are part of strategic organizational guidelines that have a positive impact on business and make up the goals of the statutory directors, as well as other executives, to increase the number of diverse leaders in the Organization.

18,460
employees

23
nationalities

1,706
women

16,754
men

Valuing uniqueness is among our organizational priorities in People Management.

Actions arising from the Diversity Census

[GRI 3-3 Diversity and inclusion]

Based on the data obtained in our Diversity Census carried out in 2023 - a survey that made it possible to identify the profile of employees and their social markers, as well as evaluating their perception of an inclusive culture - we were able to implement important guidelines and affirmative actions in 2024.

We carried out the ethnic and racial self-declaration¹ process within the Brazilian units and, today, we have diversity maps by location, which brings greater assertiveness to actions aimed at minority groups.

We have structured affinity groups by unit; we provide training, speaking space and representation for their respective markers. They meet every two months and contribute to D&I initiatives and pillars. The D&I and Executive Committees work in partnership to monitor progress and develop relevant agendas and actions.

As part of the Viva+ program, we also have actions to support minority groups, through support from professionals in the fields of psychology and social assistance. We seek to bring visibility to the trans population in internal campaigns and ensure the use of social names. We also promote support for employees with neurodiverse children and continue to hold dialog circles and inclusive events.

Internal communication on D&I is synergistic with the communication on ethics, which regularly publishes content aimed at promoting the inclusive culture and ethical conduct expected by the Company.



1. IBGE Standardization.

Main D&I actions

[GRI 3-3 Diversity and inclusion, GRI 406-1]

In the second year of the Inclusive Culture development path, three new face-to-face training modules were held: Racial literacy and how to be anti-racist; Gender literacy and LGBTQIAPN+; and Anti-prejudice practices: fatphobia, ableism, religious intolerance and xenophobia. For 2025, we will launch six videos aimed at all employees on our internal communication app, TupyOn, in order to expand their knowledge of different social markers.

We have expanded the dialog circles with the participation of women, mothers, men, black people, the LGBTQIAPN+ community, young people and people with disabilities (PWDs). With regard to the inclusion of this last group, we have also made an online Libras course available on the TupyOn platform for all employees and their families. There are 12 video lessons on the basic level of the language. By 2025, the course is expected to be available at intermediate and advanced levels.

With regard to racial equity, we continued to provide training focused on anti-harassment and anti-discrimination practices and implemented the D&I module in the induction of new employees, an action that reinforces our commitment to respect and a safe environment. We continue to provide a space for people to speak out through dialog circles and campaigns to raise awareness and value black culture.

We inaugurated the first Tupy inclusive playground at the Joinville unit's Athletic Association, a space designed to give children access to leisure and moments of interaction with their families. Open to the entire community, the structure promotes accessibility and mobility.

We would like to highlight some of the numbers:

27% of women
in executive positions were promoted or hired in 2024.

41% of leadership
opportunities generated in 2024 were occupied by women and PWDs.

6,000 hours of D&I training
for all levels of leadership.

45% increase in
participation in dialog circles.

57% female representation
in apprenticeship and internship programs.

In 2024, 36 cases of alleged discrimination were reported to our Ethics Channels. All of them were analyzed and three were found to be justified. Remediation plans were implemented, the execution of which was duly monitored by the Company with specific corrective measures, depending on the type of discrimination identified, with the aim of restoring equity and fairness in the workplace. As a result, there are no open cases or cases subject to corrective measures. [GRI 406-1]

Affirmative action for women:

- **Continuation of the Female Management Program**, a three-year structured development path for female leaders. In 2024, four modules and approximately 1,170 hours of live virtual training with complementary activities were offered.
- **As an offshoot of this Program**, Ecoar Program was launched, a development trail that provides knowledge and inspiration for life and career for all Tupy women, wives and daughters of our employees. In 2024, 12 videos were launched, with more than 14,000 hits on the platforms. In 2025, we will make 12 new pieces of content available.
- **In honor of International Women's Day, we launched the Together for Them campaign**, with the participation of our employees from different units, sectors and positions, highlighting in their stories the inspiring trajectories and challenges encountered in their professional and personal journeys.

- **Gerar Program**, in which a health team attends to and monitors our pregnant employees on a monthly basis until they return from maternity leave. Possible ergonomic risks of the current activity to the pregnancy are also evaluated and, if identified, the employee is reassigned to another position until the end of the pregnancy. Customized uniforms and a lactation room are provided for the collection and storage of breast milk. In 2024, we organized a course for pregnant women, covering care during pregnancy, childbirth, breastfeeding, psychological safety and postpartum care.
- **Female Operational Talent Bank:** created to increase representation in jobs.
- **Dialogue Sessions:** between female employees from different areas and functions.

- **Querer & Poder Award**, recognizing female employees who are an inspiration and reference when it comes to inclusive culture.
- **Expansion and adaptation of the structure of the women's toilets and changing rooms**, providing greater comfort for our employees.

In 2024, we made progress in gender equity by promoting two women to director positions and increasing the presence of women in leadership roles at the coordination and supervision levels. There was also a positive change in administrative and intern positions.

Employee diversity by employee category and gender [GRI 405-1]

	2022		2023		2024	
	Men	Women	Men	Women	Men	Women
Executives ¹	100	0.0	100	0.0	93.1	6.9
Management	89.1	10.9	85.2	14.8	87.3	12.7
Leadership/coordination	88.8	11.2	87.0	13.0	84.2	15.8
Technical/supervision	94.5	5.5	94.2	5.8	92.9	7.1
Administrative	70.9	29.1	72.5	27.5	71.7	28.3
Operational	93.9	6.2	92.4	7.6	92.4	7.6
Trainees	46.7	53.3	44.7	55.3	34.4	65.6
Apprentices	49.0	51.0	43.0	57.0	47.6	52.4
Total	91.9	8.0	90.4	9.6	90.0	10.0

1. It includes both statutory and non-statutory directors.

People Management

[GRI 3-3 People development, GRI 3-3 Impacts on the local community]

At Tupy, we believe that people are at the heart of our strategy and the main driver of our sustainable growth. With more than 18,000 employees spread across several locations, we continually invest in building a safe, inclusive environment that fosters professional development. Our approach to people management is based on valuing talent, operational excellence and strengthening the organizational culture, ensuring alignment with the challenges and opportunities of the business.

One of the People Management area's medium and long-term strategic objectives

We are a global company, present in different countries and made up of people with diverse backgrounds, experiences, and perspectives.

is to make Tupy an employer brand that everyone wants, which drives the constant review of our human resources management policies and processes. With this, we aim to attract and retain talent and reduce the turnover rate, which has a negative impact on the Company's climate, productivity and profitability.

We are a global company, present in different countries and made up of people with different histories, experiences and perspectives. This multiplicity of perspectives is a differential that drives innovation, strengthens collaboration and increases our ability to adapt to a world in constant transformation. We believe that respecting and valuing differences - be they of origin, professional background, generations or ways of thinking - are

essential for building a more creative and high-performance environment. In addition, as one of the main employers in the regions where we operate, we play an active role in economic and social development, contributing to the generation of opportunities and the sustainable development of communities.

Our team is made up of highly trained professionals whose technical expertise is an essential pillar of Tupy's competitive advantage. The excellence and innovation of our products is a direct reflection of the knowledge and dedication of our teams, who master complex industrial processes and work continuously to find efficient and sustainable solutions. This differential positions us as a global benchmark, recognized for the quality and reliability of our products in demanding, high-performance markets.



We invest in training our employees, with ongoing training programs that reinforce both technical skills and the skills that are essential for the evolution of our business. In 2024, 258 thousand hours of training were carried out at all locations. [GRI 404-1]

In 2024, we also carried out various initiatives at the São Paulo, Betim and Mexico units, focusing on professional training, inclusion, leadership development and health and safety at work. We intensified the use of our online teaching platform, GoTupy, an integrated tool that increases targeted training, self-development and employee engagement with the Company. In order to provide education and information to our employees and their families, we started using the TupyOn app to publish courses and informational videos.

We continue to support formal education, through technical schools, including the Tupy Technical School; Youth and Adult Education (EJA); and other cooperation with institutions to enable our employees to access basic and vocational training. We have expanded our repertoire of partner educational institutions, providing access from basic education to higher education and languages, extending to family members.

We prioritize initiatives aimed at attracting and retaining talent, developing skills, promoting diversity and inclusion and the digital transformation of human resources processes. In addition, the safety and well-being of our employees remain fundamental pillars, with structured programs for comprehensive health and quality of life. Human Resources' presence in manufacturing environments and our climate monitoring and engagement programs ensure that the real needs of the teams are identified and met. These initiatives enable collaborative and effective people management, especially for those working in operations.

Our commitment is to be a benchmark employer, providing experiences that boost our employees' growth and strengthen our role in society.

Opportunities for young talent

The Young Apprentice program is an opportunity for new talent to enter the company and had 271 participants in 2024. The apprentices study part-time at partner institutions, following a training schedule in administration, electrical, foundry, mechanics, quality, machining, among others. In order to complement their journey, they continue part-time with apprenticeship practices at Tupy units.

Internship Program: to reinforce our commitment to education and talent development, we maintain an internship program, both compulsory and non-compulsory. At the Brazilian units, we have 148 participants as of 2024. Aiming to expand technical and behavioral skills, we offered development modules that covered topics such as Non-Violent Communication (NVC); skills for the future; self-knowledge and negotiation.

Formare Program: in partnership with the lochpe Foundation, the program takes place at the São Paulo unit, lasts 730 hours and is aimed at young people in situations of economic, social and family vulnerability. Last year, 20 young people graduated from the Administrative and Industrial Assistant III course.

Crescer Project: carried out in partnership with the Instituto Nossa Senhora de Fátima, the program is aimed at young people in situations of economic, social, and family vulnerability who are attending the 2nd year of high school and a vocational course. The course lasts two years, and in 2024, we had the participation of ten young people.



Leadership development

[GRI 3-3 People development, GRI 404-1]

We continue with our Leadership Development Programs (LDPs) for managers, coordinators, supervisors and facilitators. In 2024, we invested around 8,700 hours in training on topics such as holistic health; managing anxiety and stress; the role of humanized leadership; and the pillars of mental health. Inclusive culture was also addressed, reinforcing literacy in terms of race, gender and other diversities. Training on combating harassment and discrimination covered topics such as integrity, respect in work relationships and the practices expected of leadership.

We made progress in identifying opportunities in the First Leadership modules, the corporate roadmap and the development paths for technical and specialized careers. We launched team building actions, which through fun and integrative activities contributed to the strategic planning of the areas and to strengthening communication and team engagement.

As part of the Talent program, we carried out 150 new analyses of professionals, identifying potential and promoting career guidance and support for individual development plans.

Average hours of training per year, per employee [GRI 404-1]

By gender	2022	2023	2024
Men	20.3	21.0	13.8
Women	24.0	19.5	14.3

By employee category	2022	2023	2024
Executive	13.9	4.7	4.6
Management	43.9	19.9	21.0
Leadership/Coordination	39.8	73.9	29.4
Technical/Supervisory	32.4	43.0	25.2
Administrative	20.1	11.6	15.1
Operational	19.1	18.9	12.5
Total	20.5	20.9	14.0

Despite the reduction in the total average training hours, we made significant progress in strategic areas. Strengthening training for women, management, and administrative staff reinforces the company's commitment to professional development and the technical qualification of employees.

Performance evaluation

[GRI 404-3]

The performance management of Tupy's administrative employees is carried out annually, based on the definition of individual objectives and goals, behavioral competencies and each professional's adherence to our values and challenges. Of the eligible public, 97.3% underwent the assessment cycle in 2024.

In the operational areas, we carry out periodic assessments, covering criteria such as productivity, teamwork, compliance with safety standards, punctuality and attendance.

Based on the results of the evaluations, we offer structured feedback to employees, draw up development plans and encourage discussions about career progression between leaders and their teams. We also inform decisions on recognition, talent identification, salary reviews and succession planning.

Remuneration and benefits

[GRI 401-2]

Our benefits package is adjusted to the remuneration strategy, market context, local culture and legal obligations or collective agreements of the respective locations. We have a policy and effective management to ensure that all employees receive fair remuneration that is compatible with their responsibilities and their impact on the company. To promote a culture of excellence, we also implement incentive programs to recognize and reward the achievement of individual and organizational goals.

Among the various benefits offered to our employees are: health and dental insurance; pharmacy agreements; maternity/paternity leave; meal and food allowances or an in-house cafeteria; transport allowance; a private pension plan and life insurance.

Tupy also provides employees, their families and the community with access to culture, sport and leisure through partnerships with institutions. In Joinville (BR), we have the Tupy Athletic Association (AAT), with kiosks, courts and sports, as well as promoting events. In 2024, we expanded the range of activities on offer and improved the infrastructure, inaugurating the first inclusive Tupy park, with a playground adapted to cater for children with reduced mobility.

Organizational environment and culture

[GRI 3-3 People development]

In order to achieve our purpose and vision for people management, our organizational priorities include integrating and aligning the various cultures that make up the Company, which became even more necessary after the acquisitions.

In 2024, we internally developed an agile, scalable and secure tool to carry out a survey, called the Climate Thermometer, to be applied annually. The survey was carried out in three pilot areas, at global levels, addressing 5 pillars: Respect & Equality; Connectivity & Relationships; Partnership & Collaboration; Ethics & Neutrality; Pride & Belonging. With 80% participation, 454 respondents were heard. The scaling of the survey will enable us to capture the organization's cultural elements and, with this, draw up our culture map and manual.





06 Manufactured and Intellectual Capital

R&D, innovation and digital transformation
Products and services
Decarbonization solutions

R&D, innovation and digital transformation

[GRI 3-3 Innovation and product quality]

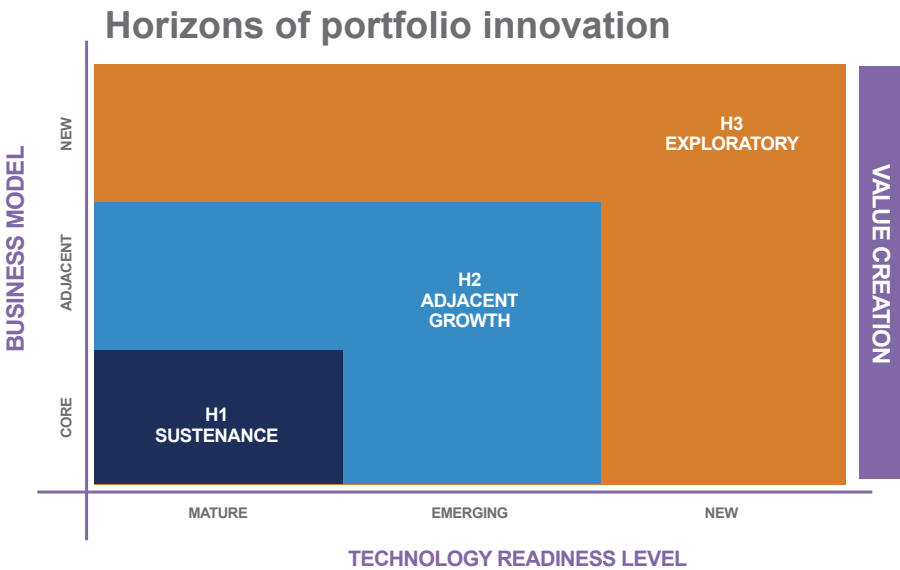
Tupy uses Research and Development (R&D) as a competitive edge in the market, by improving production capacity; prioritizing the efficiency of products and services; and launching technological solutions. Always seeking to meet society’s challenges, we have innovation as our method and the generation of value as our goal. To this end, we work in the following areas:

- **Research:** involves searching for technologies that require scientific development in order to gain market traction and scale up in current or new segments.
- **Development:** converting new technologies into product and service platforms for clients.

- **Engineering:** works through integrated development with clients, understanding their needs and aiming for product quality and meeting service level requirements.
- **Innovation:** connects the company to the ecosystem of universities, startups and Science and Technology Institutes (ICTs) through Open Innovation tools. It also works to encourage intrapreneurship and the creation of new business models.
- **Digital Transformation:** encompasses our digital journey with a focus on implementing Industry 4.0 and the digital office, through the knowledge that has been provided to employees.

Our employees’ knowledge, skills and experience pool are materialized in initiatives and projects that aim to generate value in the short and medium term and new growth paths in the long term. The way we map and monitor this portfolio is through innovation horizons.

To do this, we have a team of specialists, masters and doctors, and partnerships with companies, universities and technology institutes. We also liaise with organizations that promote technical discussions in order to provide answers to the challenges facing our sectors.



Tupy has 55 in-house laboratories and around 4 thousand technicians and engineers. In 2024, we invested R\$58.5 million in R&D. Of this total, 74% was earmarked for sustainability projects and solutions.

Main ongoing R&D projects

[GRI 3-3 Innovation and product quality]

Tupy has several Research & Development projects with different levels of technological readiness (TRL). The TRL is a scale, divided into nine stages, which makes it possible to order new technologies in order to develop a standardization of deliveries that indicates, with objective evidence, how ready they are for final application.

Ultra Light Iron Technology



This technology makes it feasible to produce cast iron structural parts with the same weight as aluminum, less noise and vibration, a cost reduction of around 25% and a reduction of up to 50% in Greenhouse Gas (GHG) emissions during production.

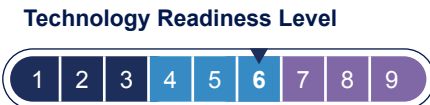
Ultra Light Iron technology is intended for engines powered by gasoline, ethanol or synthetic fuels, as well as hybrid applications, and can be used in blocks, cylinder heads and other structural parts. In 2024, we were able to make progress on specific evaluations of the technology with customers in structural components for light, medium and heavy vehicles, which will then allow us to move on to commercial projects and introduce the technology to the market.

Technology Readiness Level



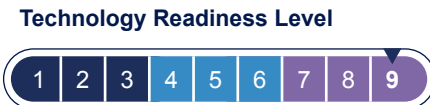
Technologies for hydrogen engines

High-efficiency motor



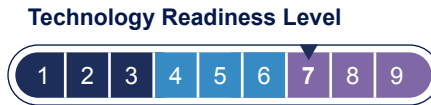
The project is linked to greater durability in hydrogen combustion engines, especially in heavy vehicles. Tupy is developing a more resistant iron alloys that will contribute to this challenge. To test them, in partnership with AVL and Westport, we built a demonstration engine to achieve thermal efficiency of over 50%, higher than diesel, which is between 46% and 48%. We carried out very successful tests and presented the results at the 11th International Engine Congress, held in 2024 in Baden-Baden, Germany.

Supply of cylinder heads



We also participated in a project with the MAN company for Otto cycle hydrogen engines for commercial vehicles, supplying the cylinder head for testing the H45 engine, which is expected to reach the European market in 2025. Among the characteristics of this engine are spark ignition, zero pollutant emissions, and use in long-distance road vehicles.

Biomass briquette



Project to replace mineral material in cubicle-type foundry furnaces in order to reduce the carbon footprint of the production process, without compromising high competitiveness and the high use of scrap. In 2024, we validated the briquette on a relevant scale to begin the industrialization stage of the technology, with the assembly of the supply chain. For 2025, we will develop a pilot oven to technically determine the maximum amount of mineral coke substitution.

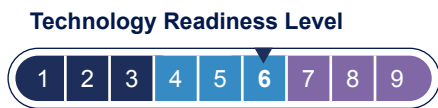


Battery recycling



The project is based on hydrometallurgy, a chemical process that uses less energy and allows greater reuse of materials – including lithium, which is not recovered in pyrometallurgy, the conventional process. In 2024, after completing the laboratory tests and the basic engineering project, we started building the first battery recycling pilot plant, a pioneer in the use of flexible hydrometallurgy technology, capable of processing the different chemical compositions of batteries on the market in the same batch.

Reuse of batteries (2nd life)



This project is based on assessing batteries at the end of their first useful life for stationary applications, such as battery banks and support for intermittent energies such as solar and wind power. The initiative involves the technical analysis of battery cells or modules to check whether they can be reused and extend their useful life by at least another five years before being sent for recycling. In 2024, we move on to modeling the aging of batteries to consolidate reuse technology.

Resynthesis of materials



This initiative aims to obtain battery cells of the same quality as new ones by resynthesizing recycled materials. It uses metals recovered in the recycling stage – lithium, nickel, manganese and cobalt – with a high degree of purity. This is essential to ensure that a battery made from 100% recycled material has the same performance as one made from newly mined materials. In 2024, we concluded the project with BMW, demonstrating success in the electronic performance of a recycled battery. As a result, another research project was initiated with the Senai Institute of Innovation in Electrochemistry of Paraná, as part of a structuring project by Embrapii, aimed at developing the battery cell manufacturing process in Brazil.

Hydrogen tanks



In 2024, we started a project to develop hydrogen tanks using metal hydride technology, which allows us to store hydrogen with less energy and greater safety. With this, we can store it at low pressure and low temperature, as well as obtaining a better arrangement for the vehicles, with more compact tanks, which can reduce the physical space occupied by up to 30%. The project is funded by Finep and has a partnership with the Federal University of São Carlos.

Ethanol engines



Project to adapt original diesel engines to MWM ethanol engines in order to meet the growing demand for decarbonization solutions in agribusiness and transport operations. The development of ethanol combustion technology and the ability to integrate it with the vehicle make it possible to transform existing vehicles into decarbonized versions more quickly and economically. One of the possible applications is the modification of agricultural tractors based on validation in durability and field tests, following the example of other services already offered by Tupy, such as the use of biomethane engines in trucks and buses. Other types of tractors, agricultural machinery and transport can also benefit from ethanol engines.

Engineering

To meet our customers’ needs, we respond effectively to demands for new materials and the increasingly efficient use of inputs. Among the work carried out by our technical staff are: product geometry; development of new metal alloys, processes and applications; failure analysis; simulation of the casting process; approval and manufacture, as well as verification of the raw materials to be used and strict quality control.

We have IATF 16949, ISO 9001 and ISO 14001 certifications, which attest to the quality of our management systems. We also comply with national and international technical standards in the manufacture and sale of pipe fittings and continuous cast iron bars. We also have certifications for specific products, described on each part (see [Product and customer safety](#)).

Open Innovation Portal

Our Open Innovation Portal connects the Company’s strategy to the innovation ecosystem. On this platform, we publish challenges that are important to the business and collaboratively seek access to new skills.

Proposals are evaluated and, once approved, sent to the proof of concept and project implementation stage. The portal is constantly open and caters for all audiences, such as scientists, entrepreneurs, mature companies, students, inventors, researchers, startups, universities etc.

The Open Innovation Portal has already received 212 solution proposals. A highlight is the project for an innovative coating applied to sand cores, a solution that boosts efficiency in the painting processes for these items.

This case is the result of a partnership between four players in the innovation ecosystem: Tupy, CIT-SENAI, São Paulo startup NChemi and the Brazilian Industrial Research and Innovation Company (Embrapii).

Our collaborative network currently has five open challenges, which you can check out on the [Portal](#).






ShiftT

With three years of operation and more than 350 startups connected, ShiftT is Tupy’s accelerator. Our proposal is to combine ShiftT’s structure and expertise with the talent of promising entrepreneurs to boost their businesses, results and impact.


From the startup selection process to post-acceleration, our goal is to strengthen the participants and the ecosystem. Each stage increases the degree of interaction and access to the tools and skills we will provide to raise the level of the startup, with support in proofs of concept, validation of business models and technological improvement.

We won 7th place in the Open Corps Top 10, in the Mining and Metals category, in the ranking 100 Open Startups 2024.


Through ShiftT we are looking to attract companies that fit the following profiles:




Energy: innovation in battery recycling, energy efficiency, new fuels, hydrogen or biofuel.




Sustainable development: solutions in decarbonization, circular economy or that generate social impact.



Infrastructure: technologies aimed at basic sanitation, gas, 5G infrastructure or urban waste.



Digital transformation: proposals for asset management, traceability, data mining, machine education and model building, Artificial Intelligence (AI), Industry 4.0 or Digital Office



New business models: solutions for transportation, mobility and logistics, manufacturing, metallurgy, agriculture or capital goods.

A ShiftT tracks Tupy’s strategic movements, expanding its areas of action and aiming for technological frontiers. The selected startups underwent an acceleration process, including proof of concept executions and exclusive mentoring sessions, led by Tupy employees with expertise in various knowledge areas and trained in innovation and the new economy.

Some projects resulting from ShiftT deliver short-term results. There are startups that participated in the initiative and have now become our suppliers, such as Exy, the only national developer and manufacturer of industrial exoskeletons, and Hedro, specializing in the development of smart sensors to digitize processes and industrial machines.

Selected startups (3rd cycle)

In 2024, three startups were selected for the acceleration program from a pool of 128 applicants from all over Brazil. Meet the chosen ones:

- **Amachains:** their value proposition is based on developing a platform for carbon footprint traceability, with transparency and governance.
- **Mip Wise:** this startup, formed by data scientists, combines their expertise with that of the industry to transform data into intelligence that can predict quality and productivity factors.
- **Geeco:** this startup focuses on connecting science, the market, and positive environmental impact. With a strong team, they develop solutions for the valorization of industrial waste and by-products.

Digital transformation

Moving forward on the digital transformation journey requires consistent action, allied to strategy and experienced by all employees. This approach is based on the concept that digital is the various new technologies and transformation is carried out by people. In this journey, we are concerned with having clear foundations that enable us to implement our strategy, moving from data to intelligence.

Projects are prioritized according to eight strategic pillars: operations, asset management, sustainability, technological leadership, people and knowledge, quality, clients and business management.

With a focus on optimizing resources and reducing technological risk, we have adopted the philosophy of using the Joinville unit, where the company's largest technical staff is located, as a pilot plant so that technologies can be tested and validated. Once approved, they are then implemented more quickly and safely in other operations. Although we have different levels of maturity between the units, they all made significant progress in 2024.

In the production environment, we have continually evolved in the implementation of the MES (Manufacturing Execution System), which is coded by Tupy itself. This solution has expanded our management capacity, adding greater control and data collection from the lines of operations. Today, MES is active in the Joinville unit. In 2025, implementation is planned for the Ramos Arzipe plant.

As an additional step, the traceability module was developed and implemented, consisting of a set of technologies that allow data to be indexed by by-product at each stage of the process. With this technology, each stage and, subsequently, the product, now has data by item and no longer by batches or production shifts.

In order to generate value from large volumes of data, we invest in data analysis and mining, creating machine learning models before applying artificial intelligence directly. Within the industrial environment, one of the main values is to develop the possibility of generating forecasts of future effects, based on models fed by the data.



AI applied to quality

The artificial intelligence solution for quality was developed in stages, starting by defining a specific scope, evaluating which product, customer and challenge were priorities. The first step was to make traceability data visualization tools available, allowing the Quality and Metallurgy teams to accept the use of existing data (trust in the data) and critical analysis capabilities (insights and education).

Following this, several rounds of machine learning were carried out, based on a two-year history of data collected by traceability, with a focus on predictability of what could impact product quality.

During the construction of the AI learning models, several cycles of adjustments were made based on the interaction between the Quality and Metallurgy teams and the data scientist responsible for the analysis. This combination of technologies and different types of knowledge was the key to achieving a more mature model.

As a result, the development of an AI became a natural step and, for the proposed challenge, we were able to predict failures with an accuracy of over 80%, enabling preventive actions and efficiency gains.

In addition to the industry 4.0 initiatives and advances in our operations, Tupy is also digitizing its management environment through the digital office concept.

Among the various new digital management applications developed and implemented in 2024, we highlight the adoption of a low-code tool for developing applications - used for appointment activities, controls and approval flows - and the use of RPA (Robotic Process Automation) in manual, repetitive and labor-intensive administrative processes. With the use of the tool, we have gained more than 3,000 hours of productivity in the last year, considering around 20 automations carried out. Another indication of success was the more than 50 projects delivered, whose decision-making process was supported by the use of data and information through visualization and analysis screens.

In terms of integration, the structuring of Tupy's cloud environment aims to connect the various units and the development of new digitalization tools. Of particular note is the project, which began in 2024, to define the generative artificial intelligence tool to be adopted by the Company. The search is on for an AI that ensures quality, assertiveness and safety.

Another important front was the actions taken in the IT environment, in particular the Systemic Standardization program to ensure that the same software is used in all units for all administrative processes. In 2024, work began on standardizing the purchasing process and the people management process.

Image recognition

Building on the skills developed in the previous year, in 2024 we began to scale up the adoption of tools that use image recognition.

We have applications developed for process control and quality management and we are betting on this technology because it is easy to apply and brings high benefits by transforming images, in real time, into data that feeds our digital transformation tools.

Products and services

[GRI 3-3 Product innovation and quality, GRI 2-6]

Tupy is a global supplier of structural components for manufacturers of capital goods used in the transportation, infrastructure, agriculture and power generation sectors. We are present everywhere, offering essential products for a better quality of life. The technologies and products we develop meet our customers' needs, offer solutions to real societal challenges and reaffirm our commitment to sustainability.

Portfolio of products and solutions

- ▶ **Structural Components.**
- ▶ **Manufacturing Contracts.**
- ▶ **Energy & Decarbonization.**
- ▶ **Distribution & Restocking.**

Click here

to view the full portfolio.



Decarbonization solutions

[GRI 3-3 Product innovation and quality, GRI 3-3 Decarbonization]

Tupy has expanded its operations by defining a growth path on four business fronts, one of which is energy and decarbonization, investing in complete, customizable and viable solutions. On this front, the Business and R&D areas work together, generating value and contributing to our clients' sustainability strategies. We offer complete or modular circular economy projects that support clients in producing clean and renewable energy, with energy predictability and the transformation of an environmental liability into an asset.

The energy transition is essential and urgent. To achieve it, we believe that we need to decarbonize in a viable and inclusive way, since energy is fundamental to people's quality of life and there is global energy inequality. For Tupy, there is no single solution to resolve this issue, the world will be multi-fuel and each geography has its own capacity to access energy generation sources and technologies. That's why we're working harder and harder to position ourselves strategically to meet the growing demand for energy in all its forms.

To help Tupy in this mission and reinforce our expansion strategy in energy and decarbonization solutions, we have the largest research and development center for biofuel engines in Latin America. The structure of this technology center includes dynamometer benches, electronics and instrumentation laboratories, a cold room and other facilities to support all phases of design and production. We have brought together initiatives already in the practical application phase, such as power generation, transportation and irrigation from agricultural and livestock waste. Other solutions are in the development phase, for example, technologies based on ethanol and hydrogen.



Businesses at different stages of maturity					
Own engines	Generators and equipment	Vehicle transformation	Motor pumps	Marine engines	Bioplants
Mature business Add value to other products.	Mature business National leader in generators.	Business validated throughout 2024 Expansion to other customers and new products (13L and ethanol).	Business validated throughout 2024 Expansion to other customers and new products (irrigation).	Strategy adjustment in 2024 Validation in progress.	Implementation of first ongoing projects Validation throughout 2025.

Tupy is part of two working groups with the Business Mobilization for Innovation (MEI), an arm of the National Confederation of Industry (CNI), which discuss the energy transition. One is dedicated to decarbonization and the other to discussing sustainable fuels.

In the 2025-2029 strategic plan, we present our main paths towards decarbonization:

- Focus on energy efficiency, scaling up existing solutions by renewing equipment.
- Use of waste energy, especially in waste recovery, reducing emissions and renewing the energy matrix.
- Substitution of carbon-intensive fossil fuels, following a rational economic and technological route, even if by other less intensive fossils or blends with biofuels.
- Investment in viable decarbonization opportunities, through research and development, accelerating the maturity of technologies that are still uncompetitive.

Bioplants

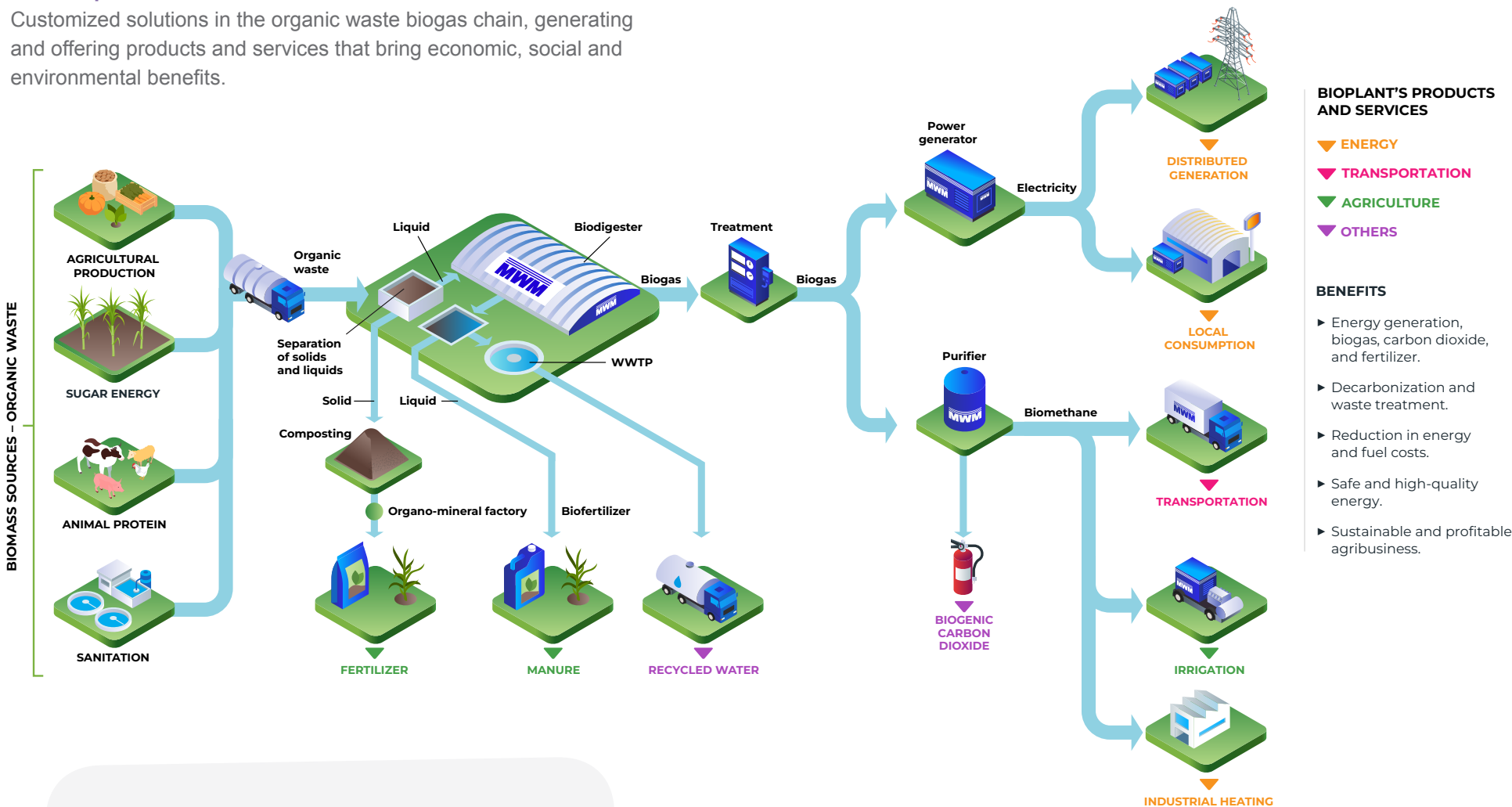
A circular economy service that offers clean energy, renewable fuel and organo-mineral fertilizer from organic waste generated in the city and countryside.

We operate with a team of professionals specializing in agronomy, biotechnology, soil nutrition and zootechnics, as well as various technical partnerships with companies, universities and research institutes such as Embrapa and Unesp.

Today, we have three Bioplants projects in Brazil, which create a new value chain for clients, as they start to collect and treat waste - no longer emitting methane into the atmosphere, as well as generating direct and indirect jobs. Also in terms of sustainability, the emissions avoided by the three Bioplants total around 165 thousand tCO₂e per year, equivalent to more than 1.3 million trees, with a direct impact on the emissions inventory of partner companies.

How Bioplants work

Customized solutions in the organic waste biogas chain, generating and offering products and services that bring economic, social and environmental benefits.



Bioplants

Seara

In 2024, Tupy entered into a partnership with Seara, a leading food producer and part of the JBS Group, for a Bioplant to produce organo-mineral fertilizer, biomethane and carbon dioxide from pig and poultry waste. Located in the municipality of Seara, in Santa Catarina, the project will include a herd of around 200,000 pigs and 1.7 million poultry. The solutions developed will be a benchmark in the use of clean and innovative technologies, which will contribute to increased productivity and efficiency gains in the animal protein chain, reducing greenhouse gas emissions, providing direct and indirect jobs, and contributing significantly to the sustainable development of the region.

Primato

Partnership with the agricultural cooperative Primato, located in Ouro Verde do Oeste, in the state of Paraná. In 2024, the Bioplant's contract was extended to include a herd of approximately 65,000 pigs and to serve 27 cooperative members, including the partner's own farm. It is estimated that the project will produce more than 10,000 tons of organo-mineral fertilizer each year, with the right formulation for the region's crops.

Rancho da Lua Farm

Located in Divinópolis, Minas Gerais, the farm will, through Bioplant, process the waste from around 500,000 laying birds to generate electricity on the property. The partnership also includes the production and sale to third parties of organo-mineral fertilizer obtained from the process, with an annual capacity of approximately 25,000 tons.

Another important Tupy project for Brazilian agribusiness is the implementation of a system to treat digestate from biodigesters, a by-product of the biogas and biomethane production process, into reuse water. The technology developed by Embrapa is used in our energy generation and biofuel production units, in a coordinated action with Ekodata, a company licensed by Embrapa to apply this type of solution.



Vehicle conversion

The solution aims to replace the engines of diesel-powered vehicles in circulation with 100% biomethane or natural gas engines. With the change, 85% of the original engine’s components can be preserved, while maintaining a similar maintenance cost.

The initiative represents a major milestone in the adoption of sustainable and viable solutions to promote decarbonization in the freight transport sector, urban fleets and garbage collection trucks, considerably reducing environmental impact.

In 2024, MWM, a subsidiary of Tupy, entered into a partnership with Copergás, the leading gas distributor in the state of Pernambuco, to carry out a vehicular transformation of Rodotril’s road transport trucks, reducing fuel costs by up to 40%. This agreement plays an important role in providing a clean, renewable fuel for the vehicles. So far, 12 trucks from Rodotril’s fleet have undergone the vehicle transformation.

Agricultural motor pumps

Launched in 2023, the agricultural motor pump is yet another solution connected to the biomethane chain. The technology involves an integrated telemetry system and an intelligent mechanism for changing the gas cylinder platform, which does not interrupt operation and also allows for a significant reduction in operating costs. Where biomethane is not available, a diesel version is offered.

The benefits of biomethane motor pumps compared to diesel are:

- ▶ Fertigation **with up to 95% reduction in Greenhouse Gas (GHG)** emissions.
- ▶ Reduction of **more than 95% in particulate matter** emissions.
- ▶ Self-sufficiency in biomethane production by the ethanol and sugar plant.
- ▶ **Lower operating** costs.



Maritime sector

Tupy has been positioning itself in the nautical market with the development of more sustainable vessels for leisure and commerce, by offering products and services such as on-board engines and power generators and marine propulsion systems.

Brought to Brazil by MWM in 2023, the OXE Diesel engines represent a breakthrough in the alternative fuel initiative to decarbonize the maritime sector. They are used in vessels for transporting people and, among the advantages they offer compared to gasoline engines are: greater power and safety; 65% greater autonomy; 42% reduction in fuel consumption; lower operating costs; and 35% reduction in GHG emissions.



07

Social and Relationship Capital

Suppliers
Customers
Communities

Suppliers

[GRI 3-3 Sustainable supply chain, GRI 2-6, GRI 2-29, GRI 204-1; SASB EM-MM-000.B]

In order to meet the production needs of an increasingly diversified portfolio, Tupy has a very varied supply chain, made up of small, medium and large companies providing direct materials - inputs used in manufacturing - and indirect materials - services and other activities to support the production process. Among the largest and most complex categories in the chain are the supply of scrap, electricity and logistics, as well as the provision of services.

We always seek to preserve long-term relationships with our suppliers, with resilience and collaboration. We have 7,189 active suppliers, 88% of whom come from the countries where we operate (Brazil, Mexico and Portugal), and 12% from other countries. In addition, 25% are from the states where our facilities are located. In 2024, R\$6.9 billion was spent on the supply chain, 29% of which was spent on local suppliers, an expense that has an indirect economic impact on the localities through the generation of jobs and income.

Supplier management is guided by policies and guidelines aligned with our principles and values and must be complied with by contracted companies.



Find out more in [Ethics, Integrity and Compliance](#) and access our [Supplier Manual](#).

Last year, we launched a new procurement portal, Ariba, in the two units in Mexico. The second stage of implementation will take place at the Joinville and Betim plants in 2025 and in São Paulo in 2026. The platform has facilitated contact and relationships with our suppliers, bringing greater agility and efficiency to the purchasing and payment process. Also noteworthy is our internal satisfaction survey, through which we have redefined profiles for each category of buyer.

Sustainable supply chain

[GRI 3-3 Sustainable supply chain, GRI 308-1, GRI 414-1]

Tupy helps suppliers to implement good practices, with a dedicated team to answer questions and other actions needed to build an evolution plan with each of these companies.

The sustainable development of the value chain is part of our strategy, working with qualified suppliers committed to responsible practices. Last year, we hired all the 466 new suppliers based on social and environmental criteria. In order to register new partners, a compliance assessment is carried out, including analysis and the submission of documents such as IBAMA

licenses and permits, environmental licenses and ISO 14001.

With the aim of improving the performance of suppliers with the greatest socio-environmental impact and collaborating with the evolution of their conduct, we work directly with the partners who scored lowest on the ESG Questionnaire to increase their score. In 2024, three workshops were held, highlighting environmental, social and governance issues, which resulted in the creation of environmental and human rights policies and codes of ethics by the suppliers themselves.

In 2024, Tupy and its subsidiary MWM held the first joint edition of the Supplier Awards, an event to honor suppliers who stood out based on the previous year's results.

The initiative recognizes alignment with Tupy's policies and the supplier's performance, valuing and encouraging best practices. The awards follow the Global Supplier Rating System (GSRS) process, in which criteria such as quality, sustainability, delivery performance and flexibility, technological capability, performance in new product development, commercial approach, and contribution to cost reductions are evaluated to determine eligible suppliers.



Selection and monitoring

[GRI 308-1, GRI 414-1, GRI 308-2]

The procedure for selecting and approving new suppliers includes stages for evaluating aspects such as economic, social and environmental impact and checking risks related to supply, quality and technical capacity. All our suppliers must comply with the Code of Ethics and Conduct in order to continue in the process. By 2024, 100% of current and newly registered suppliers had been subjected to environmental and social criteria, according to the nature of the product supplied.

In the monitoring phase, we restructured our risk matrix to identify compliance issues, financial health, sustainability, sole source of supply, subsidiary liability and compliance

with the General Purchasing Conditions. Based on this analysis, actions are taken on the risks identified, with detailed work for those suppliers that are most critical. We have a supplier treatment process, in which we identify low performance suppliers (LPS) and, for these, we apply corrective measures and on-site audits.

For suppliers that treat the waste generated in the operation, Tupy analyzes the environmental aspects more rigorously. In 2024, 112 companies underwent environmental approval, with on-site audits and monitoring of improvement plans.



Customers

[GRI 2-6, GRI 2-29]

For Tupy, trust, respect and transparency are key aspects of the relationship with customers, as well as offering innovative, viable and economical solutions to add value in the short term. These are long-standing partnerships built on the care we take to meet each client’s needs, with a customized portfolio developed jointly.

This co-development of solutions with our clients is part of the company’s strategy to jointly seek alternatives that meet expectations and technical specificities, with quality and safety. We work with the customer from the conception of a project through to product development, distribution and restocking. In 2024, we supplied structural components and manufacturing contracts for customers on five continents.

The distribution of iron pipe fittings and continuous cast iron bars is carried out by approximately 1,519 customers (resellers), who serve end users in industries, construction companies, installers, etc. in both the domestic and foreign markets. In the case of spare parts, we have a renowned distribution network with more than 1,300 points of sale globally and 518 authorized services for MWM brand products in different sectors such as: vehicles, marine, agriculture, energy and infrastructure.

We have closed new deals in structural components and manufacturing contracts that contribute to efficiency gains for our customers and reflect our strategy of offering higher value-added products. Production will begin in 2025 and is expected to generate additional revenues of R\$200 million per year once the full contracted potential has been achieved.

With around 61% of revenues coming from abroad, Tupy’s customer base is varied in terms of geographical areas, products and applications. The diversification of our product portfolio, the proximity and long-standing relationship with relevant global players in the market, contribute to the company’s resilience in adverse scenarios and the delivery of consistent results, as was the case last year. A challenging period for the sector, especially in the foreign market, driven by macroeconomic factors, devaluation of commodities, climatic events, inflation and high costs in the United States.

In 2024, we announced the expansion of our Parts Distribution Center (CDP) in Jundiaí, São Paulo, with an increase of 28% over its current size. The expansion is a result of the projected growth of the spare parts portfolio for 2025. It is also planned to update the CDP’s layout for greater capacity, with expected gains of up to 35% in productivity. We currently handle more than 3 million parts a month and have more than 19,000 active items in our portfolio.

Tupy is a global supplier of structural components for all the capital goods manufacturers in the West, for transportation, construction and agriculture.



Contact with current and new consumers

We maintain good relationships and present solutions to various sectors. To do so, we dedicate ourselves to finding out about future demands by attending events, fairs and technology shows in Brazil and around the world.

To evaluate our customers' satisfaction, we have direct contact with the sales team, surveys and strategic indicators for decision-making. The sales team is structured to ensure the level of service and proximity required to maintain our long-lasting relationships.

Our ESG performance is evaluated and monitored by our customers in awards and questionnaires dedicated to this approach.

In 2024, Tupy launched a project to support hydraulic fittings customers, the Conexões Tupy channel on YouTube and Instagram. Technical content are made available weekly to expand and make more accessible support for installers, technical assistance and other professionals in the field about our portfolio. Scripts are put together by the marketing and engineering teams, based on the questions and concerns reported by our customers, with the aim of achieving clearer, more objective and dynamic communication.

Energy at Rock in Rio 2024

MWM, a subsidiary of Tupy, in partnership with the company A Geradora, provided power for Rock in Rio 2024, one of the biggest music festivals in the world. With a total of 40 generator sets, the initiative ensured that the event took place without interruption, providing a high-quality sound and visual experience, unforgettable for thousands of fans.

With the capacity of the equipment, it was possible to meet the varied demands of the festival, from stage lighting to food and health services. To ensure energy safety, all generators were monitored 24 hours a day, minimizing any risk of failure.



Safety of products and customers

[GRI 3-3 Product innovation and quality, GRI 416-1, GRI 416-2]

In our quest for continuous improvement in all our lines, 100% of our products undergo permanent safety analysis. Care and attention to quality is present in our production chain, through the control of indicators in manufacturing processes such as casting, machining, assembly and testing, as well as in the use of products. In this way, we avoid possible field calls or recalls and the financial impact of replacing parts, penalties, line stoppages, as well as dissatisfaction and damage to the end user.

We have a Recall Policy, in place, which establishes activities aimed at mitigating potential risks to the safety and health of consumers or material damage to their property. The actions involve monitoring indicators, the principle of which is to ensure total customer satisfaction, eliminating internal and external failures and quality-related costs.

Tupy also relies on processes that involve lessons learned from similar projects, technical bibliographies, exchange of experiences with clients, research institutes and universities.

Control points:

- ✓ Frequent communication with customers, suppliers, internal processes and regulatory authorities.
- ✓ Upon detection of a failure that affects safety risk conditions for the customer or environmental issues, the production process, distribution and sale of products will be interrupted.
- ✓ Correct disposal of affected products.
- ✓ Removal of the affected products from the market, stocks and distribution centers.
- ✓ Analysis of the causes of the defect and implementation of the necessary actions to prevent its recurrence.

Product quality

[GRI 3-3 Product innovation and quality]

Tupy invests in employee training with the aim of increasingly improving the quality and safety of our products. In 2024, we offered 11.6 thousand hours of training on these topics, with content on audits, standards, ISO 9001 and IATF 16949 certifications, methodologies and procedures, failure prevention tools and problem solving.

Engineering has quality and project development teams, seeking greater efficiency in communication and customer service. We have implemented inspection methods for safety parts and a reinforced process audit structure. In addition, we monitor the performance of the supply chain, ensuring our quality requirements.

We also rely on an internal Failure Analysis Group, and weekly meetings are held to ensure constant product improvement. In 2024, there were no cases of non-conformities in our products, nor were there any recalls or costs related to replacing components and parts on a large scale.



Communities

[GRI 2-29, GRI 3-3 Impact on local communities, GRI 203-1, GRI 203-2, GRI 413-1; SASB EM-MM-210b.1]

Tupy prioritizes establishing positive relationships and contributing to the communities around where it operates. Our aim is to leave a positive legacy in these regions, providing conditions for growth for all, with actions involving the generation of jobs and income, infrastructure, professional training and economic movement, with the use of local services and inputs in our operations.

We strive for constructive dialog and a relationship of respect, transparency and collaboration. We have a global channel for receiving and responding to demands from local residents and institutions, applicable to all of the company's units.

The company has a structured social investment program, with clear governance parameters and a standard to guide the

alignment of initiatives with our strategic objectives, with the definition of four priority focuses: education, health and safety, the environment, equity and inclusion.

In order to ensure that donations and sponsorships are in line with best practices, we have a specific policy and standard. The guidelines define standard procedures for this process, such as assessing the integrity of the institution, approval levels, signing contracts and rendering accounts.

We carry out local development programs around 80% of Tupy's plants, covering Betim, Joinville and São Paulo (BR), and Saltillo and Ramos Arizpe (MX). In 2024, we directed R\$3.6 million to social projects, with our own and incentivized resources, benefiting 57,219 people and injecting 10.6 billion into the economy¹.

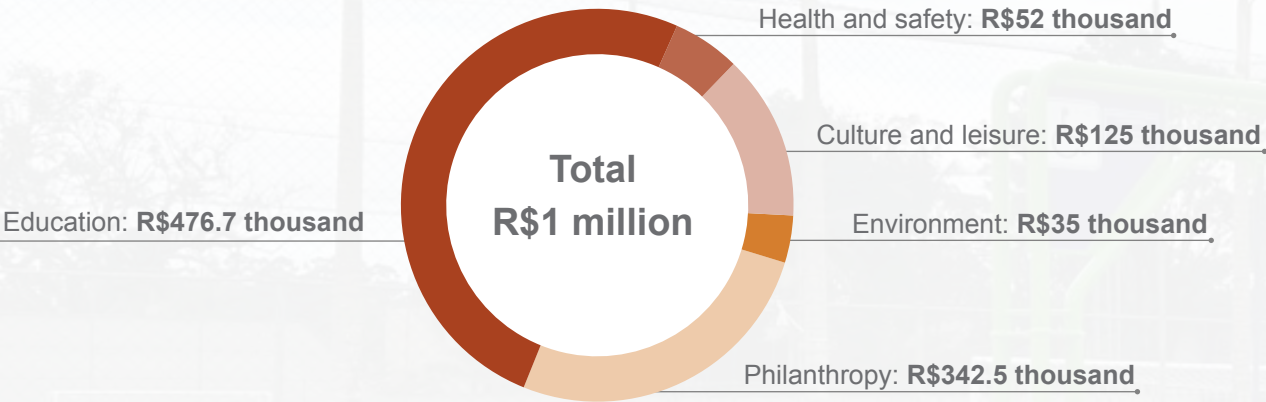
1. These amounts were calculated considering: (i) inputs purchased from third parties; (ii) employee salaries, social charges, Severance Indemnity Fund (FGTS), profit-sharing or bonus programs, management fees; and (iii) federal, state, and municipal taxes, fees, and contributions.

Access our **Social Investment Standard and Donations and Sponsorship Policy.**

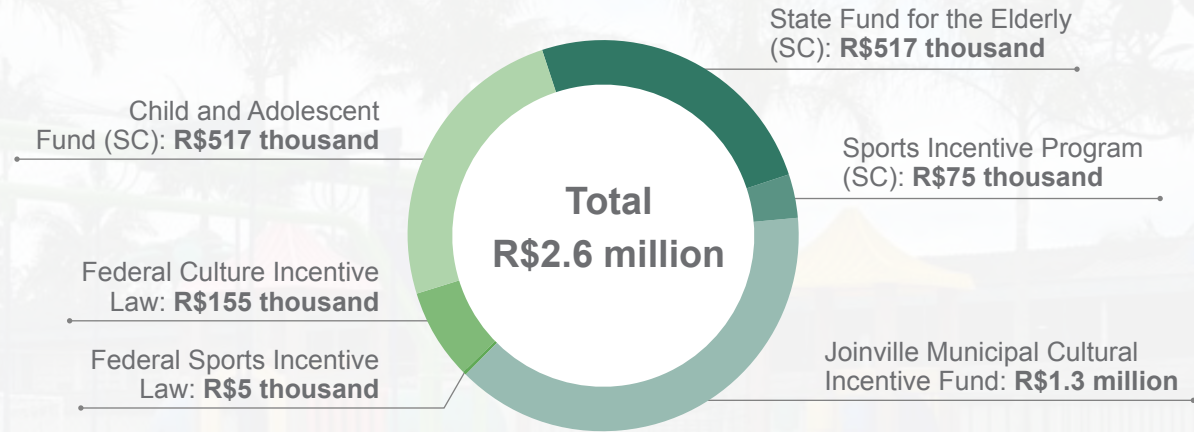


Corporate social investment

Own resources



Resources from tax incentives



Main actions carried out in 2024

[GRI 3-3 Impact on local communities, GRI 203-1]



Donations and sponsorship

- ▶ **Introduction to Information Technology Project:** developed by the Tree of Life Program of the Association of Volunteers for International Service (AVSI), with the aim of training and certifying young people in basic information technology, in Betim (MG). Fourteen classes were completed, with 196 students certified.
- ▶ **Christmas Angels Campaign:** run by the Joinville Children's Hospital.
- ▶ **Joinville Volunteer Fire Brigade.**
- ▶ **7th Joinville Pianist.**
- ▶ **Instituto JEC – Joinville Esporte Clube.**
- ▶ **Year I Inclusive Paralympic Athletics Project:** run by the *Associação Paradesportiva de Deficiência Intelectual de Joinville* (APADI).
- ▶ **Production of the film *Malês – 1835*:** by Tambellini Filmes e Produções Audiovisuais.
- ▶ **Cleaning materials in support of the victims of the floods in Rio Grande do Sul.**
- ▶ **Donation of painting materials to public schools in Joinville, Betim and Salttilo.**
- ▶ **The SOS Mangroves Project:** run by the Comar Institute, which promotes environmental education workshops in elementary school in Joinville, with a focus on mangrove conservation. In 2024, 817 students from seven schools took part in the meetings. In addition, a joint clean-up effort was held as part of the Zero Waste Joinville Week program, with 364 kilos of waste removed from the mangroves.
- ▶ **Girls in Technology Project:** run by Federal University of Santa Catarina (UFSC).

Own projects

The 17th Formare class was held in partnership with the Iochpe Foundation, which qualifies young people in situations of economic and social vulnerability in the Administrative Assistant and Industrial III courses, with a curriculum recognized by the Ministry of Education.



Volunteering

Our corporate volunteering program, Transformadores Tupy, is present in our Brazilian and Mexican units. In 2024, our employees, their families and the community carried out 2,480 hours of volunteer work, in actions to improve infrastructure and support services such as: revitalizing schools, giving theatre performances, organizing solidarity campaigns, cleaning efforts, donating blood and recreational activities.



Solidarity campaigns

- ▶ Contribution to the chemotherapy treatment of children, through the Por Un Respiro Mejor association, with the collection of plastic bottle tops among employees in Mexico.
- ▶ Carrying out the traditional Natal Luz campaign, a social initiative in which employees collect presents for children from local social institutions. The campaign takes place at both the Brazilian and Mexican units. In the 2024 edition, around 800 children benefited.
- ▶ Collection of more than 43,000 donations, including hygiene and cleaning supplies, toys, school materials, clothing, and food, benefiting communities in situations of social vulnerability in Mexico and Brazil, especially those affected by the floods in Rio Grande do Sul, who also received a direct donation of 34,000 items from Tupy.



Other actions in the community

- ▶ Inauguration, by the Associação Atlética Tupy (AAT), of Joinville's first inclusive park to promote accessible leisure, open to the local community. Also noteworthy were the Giro Paradesportivo, an event for the community to experience paralympic sport, and the inauguration of the Lolla Pet Park, an outdoor space for residents to visit with their pets. Both events were held at AAT.
- ▶ Job fair, held at the AAT, for the Joinville community, offering more than 300 career opportunities in the industry. In addition to the fair, visitors were able to find out about the qualification courses offered by five educational institutions in the city. The free event also included an exhibition of vintage cars and various activities for children.

Impact mitigation

[GRI 3-3 Impact on local communities,
GRI 413-2; SASB EM-MM-210b.1]

Tupy recognizes the real and potential impacts on communities resulting from its operations and distribution and logistics activities, such as increased local traffic flow, noise and particulate matter emissions. For this reason, at 100% of our units we carry out socio-environmental impact assessments, engagement plans and open communication processes with residents. We have adopted a procedure for controlling incidents, managed by the Communications and Social Responsibility teams, which enables us to efficiently meet the demands of the communities. Complaints registered through the company's channels (e-mail, website and telephone) are monitored and forwarded to the technical teams responsible for evaluation and the necessary measures.

We also act preventively to identify, assess, deal with and communicate possible risks that could have a negative impact on the localities. These actions contributed to a 50% drop in the number of total complaints in 2024 compared to the previous year.

Open and transparent communication

[GRI 413-1]

In addition to disclosing our indicators in reports like this one, we maintain contact with the communities in which we operate, through representative organizations and associations. In Joinville, the city where the company's headquarters are located and the region where we have the greatest impact, we have established a more active dialog. Since 2023, we have held biannual meetings with the main leaders of the surrounding community, including Residents' Associations. At the meetings, we share indicators, improvements made and planned, and capture the residents' perception of our work. Occasionally, due to some work or action that has a greater impact on the community, public consultations are held.

 comunidade@tupy.com.br



Meeting between Tupy and representatives of the Joinville (SC) community, held in 2024.



08 Financial Capital

Economic performance
Investments

Economic performance

[GRI 201-1]

Despite a very challenging year for Tupy, in 2024 we achieved the highest operating cash generation in the company’s history. The volume of our main markets, especially the American market, was lower than expected, but we managed to maintain balance in the face of these external factors through management actions focused on cost reduction and operational efficiency. We saw strong growth in the aftermarket and recovery in the heavy vehicle segment in Brazil, compared to the previous year.

In 2024, we recorded net revenue of R\$ 10.7 billion, a 6% decrease compared to the previous year. Adjusted EBITDA reached R\$ 1.3 billion, the highest ever recorded, representing a 2% increase compared to 2023. The EBITDA margin was 12.1%.

The company has a well-defined and detailed business plan, in place, both from the point of view of growth opportunities in the current business, with added value through machining and assembly, and in the new businesses offered after the acquisitions. Discipline in executing our strategy is of great importance if we are to deal with the impact of adverse situations that Tupy has no control over, such as market volumes and exchange rate variations. In this way, we are always very diligent in monitoring results, seeking to mitigate risks, reduce costs and generate cash and value for the company.

Our focus in 2025 is on diversifying revenues with new businesses to open up avenues for growth and reinforce a mature, cash-generating profile. At the same time, we intend to reduce idleness and fixed costs, focusing on asset optimization and operational efficiency to strengthen our margins and ensure sustainable development in the long term.

Net revenue (R\$ million)



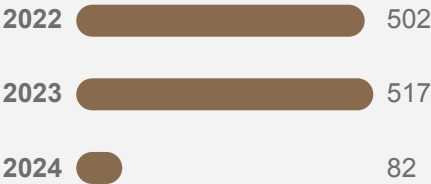
EBITDA (R\$ million)



Operating cash generation (R\$ million)



Net profit (R\$ million)



Investments

[GRI 3-3 Impact on local communities, GRI 203-2]

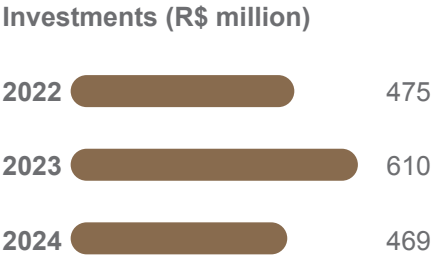
In 2024, Tupy continued its strategic move towards new segments that offer greater added value and growth potential, prioritizing investments in viable decarbonization solutions such as Bioplants, vehicle transformation and battery recycling.

In 2024, we invested R\$469 million in projects, 9.8% less than in 2023, following the company’s strategic guidelines. Among the projects with a positive impact on social, environmental and governance aspects, we highlight: the implementation of the energy efficiency project at the Betim plant, with 27% more efficient compressors, expansion of landfill capacity in areas located close to production, avoiding large freight emissions, improvement in the air emissions control system in all operations, safety adjustments, mainly focused on reducing accidents and improving working conditions.

We contributed with R\$10.6 billion to the local economy, through inputs purchased from third parties, payment of salaries and wages, federal, state and municipal taxes, fees and contributions. We also make a direct economic contribution to the lives of more than 40,000 people, including employees and their dependents - spouses and children up to the age of 21.

In terms of social investments in the communities where we operate, R\$3.6 million was earmarked in 2024 in the form of donations and sponsorships. The main actions are listed in the [Communities](#) section of the previous chapter.

Also noteworthy is the reinforcement obtained for the 2025 investments through the BNDES Mais Inovação program, with the approval of R\$58 million in financing for Tupy, which will be used in a decarbonization project aimed at the agribusiness and transport sectors, with the adaptation of engines originally powered by diesel to ethanol engines. The funding will also be used for digital transformation initiatives at our plants in Betim (MG) and Joinville (SC) to increase the efficiency of these industrial plants.





09

Natural Capital

Environmental Management
Energy
Emissions
Waste Management

Environmental management

[GRI 3-3 Resource and waste management and circular economy, 3-3 Decarbonization; SASB EM-MM-110a.2, SASB EM-MM-150a.10]

Tupy is aware of and collaborates in protecting the environment by continuously improving our processes and indicators related to this issue. Our environmental management works closely with other areas to identify the environmental aspects and impacts of projects and activities in advance.

Internal targets for reducing GHG emissions and particulate matter are part of the program of targets linked to remuneration. For our internal processes, we seek to enable technologies that make it possible to reduce carbon emissions, reduce water consumption, improve efficiency in the use of raw materials and waste, reusing them as much as possible, all in order to minimize environmental impacts.

Our management is guided by an Integrated Environmental Policy and an Environmental Management System (EMS), certified since 2001 by the ISO 14001 standard in all our operations. We monitor air emissions and air quality; groundwater and surface water; noise levels in our operations; the generation and final disposal of waste; and applicable legal and environmental requirements. The leaders of the industrial areas critically analyze the performance indicators and define measures for the continuous improvement of results. Tupy carries out annual internal and external audits, and the points raised are broken down into action plans for the units.

In Tupy's value chain, we combine economic development with environmental preservation.

Golden rules: environment

1.

It is mandatory for all environmental controls defined in the Aspects and Impacts Table to be operational.

2.

Effluents must be sent to the Effluent Treatment Station and/ or external treatment. The discharge of effluents into streets, storm drains, and the stormwater network is prohibited.

3.

In case of leaks in equipment, they must be immediately turned off until the issue is resolved. Every leak must include: (a) containment until a permanent solution is found; and (b) a service request to Maintenance.
4.

Solid waste must be stored and disposed of properly, in accordance with internal procedures.

5.

All renovations, new installations, and modifications must undergo prior environmental evaluation.

6.

All environmental occurrences must be recorded, analyzed, and have their deviations corrected.

Water and Effluents

[GRI 3-3 Resource and waste management and circular economy, GRI 303-1, GRI 303-2]

We have developed guidelines to ensure the quality of the water used and discharged in our processes and we seek to optimize the use of the resource through reuse and efficient treatment. We regularly monitor effluents in order to adhere to internal and external standards.

We follow the environmental standards applicable to our sectors, as well as guidelines from regulatory bodies and industry associations. With regard to discharges, each unit has its own environmental license with different conditions and periodicities, always complying with what is established by the competent bodies. Effluent discharge standards are defined based on the characteristics of the receiving body of water. We carry out detailed assessments and comply with the defined environmental requirements. In addition, we invest in technologies to optimize the use of water in our internal operations, monitoring performance indicators and seeking to reduce our water footprint and improve efficiency.

We currently reuse 86.3% of the water in our units. This figure demonstrates our commitment to the conscious use of water in all our operations.

We aim to continuously improve this indicator, especially in water-stressed areas such as Mexico. The areas are identified and monitored according to the World Resource Institute (WRI), a global research organization used as the information base for the CEO Water Mandate, a tool developed to provide detailed information on river basins around the world.

Our units are committed to conserving and making the most of water through treatment and reuse in our processes and we continually seek to reduce consumption of this resource and the generation of effluents, as well as ensuring quality and safe disposal. In 2024, 56% of the water we collected was purchased from local utilities or water trucks, 40% from groundwater and 4% from surface water.

Our management is based not only on technical aspects, but also on dialog with stakeholders. To this end, we participate in thematic forums and maintain open and regular communication channels with local communities, regulatory bodies and environmental organizations.

Biodiversity

[GRI 3-3 Resource and waste management and circular economy, GRI 304-1, GRI 304-2]

Looking at its materiality matrix, Tupy does not have a specific biodiversity strategy. However, all of our operating units carry out a detailed analysis of the environmental aspects and impacts related to their respective activities.

Based on these assessments, operational controls are implemented to mitigate significant impacts. For each aspect identified, the degree of significance is evaluated considering frequency, scale and severity.

In addition to the continuous improvement of processes, other measures adopted include: environmental monitoring in each region where we operate, recovery of possible impacted areas, protection of natural habitats and promotion of environmental awareness among our employees and the community, such as the SOS Manguezais project, which can be consulted in the Communities section. In addition, we maintain x thousand m² of forest areas, which contribute to the preservation of fauna and flora.



Energy

[GRI 3-3 Decarbonization, GRI 302-1, GRI 302-5]

Tupy’s industrial transformation process is energy-intensive, which is why we have a management system based on analyzing and mapping consumption and prioritizing efficient energy use. This is an essential condition for increasing competitiveness by reducing operating costs and avoiding greenhouse gas emissions in our operations. The energy management system at the Aveiro plant (Portugal) is ISO 50001 certified.

In 2024, we made progress in the energy efficiency of our industrial processes, with the highlight being the reduction in coke consumption at the Saltillo plant, where the rate per ton produced fell by approximately 29%. This improvement was largely driven by the investment in retrofitting the cubilot furnace, enabling better thermal utilization.

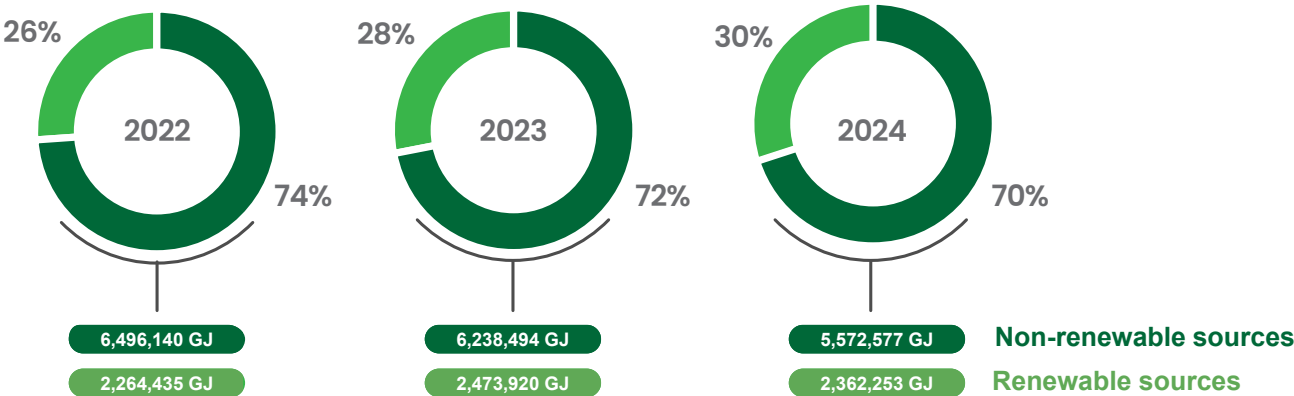
In the last period, we consumed a total of 7,934,829 GJ of energy, derived from electricity, natural gas and coke, a reduction of 9% compared to 2023. The increase in energy intensity was due to the units remaining in operation all year round, regardless of production volume.

Energy intensity¹ (GJ/ton produced) [GRI 302-3]



¹ The subsidiary MWM do Brasil was disregarded from the calculation, as it does not have a common denominator in terms of a production measurement unit.

Energy consumption within the organization [GRI 302-1]





Emissions

Air quality

[GRI 3-3 Air emissions, GRI 305-7, SASB EM-MM-120a.1]

We are fully aware that air emissions directly affect air quality and the surrounding communities. That’s why we take responsibility for mitigating this impact, constantly improving our monitoring and control systems, implementing preventive measures, ensuring compliance with environmental regulations and promoting continuous improvements in operational efficiency.

During 2024, we invested more than R\$11 million in projects related to air emissions. This amount was allocated to air quality monitoring and control systems and to improving and sustaining existing systems and adopting new ones, such as the installation of an exhaust system on a dedicated parts demolding line and a new engine paint booth with dry absorption technology, reducing the emission of Volatile Organic Compounds (VOCs).

We monitor air quality indicators on a daily basis in Joinville and Betim (BR), Saltillo and Ramos Arizpe (MX), enabling us to respond quickly to variations. In Joinville and Saltillo, this procedure is supported by cameras, while the other units are inspected in person. Tupy also correlates meteorological data with air quality results to improve environmental practices.

The work of monitoring and obtaining feedback from interested parties, especially local communities, also contributes to evaluating the issue. In the event of irregularities being identified, our conduct includes readiness for immediate interdiction of processes and referral for resolution.

In 2024, we achieved an 8% reduction in Particulate Matter (PM) emissions compared to 2023. For VOC, the reduction was 10%.

Significant air emissions [GRI 305-7, SASB EM-MM-120a.1]

	2022		2023		2024	
	ton/year	ton/ton produced	ton/year	ton/ton produced	ton/year	ton/ton produced
Volatile Organic Compounds (VOC) ^{1,2}	254.5	0.0005	210.5	0.000330	164.6	0.000296
Particulate Matter (PM) ²	790.5	0.00114	588.7	0.000926	473.8	0.000851

1. VOC: 2022 - Joinville ;2023 - Joinville, Betim and Aveiro.
2. The São Paulo subsidiary, MWM do Brasil, was excluded from the calculation as it does not have a common denominator in terms of production unit measurement.



Greenhouse gas emissions

[GRI 3-3 Decarbonization]

We are aware of the impact of industrial operations on Greenhouse Gas (GHG) emissions, which is why we have prioritized various mitigating and adapting actions to tackle climate change.

In 2024, we reduced direct emissions (scope 1) by 66,782 tCO₂e, or 12% of absolute emissions compared to the previous year, in line with production trends. The variation mainly occurred due to a reduction in emissions from stationary combustion and processes. There was also a reduction of 19,525 tCO₂e in scope 2 emissions, a 10% decrease compared to 2023. A negative impact was observed for plants in Brazil, as a result of the increase in the emission factor of the Brazilian electricity grid, which rose by 41% from one year to the next.

The factors that contributed to the reduction of GHG emissions in 2024 were:

- ▶ Use of recycled coke in melting furnaces, which has a lower carbon intensity than mineral coke, preventing the direct emission of 4,684 tCO₂e.
- ▶ Substitution of coal dust with alternative material in molding lines, which prevented the direct emission of 5,102 tCO₂e.
- ▶ Introduction of coke with vegetable charcoal fines in the production environment, preventing the direct emission of 271 tCO₂e.
- ▶ Renewable energy certificates at the Betim plant, preventing the emission of 9,498 tCO₂e during the year.
- ▶ 61% increase in the use of renewable sources for electricity generation in Portugal, reducing the emission factor by 26%.

Emissions inventory

[GRI 305-1, GRI 305-2, GRI 305-3, GRI 305-4]

The corporate emissions inventory covers all of Tupy's production units and is conducted annually as a way to account for GHG emissions and identify sources in order to establish internal plans involving different strategies, such as: efficiency (reducing energy and input consumption), substitution with less carbon-intensive sources, technology and innovation pathways, and, finally, offsets.

For three consecutive years, the scope 1 and 2 inventory data have been verified by a third party in accordance with ISO 14064 and the GHG Protocol, ensuring the accuracy of the data used as a reference for our mitigation actions.

Direct GHG emissions (scope 1) (tCO₂ equivalent/year)



Other indirect GHG emissions (scope 3) (tCO₂ equivalent/year)



Indirect GHG emissions (scope 2) (tCO₂ equivalent/year)



Intensity of GHG emissions^{2, 3} (tCO₂ equivalent/tonne produced)



1. The increase is due to the expansion of the categories reported under scope 3.
2. The São Paulo subsidiary, MWM do Brasil, was excluded from the calculation, as it does not have a common denominator in terms of production measurement unit.
3. The sum of scope 1 and 2 emissions divided by equivalent production is considered.

Better than the global average

The Greenhouse Gas (GHG) intensity increased from 1.17 to 1.18 tCO₂e per ton produced, a 1% increase compared to 2023. This was mainly caused by the Mexican electricity grid, which relies on fossil sources; production variations and their respective impacts on operational efficiencies; and the increase in non-renewable sources in the Brazilian electricity grid. Nevertheless, the emissions intensity of our units is lower than the global average for the steel sector, which is 1.92 tCO₂e per ton of steel, as reported by the World Steel Association (WSA), an organization representing industries that account for 85% of global production.

Scope 3 emissions

In the last reporting cycle, we increased the number of indicators accounted for in scope 3 by 63%, considering both the reported categories and the scope of the units. This growth is the result of a continuous effort to increase the transparency of the data we present. Another action in this regard is that, in 2025, all suppliers were invited to report their emission inventories within the ESG questionnaire in which they are assessed.

In total, scope 3 accounted for 618 thousand tCO₂e, representing 48% of the GHG emissions in the 2024 inventory. Of this, 52% of the emissions in this scope are concentrated in category 1, related to purchased goods and services, which is a new category accounted for. Categories 4 and 9, related to upstream and downstream transportation and distribution, together contribute to 42% of scope 3 emissions, due to fuel consumption for road, rail, maritime, and air transport modes.

Technological innovation for decarbonization

[SASB EM-MM-110a.2]

In partnership with research institutes and startups through our Open Innovation Portal, we are advancing innovative technologies for the decarbonization processes of our smelting furnaces. Experiments are carried out on a pilot scale, evaluating the decarbonization potential and economic viability of the proposed solutions.

The first route for our decarbonization process involves the use of biomass. Our Research & Development (R&D) department is researching the possibility of partially replacing the mineral coke used in the ovens with biomass briquettes, with the potential to reduce direct emissions.



More information can be found in the **Manufactured and Intellectual Capital chapter**.

For the long term, we are analyzing the combination of natural gas, biomethane and hydrogen as fuels and the injection of fines into the combustion zone for our furnaces. We have also been studying carbon capture and storage (CCS) technologies, changes in the machining stage – the production of molds that give shape to parts - that reduce the drying process of sand cores.

Our CO₂e inventory

Tupy has more than 5,000 hectares of preserved forest area. In 2024, we will store 2.3 million tons of CO₂e by maintaining these areas. This amount is not deducted from our GHG emissions, but reflects the company's commitment to biodiversity and the environmental preservation of our surroundings.

Waste management

[GRI 3-3 Resource and waste management and circular economy, GRI 306-1, GRI 306-2; SASB EM-MM-150a.10]

Like any manufacturing industry, Tupy generates a large volume of waste in its operations, which can have negative impacts. In order to minimize possible damage, we have solid waste management plans at all our units, with actions aimed at reducing consumption and the efficient use of materials, recycling, treatment and proper disposal.

These measures are not restricted to regulatory compliance in each country where we operate, but include internal and external audits, carried out annually, and targets for reducing the amount of waste sent to landfills. Our governance of this issue involves monitoring processes using indicators: waste generation, disposal and compliance with legal requirements. These are evaluated periodically by the Environment area and in specific committees. In 2024, an internal target was set to reduce the rate of waste going to landfill by 8.25% compared to 2023, and we achieved a 13.4% reduction, exceeding the target and strengthening our commitment to the issue.

The main initiatives adopted to reduce the volume of waste in 2024 were:

- ▶ Maintaining the operating levels of the regeneration units to ensure the reuse of sand in internal processes.
- ▶ Maintaining destinations for internal and external waste recycling processes.
- ▶ Greater use of foundry sand in reuse projects.
- ▶ Revision of internal processes, incorporating sand previously discarded in landfills.

Reducing waste and finding new uses for waste are ongoing activities for the team, with the aim of increasing the amount of waste recycled per ton produced, which can be used for other internal purposes or in other value chains.



Circular economy

Scrap recycling

[GRI 3-3 Resource and waste management and circular economy, GRI 301-1, GRI 301-2; SASB EM-MM-150a.10]

Last year, we transformed 539,000 tons of ferrous scrap into high value-added products. This material represents our main raw material and comes from items that have been discarded by society, such as stoves, refrigerators and cars and from the metalworking and automotive industries, as well as parts, machinery and equipment.

The use of scrap in our activities reduces the need to extract new mineral resources from nature, reduces GHG emissions into the atmosphere, avoids disposing of materials in landfills, generates employment and income, and increases the efficiency of production processes. Every ton of scrap used in the process avoids the emission of 1.2 tons of CO₂e, since it has a 92% lower carbon footprint than crude iron, the metallic raw material from the extraction of iron ore.

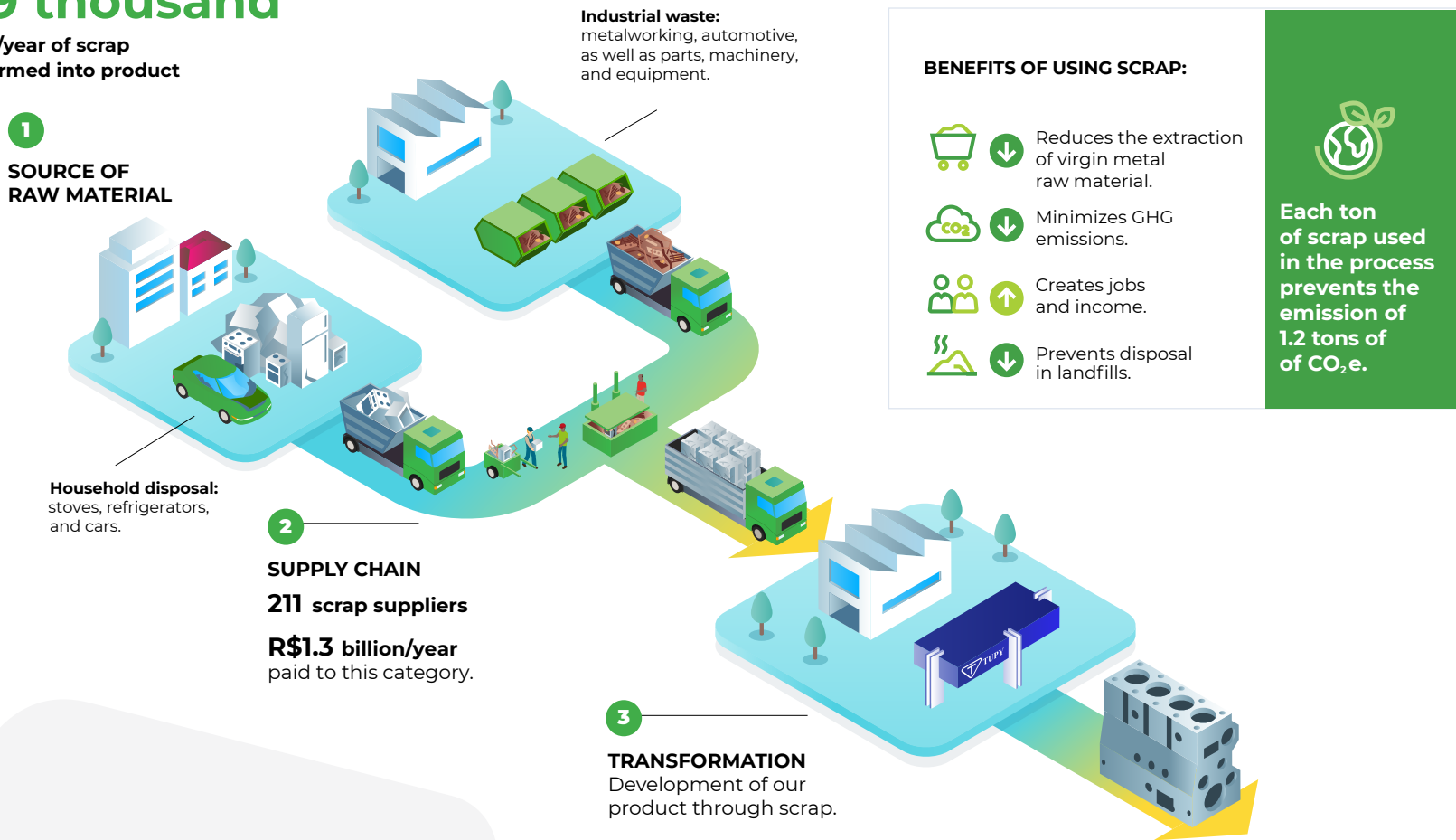
Transforming scrap into a product

[GRI 3-3 Resource and waste management and circular economy; SASB EM-MM-150.a10]

FROM SCRAP TO OUR PRODUCTS

539 thousand

tonnes/year of scrap transformed into product





Recycling other materials

[GRI 3-3 Resource and waste management and circular economy, GRI 301-2; SASB EM-MM-150a.10]

Tupy has also sought greater efficiency in internal regeneration to return waste to the process that would otherwise be sent to landfill. We have mapped out opportunities to send materials to another application, benefiting external production chains.

In 2024, the rate of use of recycled raw materials remained stable compared to 2023, reflecting the continuity of Tupy's efforts to optimize the use of natural resources. Metallic material of recycled origin remained at a high rate of use, reaching 95.6%, a figure close to that of the previous year.

Sand

In 2024, more than 451,000 tons of residual sand, resulting from the manufacture of sand core pieces, were transformed into new sand, which returned as an input to our process. We have eight regeneration units in our

factories, which recycled almost half of the material used last year. In three years, Tupy has expanded four regeneration units and increased the capacity for reuse and circularity of the mineral.

Of particular note is the significant increase in the use of recycled sand, which rose from 39.1% in 2023 to 46.9% in 2024. This growth was driven by initiatives at units in Mexico aimed at increasing the regeneration of sand used in production processes. These actions have made it possible to reduce both the need to consume new sand and the volume going to landfill.

It is also worth highlighting our progress in the reuse of Foundry Sand (ADF), especially in Joinville. We are discussing opportunities to expand its use in other production chains in the region and in Betim (MG).

Iron chip briquettes

100% of the metal chips generated in the machining process of our automotive components are compacted and transformed into raw material. This material is of higher quality than crude iron, a raw material of non-renewable origin.

Coke

In 2024, the ovens that use this raw material operated with 13.4% coke derived from recycling, which avoided the direct emission of 4,684 tons of CO₂ equivalent and the extraction of around 9.2 thousand tons of non-renewable natural resource.

Catalysts

At the Ramos Arizpe and Saltillo (MX) units, catalyst is used that comes from recycling the chemical solution generated in the gas treatment operations at the mill. In 2024, 21.7% of the volume of catalysts was recovered.

Water

In 2024, we reused 86.3% of industrial and sanitary effluents, which are treated and returned to the process as industrial water, being used to cool furnaces, cooling towers and prepare inputs. With water reuse reaching 100% in some of our units, we no longer consume approximately 1.6 billion liters per year.

Packaging

[GRI 301-3]

In 2024, 30% of our post-consumer packaging from the MWM brand's lines of pipe fittings, spare parts, engines and generator sets was recycled, which corresponds to 545 tons of plastic and cardboard. This process is carried out in partnership with Eureciclo, which has awarded us the seal of approval as a company that invests in recycling.

Raw materials and materials of recycled origin [GRI 301-2]

	2022	2023	2024
Metallic material	94.0	95.2	95.6
Sand	35.0	39.1	46.9
Coke	18.0	13.3	13.4
Catalyst	20.0	20.8	21.7

By-products

[SASB EM-MM-150a.10]

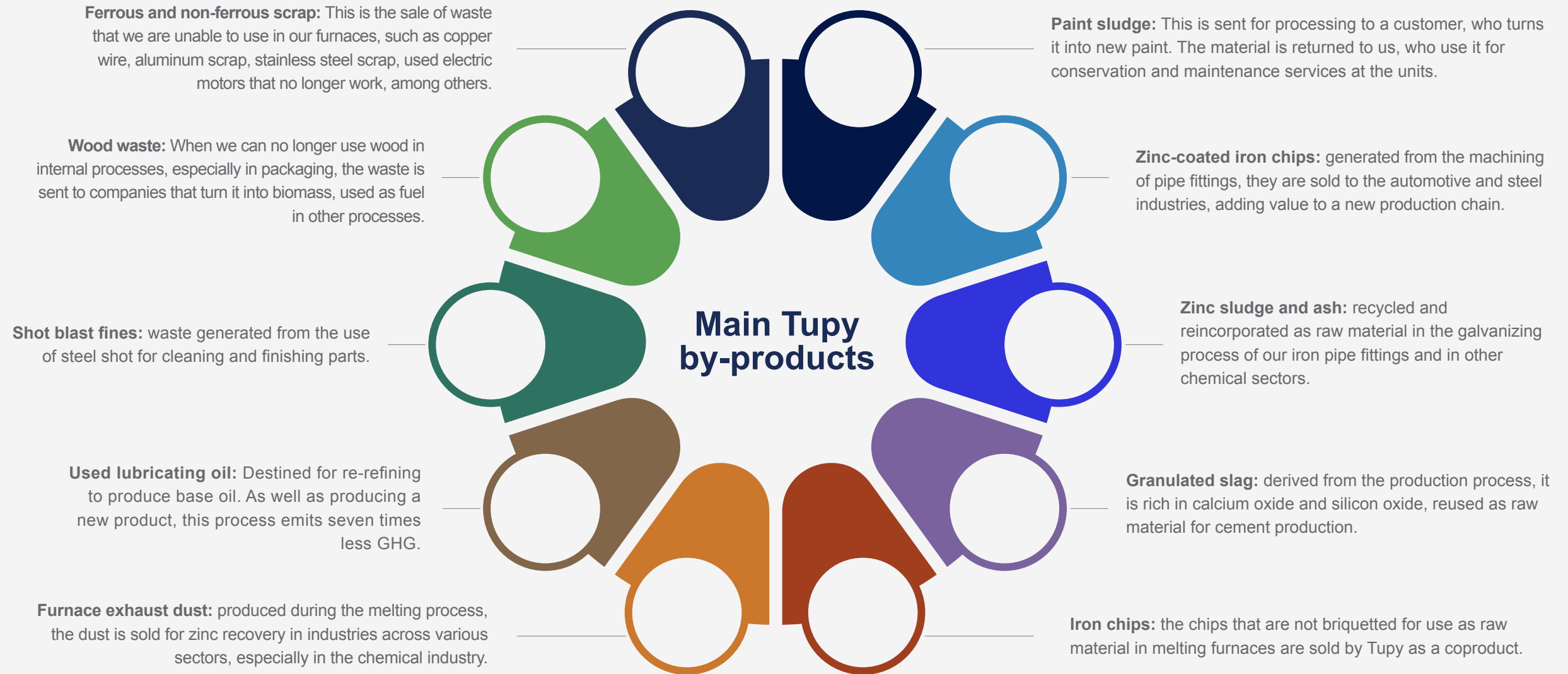
By-products are wastes generated in Tupy's operations that become raw materials in other production chains, such as the cement, chemical, steel and automotive industries. The area aims to generate value for the residues and revenue for the company from the sale of these materials.

Our by-products are the result of the work of a team committed to finding solutions for disposing of waste in accordance with the fundamentals of the circular economy. They promote environmental benefits by not disposing of them in landfills and reducing the consumption of natural resources. In 2024, the By-products area was restructured, with expansion to all our units and the appointment of a person responsible in each of them for better performance of activities in the industrial plants. The synergy of this sector with the other areas of the company is of great importance to the success of the business, especially with the environmental area, in order to control the environmental requirements needed to be met by our clients.

Last year, our revenue from the sale of by-products was R\$37 million, which is 26% more than in 2023. This result reflects the commitment and dedication to the business caused by its strengthening in the period.

- ▶ 1,1 million tons of recycled waste.
- ▶ 51 thousand tons of residual sand destined for construction sites, landscaping, the cement and ceramics industries.
- ▶ Over 183 thousand tons of by-products destined as raw materials for other industries.
- ▶ R\$37 million in revenue from by-products.







10 Annexes

Complementary indicators

GRI content index

SASB content index

TCFD disclosure

Credits



Complementary indicators

Employees [GRI 2-7; SASB RT-IG-000.B, SASB EM-MM-000.B]

	2022		2023		2024¹	
	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
By gender						
Men	17,480	35	18,857	82	16,748	6
Women	1,420	12	1,851	11	1,706	0
By region						
Brazil	13,842	0	15,271	2	13,875	0
Mexico	4,694	0	5,041	0	4,168	0
Europe	354	47	383	91	400	6
United States	10	0	13	0	11	0

1. The variation in employees is directly related to global macroeconomic factors, as well as synergies between newly acquired units.

Workers who are not employees [GRI 2-8]

	2022		2023		2024	
	Direct hiring	Indirect contracting (through a third party)¹	Direct hiring	Indirect contracting (through a third party)¹	Direct hiring	Indirect contracting (through a third party)¹
By type of contract						
Apprentices	153	22	208	17	174	17
Trainees	55	21	76	10	81	15
Employed	0	1,047	99	1,900	82	2,263
Temporary	0	139	9	157	31	90
Subcontractors	0	155	0	111	0	59
Total	1,592		2,587		2,812	

1. Workers hired through a third party work in various areas of the company, such as Administration, Maintenance, Engineering, Internal Restaurants, Cleaning, Asset Security, Health, among others.



Membership associations

[GRI 2-28]

Allianz Wassertoffmotor.
Associação Brasileira do Biogás (ABiogás).
Associação Brasileira da Indústria de Autopeças (Sindipeças/Abipeças).
Associação Brasileira do Hidrogênio (ABH2).
Associação Brasileira de Fundação (Abifa).
Associação Brasileira de Máquinas e Equipamentos (Abimaq).
Associação de Engenharia Automotiva (AEA).
Associação Empresarial de Joinville (ACIJ).
Associação Nacional de Pesquisa e Desenvolvimento das Empresas Inovadoras (Anpei).
Câmara Nacional de la Industria de Transformación (Canacintra).
Clúster de la Industria Automotriz de Coahuila (CIAC).
Confederación Patronal de la República Mexicana (Coparmex).
Confederação Nacional da Indústria (CNI).
Federação das Indústrias do Estado de Minas Gerais (Fiemg).
Federação das Indústrias do Estado de Santa Catarina (Fiesc).
Federação das Indústrias do Estado de São Paulo (Fiesp).
Instituto Brasileiro de Governança Corporativa (IBGC).
Indústria Nacional de Autopartes (INA).

Member of governance bodies

Associação Brasileira da Indústria de Autopeças (Sindipeças/Abipeças)
Associação Empresarial de Joinville (ACIJ)
Associação Nacional de Pesquisa e Desenvolvimento das Empresas Inovadoras (Anpei)

Approach to stakeholder engagement [GRI 2-29]

Public	Channels	Topics raised
Shareholders and investors	Meetings with the Investor Relations team; Earnings release; Quarterly conference call; Announcements to the market / Material facts; Investor Relations website; Investors Day; Participation in conferences and live streams.	Profitability; Execution of business strategy; Investment plans; ESG.
Board of directors	Meetings, according to the schedule established for the year.	Corporate strategy; risks; compliance; ESG.
Employees	Internal Communication App (TupyOn); E-mail; Intranet; Training; Events; Leadership.	Well-being; safety; professional development; remuneration; benefits.
Trade unions	Base date meetings and negotiations.	Remuneration and benefits.
Clients	Project meetings (co-development); Monitoring the performance of products and services (Quality); Commercial contact (account manager); Events and meetings.	Quality; Operational Excellence; Service; Innovation.
End consumers	Social networks; Product manuals.	Quality; Operational Excellence; Service; Innovation.
Suppliers	Meetings; Dedicated system for interaction with suppliers; E-mails.	Profitability; Transparency.
Local community	Specific e-mail for interaction with the community (comunidade@tupy.com.br); Meetings on demand; Social networks.	Socio-environmental impact; local development.
Government and regulators	Meetings	Socio-environmental impact; local development; regulations; industrial policies.
Press	Sending press releases; Relationship meetings; Events.	Reputation; Innovation; Profitability; Sustainability.
Academia	Project development partnerships; Open Innovation Portal.	Innovation; technology; R&D.
Startups	Own startup accelerator (ShiftT); Open Innovation Portal; Events; Social media.	Innovation; technology; R&D.
Entities and Associations	Meetings and participation in committees.	Sector trends; best practices; regulations.
Industry	Meetings and participation in committees.	Sector trends; best practices; regulations.

Ratios of standard entry level wage by gender compared to local minimum wage, with breakdown by gender (%)¹ [\[GRI 202-1\]](#)

	2022				2023				2024			
	Employees		Workers who are not employees		Employees		Workers who are not employees		Employees		Workers who are not employees	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Brazil												
Joinville (SC)	1.3	1.3	1.3	0.9	1.4	1.3	1.3	1.3	1.6	1.6	1.2	1.2
Betim (MG)	1.6	1.6	0.7	0.7	1.7	1.7	0.7	0.7	1.6	1.6	1.0	0.9
São Paulo (SP) ²	-	-	-	-	2.1	1.7	1.0	1.0	1.6	1.7	1.0	1.0
Mexico												
Saltillo ³	1.3	1.3	0.8	0.8	1.8	1.8	1.4	1.4	2.0	2.0	-	1.6
Ramos Arizpe ³	1.2	1.2	1.1	1.1	1.3	1.9	1.3	1.3	1.5	1.4	-	1.1
Portugal												
Aveiro	1.0	1.0	1.0	1.0	1.1	1.1	1.7	1.1	1.1	1.1	1.0	1.0

1. The indicator only considers manufacturing units. Only trainees and apprentices earn less than the minimum wage.
2. The São Paulo unit was incorporated in 2023
3. We did not have male workers in these units during the 2024 period.



New employee hires [GRI 401-1]

	2022		2023		2024	
	Number	Rate	Number	Rate	Number	Rate
By gender						
Men	5,351	0.3	5,426	0.3	3,568	0.2
Women	470	0.3	777	0.4	599	0.3
By region						
Brazil	3,966	0.3	3,480	0.2	2,604	0.2
Mexico	1,787	0.4	2,606	0.5	1,541	0.4
United States	1	0.1	3	0.2	1	0.1
Europe	67	0.2	114	0.2	21	0.0
By age group						
Less than 30 years old	3,179	0.6	3,485	0.6	2,279	0.5
From 30 to 50 years old	2,491	0.2	2,560	0.2	1,740	0.2
Over 50 years old	151	0.1	158	0.0	148	0.0
Total	5,821	0.3	6,203	0.3	4,167	0.2

Employee turnover [GRI 401-1]

	2022		2023		2024	
	Number¹	Rate²	Number¹	Rate²	Number¹	Rate²
By gende						
Men	5,322	0.3	5,819	0.3	6,181	0.4
Women	444	0.3	514	0.3	552	0.3
By region						
Brazil	3,674	0.3	3,467	0.2	4,053	0.3
Mexico	2,053	0.4	2,823	0.6	2,590	0.6
United States	3	0.3	-	-	3	0.3
Europe	36	0.1	43	0.1	87	0.2
By age group						
Less than 30 years old	2,866	0.5	3,318	0.6	3,053	0.7
From 30 to 50 years old	2,785	0.2	2,666	0.2	3,136	0.3
Over 50 years old	115	0.0	349	0.1	544	0.2
Total	5,766	0.3	6,333	0.3	6,733	0.4

1. Empregados que deixaram a Empresa (voluntário e involuntário).
2. Metodologia de cálculo: total de desligamentos de empregados no ano dividido pelo total de empregados no fechamento do ano.



Parental leave [\[GRI 401-3\]](#)

	2022			2023			2024		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
Employees entitled to take leave	17,515	1,432	18,947	18,939	1,862	20,801	16,754	1,706	18,460
Employees who took leave, in the reference year ¹	671	56	727	654	59	713	557	86	643
Employees who returned to work after leave ended, in the reference year ²	671	54	725	651	52	703	557	85	642
Return to work rate (%) ³	100	96	100	100	88	99	100	99	100

1. It includes all employees who took leave, regardless of when they are expected to return.
2. It includes all employees who have returned and remained with the company for at least one month.
3. Total number of employees who returned to work after maternity or paternity leave/Total number of employees who were expected to return to work after maternity or paternity leave.

Number of work-related ill health cases¹ [\[GRI 403-10\]](#)

	2022	2023	2024
	29	24	58

1 The main types of occupational illnesses identified are related to inflammation of tendons and joints (such as tendonitis), noise-induced hearing loss, intervertebral injuries and problems (dorsalgia, lumbago), wear and tear of joints due to repetitive strain.

Performance reviews (%) [\[GRI 404-3\]](#)

	2022			2023			2024		
	Men	Women	Total	Men	Women	Total	Men	Women	Total
Employee category									
Executives	100	-	100	94.7	-	94.7	100	100	100
Management	100	100	100	93.9	83.3	92.6	98.7	100	98.8
Leadership/coordination	100	100	100	95.3	95.5	95.3	97.9	100	98.3
Technical/supervision	100	100	100	81.1	93.8	81.7	98.3	95.4	98.1
Administrative	100	100	100	94.2	91.8	93.5	96.1	95.1	95.8
Total	100	100	100	90.8	91.9	91.0	97.6	95.6	97.3

1 Eligible employees are active employees in positions in the following categories (Directors, Managers, Coordinators, Monthly Technicians, Supervisors and Administrative staff) who were hired or promoted before August 31st. After this date, the employee participates in the performance cycle of the following year.
2. The employees from the São Paulo unit were included in the 2024 evaluations, except for the directors and executives of the unit.



People with Disabilities (PWDs) by employee category¹ [GRI 405-1]

	2022		2023		2024	
	Nº	%	Nº	%	Nº	%
Board ²	0	0.0	0	0.0	0	0.0
Executives ³	0	0.0	0	0.0	0	0.0
Management	1	0.9	1	0.9	2	1.9
Leadership/coordination	1	0.6	1	0.5	3	1.4
Technical/supervision	19	1.3	18	1.1	30	1.9
Administrative	15	1.3	31	2.1	41	2.9
Operational	298	1.9	371	2.1	456	3.0

1 PWD information is not collected in Mexico, Aveiro and the US and European offices.
2 Accounts for permanent members of the Board of Directors.
3 Accounts for statutory directors, as well as non-statutory directors.

Ratio of basic salary and remuneration of women to men¹ (%) [GRI 405-2]

	2022		2023		2024 ²	
	Base salary	Remuneration ³	Base salary	Remuneration ³	Base salary	Remuneration ³
Management	110	110	125	125	96	96
Leadership/coordination	100	100	95	95	94	95
Technical/supervision	96	96	94	94	96	96
Administrative	96	97	101	101	98	98
Operational	98	98	96	96	96	96

1. Operational units with manufacturing and corporate facilities were considered.
2. The variation in some categories occurred mainly due to the reduction in the total number of employees and, simultaneously, promotions, where the initial salary is different from the average of the functional category.
3. Compensation includes both fixed and variable components, as well as bonuses.

Total and percentage of governance body members and employees who were informed and trained on anti-corruption policies and procedures, by job category [\[GRI 205-2\]](#)

		2022		2023		2024	
		Communicated	Trained	Communicated	Trained	Communicated	Trained
Members of the governance body	Number	15	15	15	15	33	33
	%	100	100	100	100	100	138
Board of Directors ¹	Number	27	22	28	28	29	29
	%	100	81	100	100	100	100
Management	Number	110	90	115	97	102	64
	%	100	82	100	84	100	63
Leadership/coordination	Number	179	150	215	171	209	164
	%	100	84	100	80	100	78
Technical/supervisory	Number	1,493	1,346	1,590	365	1,521	377
	%	100	90	100	23	100	25
Administrative	Number	1,139	1,043	1,477	1,149	1,390	1,513
	%	100	92	100	78	100	109
Operational	Number	15,976	13,668	16,170	4,051	13,886	13,228
	%	100	86	100	25	100	95
Trainees	Number	75	70	85	77	95	46
	%	100	93	100	91	100	48
Apprentices	Number	153	78	217	131	185	13
	%	100	51	100	60	100	7
All positions	Number	19,167	16,482	19,912	6,084	17,450	15,467
	%	100	86	100	31	100	89

1. It includes statutory and non-statutory directors.

Total and percentage of governance body members and employees who were informed and trained on anti-corruption policies and procedures, by region [\[GRI 205-2\]](#)

		2022		2023		2024	
		Communicated	Trained	Communicated	Trained	Communicated	Trained
Brazil	Number	14,042	11,550	14,415	4,661	12,923	10,730
	%	100	82	100	32	100	83
Mexico	Number	4,714	4,714	5,009	1,242	4,108	4,196
	%	100	100	100	25	100	102
United States	Number	10	3	13	7	11	11
	%	100	30	100	54	100	100
Europe	Number	401	215	475	174	408	530
	%	100	54	100	37	100	130
All regions	Number	19,167	16,482	19,912	6,084	17,450	15,467
	%	100	86	100	31	100	89



Total and percentage of business partners' who were informed and trained on anti-corruption policies and procedures, by region [\[GRI 205-2\]](#)

		2022¹		2023		2024	
		Communicated	Trained	Communicated	Trained	Communicated	Trained
Brazil	Number	-	-	6,117	71	3,800	0%
	%	-	-	100%	1%	100%	0%
Mexico	Number	-	-	919	0	1,000	0%
	%	-	-	100%	0%	100%	0%
United States	Number	-	-	0	0	0	0
	%	-	-	0%	0%	0%	0%
Europe	Number	-	-	134	0	300	0%
	%	-	-	100%	0%	100%	0%
All regions	Number	-	-	7,170	71	5,100	0%
	%	-	-	100%	1%	100%	0%

1. We started presenting this indicator in 2023; therefore, there is no three-year historical basis.

Materials used by weight or volume (t) [\[GRI 301-1\]](#)

	2022	2023	2024
Metallic materials (various scraps, returns, briquettes and crude iron)	1,344,427	1,211,098	1,082,864
Sand	1,016,916	972,974	963,263
Coke	88,474	89,937	75,119
Catalyst	1,458	1,330	966
Coal dust	20,903	17,864	13,099
Bentonite	74,287	62,069	63,667
Limestone	45,091	43,992	37,767
Resin	12,762	12,101	11,198
Iron alloys	51,472	49,981	45,284
Total	2,655,790	2,461,345	2,293,226

Materials shipped and recovered in 2024 (tons) [\[GRI 301-3\]](#)

	Paper/cardboard	Plastics	Total
Volume of packaging sold	1,781,0	7,0	1,787,5
Volume of packaging recovered	543,0	2,0	545,0
Percentage of packaging recovered (excluding returns and recalls) (%)	31	30	30

Energy consumption within the Organization (GJ) [GRI 302-1, SASB EM-MM-130a.1]

	2022	2023	2024
Consumption of fuels from non-renewable sources	6,496,140	6,238,494	5,572,577
Coke	2,556,014	2,549,397	2,170,201
Electricity	1,961,862	1,604,447	1,514,137
Natural gas	1,809,053	1,890,906	1,720,079
Diesel	169,211	193,743	168,160
Total energy consumed that was supplied by grid electricity	4,231,503	4,078,367	3,860,276
Percentage of energy consumed that was supplied by grid electricity (%)	48	47	49
Consumption of fuels from renewable sources	2,264,435	2,473,920	2,362,253
Percentage of energy consumed from renewable sources (%)	26	28	30
Total	8,760,575	8,712,414	7,934,829

Water withdrawal (megaliters) [GRI 303-3]

	2022		2023		2024	
Water withdrawal by source	All areas	Areas with water stress	All areas	Areas with water stress	All areas	Areas with water stress
Surface water (total)	101	0	98	0	68	0
Groundwater (total)	624	181	697	220	658	312
Third-party water (total)	992	441	1,002	483	939	365
Total water consumed	1,716	622	1,797	703	1,665	677

1. Indicator began to be measured in 2022. All water withdrawn is fresh (≤1,000 mg/L Total Dissolved Solids).

Water discharge by destination (megaliters) [GRI 303-4]

	2022 ¹		2023		2024	
	All areas	Areas with water stress	All areas	Areas with water stress	All areas	Areas with water stress
Surface water	119.4	119.4	177.1	177.1	166.3	166.3
Third-party water sent for use in other organizations	65.3	54.0	98.3	52.7	99.7	62.1
Total discarded	184.7	173.4	275.4	229.8	266.0	228.4

Water consumption (megaliters) [GRI 303-5]

	2022 ¹	2023	2024
	All units	All units	All units
Total water consumption (megaliters)	1,531	1,537	1,400
Total water consumption of all water-stressed areas (megaliters)	448	473	448



Generated waste [\[GRI 306-3; SASB EM-MM-150a.7\]](#)

	2022	2023	2024
Non-hazardous waste (t)			
Internally reused (steel shots)	3,103	3,655	2,806
Internally recycled/regenerated (sand, scrap, iron shavings)	972,311	985,155	856,039
Sent for external recycling (recycling/reuse)	150,659	154,150	198,808
Disposed of in landfill	839,337	802,857	634,592
Incinerated	0	0	-
Hazardous waste (t)			
Sent for external recycling (recycling/reuse/co-processing)	9,398	10,329	8,599
Disposed of in landfill	1,904	2,229	2,248
Incinerated	0	0	-
Temporarily stored within the plants¹	54,469	-4,545	-44,724
Total waste (t)	2,031,182	1,953,830	1,658,367
Total waste generated per ton of equivalent production (t/t produced)	2.9	3.1	3.0

1. Represents the variation of waste temporarily stored at the plants. A positive variation indicates an accumulation of waste generated during the year, while a negative variation indicates the removal of waste accumulated from previous years.

Waste diverted from disposal per recovery operation, in metric tons (t) [GRI 306-4; SASB EM-MM-150a.8]

	2022			2023			2024		
	Within the organization	Out of the organization	Total	Within the organization	Out of the organization	Total	Within the organization	Out of the organization	Total
Non-hazardous waste									
Preparation for reuse	3,103	0	3,103	3,655	-	3,655	2,806	-	2,806
Recycling	972,311	150,659	1,122,971	985,155	154,150	1,139,306	856,039	198,808	1,054,847
Total non-hazardous waste not destined for disposal	975,414	150,659	1,126,073	988,811	154,150	1,142,961	858,845	198,808	1,057,652
Hazardous waste									
Recycling	0	9,398	9,398	0	10,329	10,329	0	8,599	8,599
Total hazardous waste not disposed of	0	9,398	9,398	0	10,329	10,329	0	8,599	8,599
Total hazardous and non-hazardous	975,414	160,058	1,135,472	988,811	164,479	1,153,290	858,845	207,407	1,066,252

Waste sent for final disposal, in metric tons (t) [GRI 306-5]

	2022			2023			2024		
	Within the organization	Out of the organization	Total	Within the organization	Out of the organization	Total	Within the organization	Out of the organization	Total
Non-hazardous waste									
Landfill	666,994	177,924	844,918	586,555	216,300	802,857	493,130	141,462	634,592
Total	666,994	177,924	844,918	586,555	216,300	802,857	493,130	141,462	634,592
Hazardous waste									
Landfill	0	1,904	1,904	0	2,229	2,229	0	2,248	2,248
Total	0	1,904	1,904	0	2,229	2,229	0	2,248	2,248
Total hazardous and non-hazardous	666,994	179,828	846,822	586,555	218,529	805,086	493,130	143,710	636,840

Materiality

Our material topics [\[GRI 3-2\]](#)

Topic	Scope	Impact limits	GRI content and related SDGs
Decarbonization	Investments and partnerships in Research and Development (R&D) to offer products and services that contribute to reducing the carbon footprint of current and potential clients, as well as initiatives to reduce energy consumption in operations, expand the use of alternative fuels and limit Greenhouse Gas (GHG) emissions in the production process.	Internal and external (customers, suppliers, employees, government and society)	Economic performance: GRI 201-2 – ODS 13.1 GHG emissions: GRI 305-1, 305-2,305-3, 305-4, 305-5 – ODS 3.9,12.4, 13.1,14.3, 15.2 Energy: GRI 302-5 – ODS 7.3, 8.4, 12.2, 13.1
Air emissions	Considers local emissions of particulate matter (PM) from the production process and initiatives to increase the efficiency of units in terms of environmental control.	Internal and external (customers, suppliers, employees, government and society)	Emissions: GRI 305-7 – ODS 3.9, 12.4, 14.3, 15.2
Resource management, waste and circular economy	Sustainable use of non-renewable natural resources through the consumption of recycled raw materials in the production process, as well as business development and efficiency gains related to recycling, reuse and waste treatment.	Internal and external (customers, suppliers, employees, third parties, society, communities and government)	Materials: GRI 301-1, 301-2 e 301-3 – ODS 8.4, 12.2, 12.5 Waste: GRI 306-1, 306-2, 306-3, 306-4 e 306-5 – ODS 3.9, 6.3, 6.4, 6.6, 11.6, 12.4, 12.5, 14.1, 15.1, 15.5
Governance	Good corporate governance practices, which involves transparency and integrity, risk management, accountability, fair and equal treatment of stakeholders.	Internal and external (all stakeholders)	General Disclosures: GRI 2-9 a 2-21 – ODS 5.5, 16.6, 16.7
Ethics and compliance	Measures to combat breaches of ethical conduct, non-compliance with laws and regulations, labor violations, corruption, striving for transparency and ethical relations with all stakeholders.	Internal and external (all stakeholders)	General Disclosures: 2-23, 2-24 e 2-27 – ODS 16.3 Anti-corruption: GRI 205-1, 205-2, 205-3 – ODS 16.5 Anti-competitive Behavior: GRI 206-1 – ODS 16.3 Public Policy: GRI 415-1 – ODS 16.
Innovation and product quality	Initiatives to ensure product quality and safety throughout the value chain and promote opportunities through innovation, digital transformation and solutions connected to our strategy.	Internal and external (customers, suppliers, partners, startups, universities, among others)	ODS 9.4; 9.5 (investment in R&D) Customer health and safety: GRI 416-1, 416-2; ODS 16.3
People development	Initiatives to attract, engage and develop talent, which includes promoting an inclusive work environment and offering growth opportunities for all people.	Internal and external (employees and society)	Employment: GRI 401-1, 401-2, 401-3 – ODS 3.2, 5.1, 5.4, 8.5, 8.5, 8.6, 10.3 Training and education: GRI 404-1, 404-2, 404-3 – ODS 4, 5.1, 8.5, 10.3
Diversity and inclusion	Promote a diverse and inclusive work environment, ensuring fair treatment, access and equal opportunities at all levels of the organization.	Internal (employees and third parties)	Diversity and Equal Opportunity: GRI 405-1, 405-2 – ODS 5.1,5.5, 8.5, 10.3 Non-discrimination: GRI 406-1 – ODS 5.1, 8.8
Safety, health and well-being	Management of the safety and health of employees and third parties, with measures to prevent accidents and actions to promote quality of life.	Internal and external (employees, third parties and suppliers)	Occupational Health and Safety: GRI 403-1 a 403-10 – ODS 3.3, 3.7, 3.8, 3.9, 8.8, 16.1, 16.7
Sustainable supply chain	Responsibility towards the supply chain, by demanding compliance with legislation and guidelines on environmental, social and ethical impact, as well as encouraging the adoption of sustainable practices.	Internal and external (suppliers, third parties and partners)	Procurement Practices: GRI 204-1 – ODS 8.3 Supplier Environmental Assessment: GRI 308-1, 308-2 Supplier Environmental Assessment: GRI 414-1, 414-2 – ODS 5.2, 8.8, 16.1 Child Labor and Forced or Compulsory Labor: GRI 408-1 e 409-1 – ODS 5.2, 8.7, 16.2
Impact on the local community	Generation of direct and indirect jobs in the places where we operate, private social investment, dialog with the surrounding communities to identify and reduce any impacts and other initiatives.	External (community and government)	General Disclosures: GRI 2-7, 2-8 – ODS 8.5, 10.3 Market Presence: GRI 202-1 – ODS 1.2, 5.1, 8.5 Indirect economic impacts: GRI 203-1, 203-2 – ODS 1.2, 1.4, 3.8, 5.4, 8.2, 8.3, 8.5 9.1, 9.4, 11.2 Local communities: GRI 413-2 – ODS 1.4, 2.3

Statement of Added Value

TUPY S.A. AND SUBSIDIARIES FOR THE YEAR ENDED DECEMBER 31, 2024 AND 2023
(In thousands of BRL)

	Holding		Consolidated	
	12/31/2024	12/31/2023	12/31/2024	12/31/2023
Generation of Added Value	4,374,303	5,009,457	11,710,628	12,392,473
Sales of products, net of returns and discounts	4,369,760	4,977,599	11,709,772	12,336,961
Other (expenses) income	8,961	29,103	8,961	29,103
Allowance for losses in receivables	(4,418)	2,755	(8,105)	26,409
(-) Raw materials purchased from third parties	(2,819,371)	(3,180,330)	(7,651,425)	(8,260,866)
Raw materials and consumed process materials	(2,374,469)	(2,589,427)	(5,029,533)	(5,469,915)
Materials, energy, third-party services, and others	(444,902)	(590,903)	(2,621,892)	(2,790,951)
GROSS ADDED VALUE	1,554,932	1,829,127	4,059,203	4,131,607
Retentions	(184,026)	(136,347)	(637,224)	(635,817)
Depreciation and amortization	(153,514)	(148,070)	(387,098)	(366,540)
Impairment provisions	(30,512)	11,723	(250,126)	11,723
Net added value generated	1,370,906	1,692,780	3,421,979	3,776,790
Added value received in transfer	101,728	372,308	152,067	108,104
Equity income from subsidiaries	40,246	318,005	-	-
Financial income	61,482	54,303	152,067	108,104
ADDED VALUE TO DISTRIBUTE	1,472,634	2,065,088	3,574,046	3,884,894

	Holding		Consolidated	
	12/31/2024	12/31/2023	31/12/24	12/31/2023
Distribution of Added Value				
From labor	882,382	888,371	2,184,094	2,267,866
Employees	629,216	627,014	1,766,729	1,853,862
Social security charges (FGTS)	43,182	44,388	79,449	78,226
Profit-sharing or bonuses	74,961	86,566	114,096	122,101
Administration fees	27,384	24,057	27,384	24,057
Health and safety at work	67,431	70,074	107,855	107,374
Meals	14,708	14,745	29,323	27,727
Education, training, and professional development	1,072	1,342	3,877	4,394
Other values	24,428	20,185	55,381	50,125
From the government	172,249	332,571	808,665	633,537
Federal taxes, fees, and contributions	143,980	287,452	695,322	498,961
State taxes and fees	18,716	36,741	102,011	124,618
Municipal taxes, fees, and others	9,553	8,378	11,332	9,958
From third-party capital	338,489	336,006	498,847	466,478
Financial expenses	326,785	277,875	400,941	340,075
Net monetary and exchange variations	10,647	55,827	51,665	59,524
Rentals	1,057	2,304	46,241	66,879
From own capital	79,514	508,140	82,440	517,013
Shareholders (dividends)	-	22,071	-	22,071
Retained earnings	79,514	486,069	79,514	486,069
Non-controlling interest in retained earnings	-	-	2,926	8,873
TOTAL ADDED VALUE	1,472,634	2,065,088	3,574,046	3,884,894

GRI content index

Statement of use: Tupy SA has reported the information cited in this GRI content index for the period [01/01 to 31/12/2024] with reference to the GRI Standards.
GRI 1 used: GRI 1: Foundation 2021

GRI standard	Disclosure	Location
GRI 2: General Disclosures 2021	2-1 Organizational details	10, 11, 20, 111
	2-2 Entities included in the organization’s sustainability reporting	4
	2-3 Reporting period, frequency and contact point	4 Publication date: April 30, 2025
	2-4 Restatements of information	4 There was none.
	2-5 External assurance	4
	2-6 Activities, value chain and other business relationships	10, 11, 15-18, 55, 61, 63
	2-7 Employees	39, 87
	2-8 Workers who are not employees	87
	2-9 Governance structure and composition	20, 21
	2-10 Nomination and selection of the highest governance body	22
	2-11 Chair of the highest governance body	21
	2-12 Role of the highest governance body in overseeing the management of impacts	21, 25
	2-13 Delegation of responsibility for managing impacts	21, 25
	2-14 Role of the highest governance body in sustainability reporting	4, 5
	2-15 Conflicts of interest	22
	2-16 Communication of critical concerns	21
	2-17 Collective knowledge of the highest governance body	21



GRI standard	Disclosure	Location
GRI 2: General Disclosures 2021	2-18 Evaluation of the performance of the highest governance body	22
	2-19 Remuneration policies	23
	2-20 Process to determine remuneration	23
	2-21 Annual total compensation ratio	The indicator is not reported due to the confidential and sensitive nature of the information, which could compromise the privacy of Tupy's employees. Details about the compensation of the statutory board members and the Board of Directors can be found in item 13 of the 2024 Reference Form. The compensation policy aims to attract, retain, and develop talent, based on internal and external equity, with transparency and aligned with the company's governance principles.
	2-22 Statement on sustainable development strategy	6, 7, 15, 24
	2-23 Policy commitments	24, 26, 27, 30
	2-24 Embedding policy commitments	13, 24, 26, 30
	2-25 Processes to remediate negative impacts	25, 29
	2-26 Mechanisms for seeking advice and raising concerns	29
	2-27 Compliance with laws and regulations	In 2024, no significant cases of non-compliance with laws and regulations were identified.
	2-28 Membership associations	88
	2-29 Approach to stakeholder engagement	31, 61, 63, 66, 88
GRI 3: Material Topics 2021	2-30 Collective bargaining agreements	97.5% (18,002) of employees are covered by collective agreements. In Brazil and Portugal, all employees are covered by the agreement with the workers' committee (100%), while in Mexico, the rate is 89%. For the remaining employees, similar terms and conditions apply, reviewed annually.
	3-1 Process to determine material topics	5
	3-2 List of material topics	5
	3-3 Management of material topics	Decarbonization (17, 55, 75, 77, 79); Air emissions (78); Resource and waste management and circular economy (75, 76, 81-83); Corporate governance (13, 24); Product innovation and quality (25, 48, 49, 55, 65); Ethics and compliance (26, 29, 30); People development (43, 45, 46); Diversity and inclusion (40, 41); Health, safety, and well-being (33, 35, 37); Sustainable supply chain (26, 28, 61); and Impact on local communities (43, 66, 68, 70, 73).



GRI standard	Disclosure	Location
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	72, 99
	201-2 Financial implications and other risks and opportunities due to climate change	TCFD Content, pages 109 and 110.
	201-3 Defined benefit plan obligations and other retirement plans	We offer a defined contribution private pension plan, with no liabilities for the company, available at all units except the Portugal plant. Management is handled by BrasilPrev (Joinville and São Paulo), Itaú Vida e Previdência (Betim), and IXE Banorte (Mexico, for monthly employees only). Employees with at least seven years at the company may withdraw the full amount upon termination. Contributions range from 1% to 10% of salary, and participation rates are: 3% in Betim, 19.97% in Joinville, 47% at MWM, and 49% in Mexico (monthly employees).
	201-4 Financial assistance received from government	R\$3,833,579.79 in benefits and tax credits, such as Reintegra, the Workers' Food Program (PAT), and the Lei do Bem (Good Law).
GRI 202: Market Presence 2016	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	89
	202-2 Proportion of senior management hired from the local community	The Company is committed to hiring local senior leadership: 86% of directors at key operational units are hired in the countries where we operate, totaling 25 board members. This indicator considers both statutory and non-statutory directors hired in the countries where we operate.
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	66-68
	203-2 Significant indirect economic impacts	66, 67, 73
GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	61
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	26, 30
	205-2 Communication and training about anti-corruption policies and procedures	28, 93, 94
	205-3 Confirmed incidents of corruption and actions taken	30
GRI 206: Anti-competitive Behavior 2016	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	No lawsuits related to unfair competition or violations of antitrust and anti-monopoly laws, either pending or concluded, were identified during the reporting period.
GRI 301: Materials 2016	301-1 Materials used by weight or volume	82, 94
	301-2 Recycled input materials used	82, 83
	301-3 Reclaimed products and their packaging materials	83, 94
GRI 302: Energy 2016	302-1 Energy consumption within the organization	77, 95
	302-3 Energy intensity	77
	302-4 Reduction of energy consumption	77



GRI standard	Disclosure	Location
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	76
	303-2 Management of water discharge-related impacts	76
	303-3 Water withdrawal	95
	303-4 Water discharge	95
	303-5 Water consumption	95
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	76
	304-2 Significant impacts of activities, products and services on biodiversity	76
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	79
	305-2 Energy indirect (Scope 2) GHG emissions	79
	305-3 Other indirect (Scope 3) GHG emissions	79
	305-4 GHG emissions intensity	79
	305-5 Reduction of GHG emissions	79
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	78
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	81
	306-2 Management of significant waste-related impacts	81
	306-3 Waste generated	96
	306-4 Waste diverted from disposal	97
	306-5 Waste directed to disposal	97
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	61, 62
	308-2 Negative environmental impacts in the supply chain and actions taken	62

GRI standard	Disclosure	Location
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	39, 90
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	46
	401-3 Parental leave	91
GRI 402: Labor/ Management Relations 2016	402-1 Minimum notice periods regarding operational changes	We apply a 30-day notice period to communicate changes such as shift reductions or vacation notices. Technical changes to machinery or quality processes do not follow this rule, as timing depends on the complexity and is defined within each project. We comply with the applicable legislation of each country, collective bargaining agreements (ACT, CCT), regulatory standards, and internal procedures. In the event of a plant closure, there is no specific regulation in place.
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	33
	403-2 Hazard identification, risk assessment, and incident investigation	35
	403-3 Occupational health services	37
	403-4 Worker participation, consultation, and communication on occupational health and safety	35
	403-5 Worker training on occupational health and safety	36
	403-6 Promotion of worker health	37, 38
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	35
	403-8 Workers covered by an occupational health and safety management system	33
	403-9 Work-related injuries	33, 34
	403-10 Work-related ill health	91
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	44, 45
	404-2 Programs for upgrading employee skills and transition assistance programs	43
	404-3 Percentage of employees receiving regular performance and career development reviews	45, 91
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	21, 42, 92
	405-2 Ratio of basic salary and remuneration of women to men	92



GRI standard	Disclosure	Location
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	41
GRI 407: Freedom of Association and Collective Bargaining 2016	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	All Company employees have the freedom of union association. Even those who are not unionized receive the same rights agreed upon at their respective plants. Freedom of association and collective bargaining are guaranteed by law for 99% of Tupy's suppliers. Tupy's Human Rights Policy also ensures freedom of association and collective bargaining as a commitment. To support supplier sustainability, we promote training sessions and encourage the adoption of related practices and policies. In 2024, 247 suppliers participated in a workshop on the Human Rights Policy, and 5.2% developed such a policy within the same year.
GRI 408: Child Labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	26, 28
GRI 409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	26, 28
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	66, 70, 78
	413-2 Operations with significant actual and potential negative impacts on local communities	70
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	61, 62
	414-2 Negative social impacts in the supply chain and actions taken	100% of new suppliers underwent social and environmental assessments in 2024, and no negative social impacts were identified in the Tupy Group's supply chain during this period.
GRI 415: Public Policy 2016	415-1 Political contributions	There have been no political contributions made by the Company in recent years.
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	65
	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	65

SASB content index

Industry: metals & mining

Topic	Code	Sustainability disclosure topics & metrics	Page or answer
Greenhouse Gas Emissions	EM-MM-110a.1	Gross global Scope 1 emissions, percentage covered under emissions limiting regulations (t, %)	Information not available.
	EM-MM-110a.2	Discussion of long- and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	75, 80
Air Quality	EM-MM-120a.1	Air emissions of the following pollutants: (1) CO, (2) NOx (excluding N2O), (3) SOx, (4) particulate matter (PM10), (5) mercury (Hg), (6) lead (Pb), and (7) volatile organic compounds (VOCs)	78
Energy Management	EM-MM-130a.1	(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable (GJ, %)	95
Water Management	EM-MM-140a.1	(1) Total water withdrawn, (2) total water consumed; percentage of each in regions with High or Extremely High Baseline Water Stress (m³, %)	95
	EM-MM-140a.2	Number of incidents of non-compliance associated with water quality permits, standards and regulations	Data with strategic confidentiality restrictions.
Waste & Hazardous Materials Management	EM-MM-150a.4	Total weight of non-mineral waste generated (t)	Does not apply to the Group's operations.
	EM-MM-150a.5	Total weight of tailings produced (t)	Does not apply to the Group's operations.
	EM-MM-150a.6	Total weight of waste rock generated (t)	Does not apply to the Group's operations.
	EM-MM-150a.7	Total weight of hazardous waste generated (t)	96
	EM-MM-150a.8	Total weight of hazardous waste recycled (t)	97
	EM-MM-150a.9	Number of significant incidents associated with hazardous materials and waste management	Data with strategic confidentiality restrictions.
	EM-MM-150a.10	Description of waste and hazardous materials management policies and procedures for active and inactive operations	75, 81-85



Topic	Code	Sustainability disclosure topics & metrics	Page or answer
Biodiversity Impacts	EM-MM-160a.1	Description of environmental management policies and practices for active sites	Does not apply to the Group's operations.
	EM-MM-160a.2	Percentage of mine sites where acid rock drainage is: (1) predicted to occur, (2) actively mitigated, and (3) under treatment or remediation (%)	Does not apply to the Group's operations.
	EM-MM-160a.3	Percentage of (1) proven and (2) probable reserves in or near sites with protected conservation status or endangered species habitat (%)	Does not apply to the Group's operations.
Security, Human Rights & Rights of Indigenous Peoples	EM-MM-210a.1	Percentage of (1) proven and (2) probable reserves in or near areas of conflict (%)	Does not apply to the Group's operations.
	EM-MM-210a.2	Percentage of (1) proven and (2) probable reserves in or near Indigenous land (%)	Does not apply to the Group's operations.
	EM-MM-210a.3	Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights, and operation in areas of conflict	Does not apply to the Group's operations.
Community Relations	EM-MM-210b.1	Discussion of process to manage risks and opportunities associated with community rights and interests	66, 70
	EM-MM-210b.2	(1) Number and (2) duration of non technical delays	In 2024, there were no non-technical delays.
Labour Practices	EM-MM-310a.1	Percentage of active workforce employed under collective agreements (%)	97.5% (18,002) of employees are covered by collective agreements. In Brazil and Portugal, all are covered by the agreement with the works council (100%), while in Mexico the rate is 89%. For the rest, similar terms and conditions apply, revised annually.
	EM-MM-310a.2	Number and duration of strikes and lockouts ¹	In 2024, there were three work stoppages at our operations in Mexico, totaling ten days. The Company addressed the demands raised, reinforcing our commitment to dialogue and the well-being of our workers.
Workforce Health & Safety	EM-MM-320a.1	(1) All-incidence rate, (2) fatality rate, (3) near miss frequency rate (NMFR) and (4) average hours of health, safety, and emergency response training for (a) direct employees and (b) contract employees	34, 36
Business Ethics & Transparency	EM-MM-510a.1	Description of the management system for prevention of corruption and bribery throughout the value chain	28, 30
	EM-MM-510a.2	Production in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index (t)	The company has plants in Mexico, which is considered within this classification; however, production data is confidential.
Tailings Storage Facilities Management	EM-MM-540a.1	Tailings storage facility inventory table: (1) facility name, (2) location, (3) ownership status, (4) operational status, (5) construction method, (6) maximum permitted storage capacity, (7) current amount of tailings stored, (8) consequence classification, (9) date of most recent independent technical review, (10) material findings, (11) mitigation measures, (12) site-specific EPRP	Does not apply to the Group's operations.
	EM-MM-540a.3	Approach to development of Emergency Preparedness and Response Plans (EPRPs) for tailings storage facilities	Does not apply to the Group's operations.
Activity metrics	EM-MM-000.A	Production of (1) metal ores and (2) finished metal products (t)	Information not available.
	EM-MM-000.B	Total number of employees, percentage contractors (Number/%)	39, 61, 87

Industry: industrial machinery & goods

Topic	Code	Sustainability disclosure topics & metrics	Page or answer
Energy Management	RT-IG-130a.1	(1) Total energy consumed, (2) percentage grid electricity and (3) percentage renewable (GJ, %)	95
Workforce Health & Safety	RT-IG-320a.1	(1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR) for (a) direct employees and (b) contract employees	34, 36
Fuel Economy & Emissions in Use-phase	RT-IG-410a.1	Sales-weighted fleet fuel efficiency for medium- and heavy-duty vehicles (Litres per 100 tonne-kilometres)	Currently, we do not calculate fuel efficiency data weighted by sales. The complexity regarding how the company's engines are sold and how they are used by customers creates a high degree of uncertainty in obtaining a single number for each category.
	RT-IG-410a.2	Sales-weighted fuel efficiency for non road equipment (Litres per hour)	
	RT-IG-410a.3	Sales-weighted fuel efficiency for stationary generators (Kilojoules per litre)	Currently, we do not calculate emissions weighted by sales.
	RT-IG-410a.4	Sales-weighted emissions of (1) nitrogen oxides (NOx) and (2) particulate matter (PM) for: (a) marine diesel engines, (b) locomotive diesel engines, (c) on-road medium- and heavy-duty engines and (d) other non-road diesel engines 1 (Grammes per kilojoule)	
Materials Sourcing	RT-IG-440a.1	Description of the management of risks associated with the use of critical materials	The components and materials used by MWM are not included in the list of critical materials identified by the National Research Council.
Remanufacturing Design & Services	RT-IG-440b.1	Revenue from remanufactured products and remanufacturing services (R\$)	Information not available.
Activity metrics	RT-IG-000.A	Number of units produced by product category	Information not available.
	RT-IG-000.B	Number of employees	39, 87

TCFD disclosure

Task Force on Climate-Related Financial Disclosures

Topic	Recommended disclosures	Answer
Governance	a. Describe the board's oversight of climate-related risks and opportunities.	The Board, with the support of the Audit and Risk Committee, assesses the risk management process and structure – including strategic, financial, operational, environmental (including climate change), legal, and reputational risks – as well as the effectiveness of the existing controls for their monitoring. Additionally, with the support of the Strategy, Innovation, and Sustainability Committee, the Board evaluates, in an integrated manner with the Company's strategy, opportunities for practices related to sustainability and climate change. The work of the Committees is reported monthly to the Board of Directors, and periodically, the risks and opportunities related to climate change are presented by the Executive Board and discussed directly with the Board of Directors.
	b. Describe management's role in assessing and managing climate related risks and opportunities.	The Board of Directors is responsible for, among other things, approving guidelines for risk management and controls; monitoring prioritized risks, including those related to climate change; periodically evaluating the Risk Map and its respective controls and mitigation action plans; and ensuring that the necessary resources are available for the risk management process and the internal control system. Furthermore, the Board approves the Company's multi-year planning, which defines short- and long-term strategic guidelines, among other aspects. In this context, the Board considers opportunities focused on ESG aspects, including climate change.
Strategy	a. Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term. [GRI 201-2]	Tupy conducts an annual climate risk assessment process with the aim of identifying and analyzing factors that may impact the Company. To identify these risks, we use frameworks such as TCFD (Task Force on Climate-related Financial Disclosures) and CDP (Carbon Disclosure Project). Once the risks are identified, we evaluate the probability of events occurring and their respective impacts, following qualitative criteria. Each identified risk includes a detailed description of potential events that may impact the Company, as well as its classification into categories such as physical, regulatory, or others; a description of possible associated impacts; the assessment of financial impact as one of the risk criteria; and the calculation of the costs of possible risk management measures for the three most significant risks.
		From this analysis, we identified the three most significant climate risks for Tupy:
		<div><div>Risk 1 – Energy Dependency</div><p>Tupy is characterized as a manufacturing industry with high energy consumption for producing its products. The Brazilian energy matrix is predominantly composed of hydropower, which represents 64% of the domestic energy supply. Despite investments by the government and private sector to diversify energy sources, the dependence on hydropower remains high. In periods of prolonged drought or delays in implementing new investments, there is a risk of energy rationing or an increased reliance on non-renewable sources, such as coal and natural gas. This could result in revenue loss, higher Greenhouse Gas (GHG) emissions, and negative impacts on operational results, increasing product costs and intensifying the Company's carbon footprint.</p></div> <div><div>Risk 2 – Carbon Emissions Regulation</div><p>Environmental regulations are becoming increasingly stringent worldwide, with significant advancements in carbon emission trading systems. In Brazil, a law was enacted to implement the Brazilian Emission Trading System (SBCE), which sets gradual limits for GHG emissions and establishes a carbon pricing model. Tupy, being an energy-intensive industry, has significant CO2 emissions, primarily due to the use of non-renewable energy sources. The adoption of emissions limits may increase the Company's operational costs, requiring the implementation of projects to reduce emissions and transition to a low-carbon production process.</p></div> <div><div>Risk 3 – Carbon Border Adjustment Mechanism (CBAM)</div><p>In 2023, the European Union established the Carbon Border Adjustment Mechanism (CBAM) to prevent carbon leakage. This mechanism aims to prevent the importation of products manufactured in regions with low GHG emissions regulations. CBAM will be implemented in two phases: the transitional phase (2023–2025), during which European importers will need to report emissions embedded in imported products without any tax burden; and the regular phase (starting in 2026), when periodic reporting and emission fees will be mandatory for European importers. This new regulation may affect Tupy's exports from a limited range of products to the European Union, increasing costs and the need to comply with new environmental requirements.</p></div>



Topic	Recommended disclosures	Answer
Strategy	b. Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	Impacts related to the mapped risks: increase in direct and indirect costs. Impacts related to the identified opportunities: (i) generation of carbon credits from the conservation of our forest assets, and (ii) gains from generating additional volume, blocking competitors, and intangible benefits in communication and image.
	c. Describe the resilience of the organization's Supplemental Guidance for the Financial Sector strategy, taking into consideration different climate related scenarios, including a 2°C or lower scenario. [GRI 201-2]	Currently, we do not use climate-related scenario analysis, but we have a transition plan that will be developed in the coming years. In light of the identified risks, Tupy is committed to constantly monitoring the climate impacts on its operations and developing strategies to mitigate their effects. The company aims to adopt innovative and sustainable solutions to ensure the resilience of its business model and reduce its carbon footprint in the long term.
Risk management	a. Describe the organization's processes for identifying and assessing climate related risks.	To assess the likelihood of climate-related risks, we use the following criteria: (i) occurrence of physical or transition-related phenomena in previous years; (ii) signs that the evaluated events may occur; (iii) influence and variation in temperature. To evaluate the potential impact of the identified risks, we use the following criteria: (i) potential financial impacts in case the risk materializes; (ii) consequences for our production system if the event occurs; (iii) potential impacts on our reputation or the sectors we operate in; and (iv) consequences for our strategies in case the risk materializes.
	b. Describe the organization's processes for managing climate related risks.	Our risk management process is based on corporate governance best practices and follows the guidelines of the Committee of Sponsoring Organization of the Treadway Commission (COSO); ERM: 2017 – Enterprise Risk Management: Integrated with Strategy and Performance; ISO 31000:2018 – Risk Management Guidelines; and the standards and methodology of Control Objectives for Information and Related Technology (COBIT). We also consider the three lines of defense concept established by The Institute of Internal Auditors. The first line corresponds to business areas, which are directly responsible for processes and managing risks in line with policies and mitigation strategies approved by the Board. The second line includes Risk Management and Compliance areas, which oversee the implementation, check compliance, and support business areas in managing risks. The third line involves Internal Audit, which performs independent evaluations and provides control recommendations.
	c. Describe how processes for identifying, assessing, and managing climate related risks are integrated into the organization's overall risk management.	We assess risks by considering their inherent and residual effects, as well as their probability and impact, in order to prioritize management processes. We take into account potential financial, social, environmental, and regulatory impacts into account. Integrated risk management incorporates climate aspects. Our climate risk and opportunity assessment process is conducted in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and the Carbon Disclosure Project (CDP).
Metrics and targets	a. Disclose the metrics used by the organization to assess climate related risks and opportunities in line with its strategy and risk management process.	Absolute GHG Emissions (tCO ₂ e). GHG Emissions Intensity: Scopes 1 and 2 (tCO ₂ /t produced). Energy Consumption (GJ). Energy Intensity: energy consumption in GJ/t produced.
	b. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 Greenhouse Gas (GHG) emissions, and the related risks.	Scope 1: 493,331 tCO ₂ e. Scope 2: 168,070 tCO ₂ e. Scope 3: 618,350 tCO ₂ e.
	c. Describe the targets used by the organization to manage climate related risks and opportunities and performance against targets.	We have not yet set any targets.



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Annexes



Credits

Coordination

Investor Relations Department

Materiality, indicator consultancy, writing and editing

TheMediaGroup

Graphic design, layout and infographics

TheMediaGroup and Multi Design

Spelling check and translation

TheMediaGroup

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