Totten mine resumed operations in February 2022

REPORT FROM ADMINISTRATION 2021

Letter from the Chairman of the Board of Directors

Dear Shareholders,

Vale is continuing to expand its competitive differentiation through a portfolio of high-quality products, advance its climate strategy and improve its dam and operational risk management, while moving forward with its commitments to stabilize production and the reparation in Minas Gerais.

In 2021, Vale enhanced its dialogue and engagement with shareholders, communities and society, in order to act in greater alignment with their expectations. With this focus, Vale's Board of Directors has expanded its oversight in areas that are essential to the Company's sustainability, with special attention to best corporate governance practices, the safety of people, communities and assets, the reparation processes and long-term strategic planning.

Improvements in the Board of Directors performance

Seeking out governance maturity is a process, and in 2021 a Board of Directors with a broader formation was elected, given the larger share of independent members (eight out of thirteen), as well as the diversity of training and experiences of its members. This formation led to richer and more plural discussions, guided by a necessary critical view of Vale, thereby maintaining a stable trajectory in the implementation of essential corporate changes for a more reliable and safer Vale.

Due to the significant renewal of the board, a careful onboarding and teamworking process was carried out in 7 meetings; another 6 meetings were dedicated to the annual Strategic Planning cycle. The Board's activities, carried out in close proximity to executives, shareholders and society, took place in 23 meetings throughout the year. The Advisory Committees held one hundred and fourteen meetings aimed at analyzing matters within their mandate in greater depth and making recommendations to the Board. It is also important to highlight the first year of operation of the Innovation Committee, which discussed issues related to digital transformation, research and development, mineral research, new technologies and new products, with a focus on ensuring Vale’s competitiveness and sustainability.

Oversight of critical issues

The Board's oversight focused on:

- Periodic monitoring of Vale's Integrated Global Risk Map;
- The evolution of tailings dam management, the management of structures in critical safety conditions and the progress of the Upstream Dams De-characterization Program;
- The signing of the Integral Reparation Agreement for Brumadinho, in order to maintain the accelerated pace of reparation;
- The reparation in Mariana, led by the Renova Foundation, with acceleration of programs, particularly in terms of compensation and resettlement, but which still needs to move forward to restore the right to housing of many families. We have also followed the engagement in discussions with authorities to enable a new level of governance for the Foundation, with more efficient and definitive deliveries in the integral repair process;
- Progress in Vale's cultural transformation to make it a safer, more innovative, diverse, equitable and inclusive Company – an organization that places value in collective learning and transforms the future of industry, society and the planet;
- Actions for the safe resumption of production and competitiveness in the iron ore business;

- Expansion of Vale's high-quality product portfolio, with the launch of the green briquette and initiatives aimed at developing solutions in iron ore in partnership with clients;
- Reorganization of the Base Metals business, which faced significant operational impacts with the work stoppage of employees in Sudbury and with critical maintenance activities in Sossego and Salobo;
- Changes in the Executive Committee, with the creation of Executive Vice-Presidencies for Sustainability and Strategy and Business Transformation, and appointment of new executives, with emphasis on the Base Metals unit, which is now led by a woman, bringing gender and ethnic-racial diversity;
- Divestment of non-core assets, such as the coal operation in Mozambique and the stakes in Mosaic and California Steel Industries.

The Board has started a broad review of the company's Policies, beggining with a policy dedicated to the Guidelines for the Preparation of Corporate Policies (in matters assigned to the Board) and delegating certain matters to Administrative Policies (assigned to the Executive Committee). Among the policies already updated, I would like to highlight the Management of Companies and Entities of the Group, as well as the Consequence Management.

Capital Allocation

In 2021, the Board approved two share buyback programs. In its first program, Vale disbursed US$ 5.3 billion, while the second program, which is still in progress, was approved in the amount of up to 4.1% of the total number of outstanding shares. This reflects Vale's commitment to the fundamentals and initiatives that guide value creation by the company. In addition, the Board approved the distribution of approximately R$ 12.6/share in dividends, referring to the 2021 balance sheet, as a result of the disciplined capital allocation and the commitment to shareholder returns.

ESG Commitments

In addition to the clear advances in Governance, Vale has a very ambitious climate strategy, towards leadership in the transition to a low carbon economy. The Board has been monitoring the execution of action plans aimed at fulfilling Vale's commitment to aligning with the Paris Agreement, which are based on annual goals and the development of innovative projects and technologies included in the Company's marginal abatement cost curve.

Through the Sustainability Committee, we were able to support the issuing of our first climate change report, which is consistent with the Task Force on Climate-Related Financial Disclosures (TCFD), an essential tool to understand how Vale is well positioned for a market that values high-quality, low CO2 emission products.

On the social front, we encourage the adoption of a proactive engagement approach with communities, creating opportunities for broad and constructive dialogue with a focus on long-term relationships and building a legacy for society. In 2021, Vale announced its social ambition, centered on UN Sustainable Development Goal 01 – Eradication of Poverty, whose action plan will be detailed in 2022.

Improvement opportunities in 2022

At the next Annual General Meeting of Shareholders, Vale's Board of Directors will be elected, which represents a new opportunity for implementing improvement. In order to structure the process of nominating candidates for directors in this election, in January of this year the Board installed a Nomination Committee, which is mainly composed of independent directors.

The Board of Directors has major challenges ahead and should be deeply involved in the business strategy and long-term vision, seeking to reduce risks, stabilize operations and advance in commitments to a more sustainable mining. It will also be necessary to pay attention to the complex geopolitical scenario present in some regions that challenges global organizations such as Vale.

On behalf of Vale's Board of Directors, I thank you for your support and renew our commitment to building a better Vale. We will continue We will continue to act energetically and attentively in making Vale one of the safest and most reliable mining companies in the world.

José Luciano Penido

Chairman of the Board of Directors

A message from Vale's CEO

Dear Vale Shareholders,

Even in the midst of a year marked by the continued Covid-19 pandemic and by volatility in the markets, we had great achievements in delivering sustainable value creation to our stakeholders. I would like to thank my colleagues on the Executive Committee, our Board of Directors, our employees, the communities where we operate, suppliers, and clients for their support and partnership over the past year.

In 2021, we will continue to prioritize the health and wellbeing of our employees and communities. We have joined the United Vaccine Movement (“*Unidos pela Vacina*”) in order to expand the operational structure of vaccination in Brazil and have continued with actions for humanitarian support, such as the donation of 1 million food baskets for families in a situation of severe food insecurity in the country. Since 2020, Vale has donated around R$ 830 million to the fight against Covid-19 in the countries and regions where it operates.

With regards to reparation in Brumadinho, we have made significant progress with the signing of the Integral Agreement in February of 2021, bringing legitimacy and legal certainty to the reparation initiatives, which continued to be a priority for the Company. Over the course of three years, R$ 23 billion has been spent on reparation, including agreements providing individual compensation for 12,800 people. Among the measures implemented throughout 2021, we wish to highlight the payment of R$ 4.4 billion as part of the implementation of the Income Transfer Program. We also concluded the commissioning of a system of 11-kilometer water pipeline and reservoirs and with a capacity of 5 thousand liters of water per second to supply the current demand of Belo Horizonte's metropolitan region.

In Mariana, we recognize that reparation has been a complex task, because of the extension of the territories impacted by the Fundão dam rupture as well as the multiple social, cultural, and economic characteristics of the region. We continue to support the Renova Foundation, through its governance bodies and to provide specialized professionals to carry out reparation programs. We made significant progress in restoring the right to housing for 107 families and, after adopting a simplified process, we doubled the amount of compensation provided, reaching a total of 51,800 people. We remain open to improvements offering efficiency in the execution and compensation to those affected and society.

Safety and Operational Excellence, a strategic pillar of our Company, are one of the main levers for our transformation. We believe that the advance of our management system (VPS) is a reflection of the cultural change being put into practice, providing safe and consistent results. Operations that have evolved in terms of VPS maturity showed greater adherence to maintenance plans and greater operational stability. As a result, we noticed a significant improvement in Safety performance throughout Vale's business units, reaching the lowest recordable accident rate (TRIFR) in our history. We know that we can move forward by improving our safety procedures. I highlight the lessons learned from the Totten mine incident, in Canada, which demonstrated the importance of our processes and mitigating controls. Because of them, our employees were able to return to their families safe and sound.

In order to further reduce our risk level, we are decharacterizing our upstream dams in Brazil. We have eliminated 7 structures, with 23 structures remaining under the plan, which will be completed by 2035. It is a complex and lengthy process, and we are updating our expenditure estimates as we make progress in our engineering studies. We have achieved improvements in the safety conditions of relevant structures, such as the Doutor, Sul Inferior and Norte Laranjeiras dams, which have had their emergency level reduced. As part of our commitment to implement the Global Industry Standard on Tailings Management (GISTM), we have been able to adhere to 60% of the standard requirements according to the self-assessment process carried out in 2021. We expect to reach 90% adherence in 2022, 100% for structures at extreme or very critical levels in 2023, and 100% for other structures in 2025. Finally, our structures went through a very important test in January 2022 in January 2022 when it rained in a few days what was expected for the whole year. In this very challenging scenario, our dams and operations showed great resilience.

In 2021, we started the operation of the Vargem Grande filtration plant, the first of four plants under construction in Minas Gerais, reducing the reliance on dams. Vale has also developed a certified sand for application in the civil construction market in order to reduce the volume of tailings disposed of in dams.

We have made significant progress with regards to operational stability. In Ferrous business, we have resumed the capacity of assets such as Serra Leste, Timbopeba and Fábrica. With regards to our Base Metals operations, we had a challenging year due to critical maintenance activities carried out at the Sossego and Onça Puma operations, and a strike in Sudbury. On the other hand, we are also celebrating the first ore achieved at the Reid Brook deposit as part of the Voisey's Bay mine extension project, the first of two underground mines that will be developed.

Supported by our strategic pillar of a “New Pact with Society”, we recognize the fundamental role that companies play in addressing major and urgent challenges, such as issues surrounding climate change. We have announced investments of US$ 4 to US$ 6 billion to reduce Scope 1 and 2 emissions by 2030 and we are currently engaging with clients representing 40% of our Scope 3.

Adding to the environmental agenda, we have defined our social ambition: “to be a partner Company in the development of resilient communities, engaged in relevant issues to humanity and committed to sustainable mining”. We want to ensure that our work generates social value and promotes a positive post-mining legacy. Taking the education-health-income tripod into consideration, we will lift 500,000 people out of extreme poverty by 2030.

Finally, we are working to ensure that value is created and returned to our shareholders. We paid robust dividends in a record year for cash generation in addition to launching two consecutive share buyback programs. We made significant advances in relation to our strategy for simplifying our asset portfolio in 2021 with the responsible exit of our coal operation in Mozambique, the divestment of the manganese ferroalloys business in Minas Gerais, and the sale of 50% and 9.2% of Vale's ownership interests in CSI and Mosaic, respectively.

We are on the path to becoming one of the safest and most reliable companies in the industry and a benchmark in creating and sharing value for society.

We exist to improve lives and transform the future. Together.

Eduardo Bartolomeo

CEO

Highlights of the year

Operations

- In 2021, we continued with **the resumption of the iron ore fines operations**. Vale ended the year with around 340 Mt of iron ore production capacity, compared to 322 Mt in 2020, and expects to reach a capacity of 370 Mt by the end of 2022.
- **Vale's iron ore fines production totaled 315.6 Mt** in 2021, within the annual, and 5.1% above 2020, mainly due to the resumption of Serra Leste by the end of 2020, increased production of high-silica products in Brucutu and Fábrica, improved performance in the Itabira complex, and higher purchases from third parties.
- **Vale's pellets production totaled 31.7 Mt** in 2021, 6.8% higher than 2020, as a result of the resumption of Vargem Grande pelletizing plant at the beginning of the year.
- **In Base Metals operations**, nickel production totaled 168.0 kt in 2021, 8.5% lower than in 2020, due to labor disruptions in Sudbury and lower production from PTVI. The copper production reached 296.8 kt in 2021, 17.6% lower than in 2020, as a result of critical maintenance activities in Sossego and Salobo.
- **Coal production increased 44.6%** in 2021 to 8.5 Mt, as a result of the increased productivity at the revamped plant.

Financial results

- **Adjusted EBITDA from continuing operations totaled R$ 168.1 billion** in 2021, 82.2% higher than in 2020, due to higher realized prices for ferrous minerals and copper.
- **Net income was R$ 121.2 billion** in 2021, an increase of 354% compared to the R$ 26.7 billion recorded in 2020, due to increased EBITDA and lower financial expenses.
- The distributions of **earnings** for the year 2021 totaled R$ 12.6/share.

Commitments to reparation and society

- The signing of the **Integral Reparation Agreement for Brumadinho** in February 2021 brought legitimacy and legal certainty to the initiatives aimed at providing reparation, which continued to be a priority for Vale. The Company has already signed agreements with 12.8[1] thousand people at a total amount of R$ 3.0 billion[1]. By 2021, R$ 23.0 billion were disbursed in reparation.
- Regarding **the Reparation in Mariana**, progress has been made in restoring the right to housing for 107 families.
- Safety conditions at the Doutor, Sul Inferior, Norte Laranjeiras, Marés I and Forquilhas IV tailings' dams were achieved.
- Vale's Decharacterization Plan continues to progress and by the end of 2021, 7 of the 30 upstream structures were decharacterized.
- **Vale's has continued to provide humanitarian aid** during the Covid-19 pandemic, **donating 1 million food baskets/**pre-paid food voucher cards and adhering to **the *Movimento Unidos pela Vacina***. Since 2020, Vale has donated around R$ 830 million to the fight against Covid-19 in the countries and regions where it operates.

1 Numbers of people and total amount refers to agreements signed until February 18, 2022.

Sustainability at Vale

Vale made progress in relation to its new pact with society, which was signed in 2019, with the announcement of the following social ambition and goals for 2030:

- Lift 500,000 people out of extreme poverty;
- Collaborate with the indigenous communities neighboring Vale's operations in the preparation and execution of plans aimed at guaranteeing the rights set forth in the UN Declaration on the Rights of Indigenous Peoples; and
- Rank TOP 3 in the social requirements of the main external assessments.

Vale's main commitments and goals are periodically assessed to ensure that they are aligned with the Company's purpose and strategy. During the year, we made important advances to achieving the results expected, which are highlighted below:

Environmental

- Announcement of investments of **US$ 4.0 to US$ 6.0 billion to reduce Scope 1 and 2 emissions** by 2030.
- Start of operations for ships equipped with rotor sails and air lubrication technology, reducing carbon emissions in transport by up to 8%, as part of Vale's portfolio of initiatives in shipping aimed at reducing **net Scope 3 emissions by 15% by 2035.**
- **Investments in renewable energy projects** and the use of electric vehicles and conveyor belts in our operations.
- Expansion of Vale's portfolio of innovative products with **the announcement of the green briquette,** a low carbon product allowing CO2 emission from steel industry to be reduced by up to 10%, thereby making a fundamental contribution to reducing Scope 3 emissions.
  The construction of three briquettes plants was approved and scheduled to begin operating in 2023 with an annual capacity of approximately 7 Mt.
- Engagements with clients representing **40% of Scope 3 emissions**.
- Partnerships with several clients from different locations such as Ternium S.A. (Brazil), POSCO (South Korea), China Baowu (China), and Jiangsu Shagang (China) aimed at seeking out **solutions for decarbonization** in the steel industry.
- **20% reduction in new water uptake**, surpassing Vale's commitment to reduce water uptakel by 10% by 2030.
- **Progress in the voluntary forestry commitment to protect and restore 500 thousand hectares of areas beyond the company's borders by 2030**. In 2021, more than 67 thousand hectares were recovered and protected, for a total of 121 thousand hectares.
- Several **research and development** projects aimed to reduce the **generation of tailings** and reusing and/or processing generated waste, thereby promoting development of the circular economy.

Social

- **Relinquishing of mining rights on Indigenous lands** in Brazil, including applications for exploration permits and mining concessions. Since 2020, Vale has eliminated 104 mining processes previously interfering with Indigenous lands.
- **Implementation of initiatives supporting the Indigenous agenda,** such as the *Programa Indígena de Permanência e Oportunidades na Universidade* – PIPOU, which aims to provide support to approximately 200 indigenous people completing postsecondary studies by 2025.
- Vale remains committed to the UN Guiding Principles on Business and Human Rights and has reinforced the process **of integrating Human Rights** into the Company's policies and decision-making processes.
- Training in Human Rights became mandatory for all employees, completing **100% of the training provided at Vale**.
- The risks of human rights violations were systematically monitored through Vale's Integrated Global Risk Map and, in partnership with the Procurement department, the **Human Rights risk management process in Vale's supply chain** was intensified.
- Completion of **2 *due diligence*** processes for human rights and Reparation in Brumadinho and Manganese in Minas Gerais, in addition to **14 *due diligence processes*** for operations and projects and **18 *due diligence procedures*** for critical suppliers.
- **Assessment of the Social Performance Model** across 45 different projects in order to identify maturity levels and opportunities for improvement in social processes.
- Improvements in **safety process management in communities** and the definition of indicators and targets associated with the theme linked to the variable compensation provided by the Company.
- In 2021, we maintained relations with 2,092 communities in several different countries. In Brazil, **411 communities were considered a priority for engagement** and 69% have relations plans. The target is to implement relations plans in 100% of priority communities by 2026.
- **Grievance mechanisms remains open and accessible** to communities. In 2021, we registered 11,069 demands from communities, representing a decrease of 28,9% compared to 2020. Of this total, 98.9% were ansewerd and 82.7% were addresed.
- **R$ 1.8 billion[2] was dedicated to social initiatives in 2021[3]**, of which 49% are voluntary and mitigating investments (R$ 895 million), 11% are mandatory investments (R$ 208 million) and 39% are investments involving incentivized resources (R$ 713 million).
- The main vehicles for **private social investment** are: the Vale Foundation, Vale Fund, Vale Technology Institute, Vale Cultural Institute, and the Vale Volunteer's Network.
- **R$ 4.7 billion in expenditures** were made during 2021, of which **61.7% were environmental and 38.3% were social.**

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[2]Estimated value in Brazilian reals. For installments outside Brazil, we use the monthly exchange rate, which is an average of BRL/USD 5.40 for 2021.

[3]Amounts do not include expenses related to Brumadinho. This amount includes spending on humanitarian aid (Covid-19)

Reparation

- Regarding the reparation in Brumadinho, the signing of the **Integral Agreement** in February of 2021 brought legitimacy and legal certainty to initiatives aimed at reparation, which continued to be a priority for Vale. Vale has already signed agreements with 12.8[4] thousand people at a total amount of R$ 3.0 billion[5] and, by 2021, R$ 23.0 billion were spent on reparation[6]. In 2022, Vale expects to disburse approximately R$ 5.6 billion as part of Integral Reparation Agreement.
- Since 2015, approximately **R$ 19.6 billion have been invested by Vale, BHP and Samarco** in initiatives to provide reparation and compensate impacted parties in Mariana and the surrounding region, with individual compensation provided to more than 347 thousand people, from which 51.8 thousand since the adoption of the simplified system in 2020. Progress has also been made in resettlement and 107 families have had their right to housing restored or their house completed in 2021 (126 in total, of which 19 by 2020[7]). The Renova **Foundation's budget for 2022 is R$ 10.5 billion.**
- Renova Foundation updated its premises for estimating the cost of reparation and compensation programs, resulting in the addition of R$ 9.3 billion to the provisions recognized by the Company. For more information about the Renova Foundation, visit https://www.fundacaorenova.org/.

Dam safety and management

- Conclusion of the decharacterization of two upstream structures in 2021, totaling **7 of the 30 structures** of the Decharacterization Plan concluded. The decharacterization projects are complex and, in some cases, pioneering, especially for larger dams. These projects underwent technical reviews, due to methods and engineering solutions changes, with the goal to guarantee safety in execution of the works. As result of those revisions, provisions to 4Q21 were altered.
- Completion of the downstream containment structure (ECJ[8]) at the Forquilhas I, II, III and IV and group dams, located near the Fábrica mine and, with this milestone, **ECJs have been built at all 3 structures at emergency level 3**.
- Beginning of **tailings removal activities at the B3/B4 dams in** Nova Lima (MG) and Sul Superior in Barão de Cocais (MG), both at emergency level 3, using **unmanned** and **remotely operated** equipment.
- Improvements in safety conditions were achieved for the **Doutor, Sul Inferior and Norte Laranjeiras** dams, **resulting in a reduction from emergency level** to protocol 1. **Marés I** and **Forquilhas IV** dams had its **emergency level removed**.
- Establishment of the Independent Tailings Review Board (ITRB) for each operating system used in iron ore business activities in Brazil **in line with the requirements of the Global Industry Standard for Tailings Management (GISTM)** and other international industry benchmarks.

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[4] As February 18, 2022.
[5] Total amount refers to agreements signed until February 18, 2022.
[6] Including agreements for individual compensation.
[7] Including letters of credit/pecuniary.
[8] Downstream Containment Structure, ECJ, is a structure designed to retain tailings in the event of a rupture of the respective dam.

- As part of our commitment to implementing the GISTM, until December, Vale **were adhered to 60% of the standard requirements** according to the self-assessment process carried out in 2021. The Company expects to reach **90% adherence in 2022**[9], 100% compliance for tailings facilities with extreme or very high potential consequences by August 2023, and 100% compliance for tailings facilities not in a state of safe closure by August 2025 in adherence to deadlines established by ICMM.
- **Starting the operations of the tailings filtration plant in Vargem Grande Complex and of the commissioning of two plants in Itabira in 2021.** We expect to complete the Brucutu plant in 2022, in line with our commitment to reduce dependence on the use of dams.

Innovation

- **Advancement in electrification initiatives using existing technologies**, such as the *trolley system*[10], which will be implemented in Carajás starting in 2023, advancing in the studies of battery-powered trucks, as well as intensifying the analyses for the use of conveyor belts.
- Use of **40 battery electric vehicles** (BEVs) in operation as part of our Base Metals business activities.
- Since September 2020, Vale has been testing a new **100% electric, battery-powered rail yard locomotive at** the Tubarão facility– Vitória-ES. In 2022, a second 100% electric locomotive will start a pilot operation that will operate at the Ponta da Madeira Maritime Terminal, in São Luís (MA).
- In 2021, Vale announced the creation of a new company focused on Green Cement, a type **of low emission geopolymer cement** that makes use of residual mining sand.
- Vale established the **Safety Transformation Program** in order to provide global governance that allows the impact of health and safety measures to be maximized using, among other inputs, data and AI[11] to detect risks and prioritize actions.
- Use of **artificial intelligence to identify the risk of deforestation and fires** in the Amazon.
- Structuring of the **Ferrous Asset Monitoring Center (“*Centro de Monitoramento de Ativos Ferrosos*”, CMA)** designed in accordance with technological movements recommended under Industry 4.0 and a data-based platform using the application of Artificial Intelligence techniques and algorithms based on Machine Learning that are used to predict the behavior of important variables in the process.

Governance

- In 2021, the **first election** of Vale's Board of Directors took place **after the end of the shareholders' agreement**, which expired in November 2020.
- The election of the Board took place on **an individual basis** and the Chairman and Vice-Chairman **were elected** at the General Meeting.
- The **Board's composition was fixed at 13 members with no alternate members serving**, with the exception of a member elected by Vale’s employees.

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[9] Based on the external audit results. Structures held by joint-ventures are not included. Considering tailings facilities with “extreme” or “very high” potential consequences into consideration.

[10] Off-road ore truck with a pantograph connecting to an overhead electrical power grid.

[11] Artificial Intelligence.

- As a result of the election, Vale's Board of Directors currently constitutes **an independent majority** (8 out of 13 directors are independent), **including the Chairman of the Board**.
- Vale’s Bylaws now foresees a **Lead Independent Director**.
- At the executive level, the Executive Vice-President **for Sustainability and Executive Vice-President for Strategy and Business Transformation** were established, aiming greater alignment with the company's strategy and promoting an increased focus on the ESG agenda and innovation.
- Nomination of new executives, highlighting the **Base Metals business, which is now led by a woman**, bringing gender and ethno-racial diversity.

Transparency

- In 2021, we released the **first Vale Integrated Report** and the **first Climate Change Report** in line with the guidelines provided by the Task Force on Climate-Related Financial Disclosures (“TCFD”).
- Publication of a report dedicated to the theme of **Diversity & Inclusion** and implementation of Vale’s first diversity census.
- Vale's ESG Portal continues to **provide frequent updates** on the Company's sustainability agenda.

People Management

The People department continues to work to develop the Company's organizational cultural in line with its strategic values and behavior. In 2019, Vale began a deep process of **cultural transformation** which seeks to promote culture as a facilitator of the Company's strategy and ambitions **for the next five years:** becoming a large company recognized by society as an industry reference in safety, the best and most reliable operator, talent-oriented, a leader in sustainable mining, and a benchmark in creating and sharing value.

Cultural transformation

- A long-term **global communication strategy** was implemented in 2021.
- **Focus on leadership**, with sessions held with the Executive Committee in addition to culture and purpose activation sessions, **impacting more than 90% of the organization's leadership**.
- Transformation programs tailored to each **business unit.**
- Progress in the implementation **of the Vale Management System (VPS)** with consolidation of the implementation plan in **57 *sites* (main business areas).**
- Expansion of **influencers** with the creation of the Purpose Guardian group.
- Consolidation of the Echoes Pulse survey to **measure the evolution of key employee behaviors**.
- Definition of the five **attributes expected for leadership** – Safety and risk, a Growth mindset, People development, a Business Vision, and Sustainability.
- More than 600 leaders completed the **development program** (*Impact!*) focusing on key expected behaviors.

Diversity and Inclusion

- Target to double female representation from 13% to 26% **brought forward from 2030 to 2025.**
- Achievement of **18.7% of women representation**, compared to 13.5% in 2019, with **13,488 women working at Vale** in the end of 2021.
- **20.3% of senior leadership positions occupied by women, overpassing our** target for increasing the number of women in leadership from 12% to 20%, ambition that was revised to reached 26% by 2026 (executive manager positions and above).
- Announcement of **goal to reach 40% of leadership positions in Brazil occupied by Black employees** by 2026. 29% of leadership positions currently held by Black employees.
- **66%** of the trainees hired in 2021 are black.
- 5.3% Legal Quota for Persons with Disabilities at Vale S.A. **reached**.
- Implementation of the **first Diversity Census** with a 69% adherence rate.

Remuneration

- **Short-term remuneration** is in line with Vale's ambition to be a leader in sustainable mining, mainly after the inclusion of Risk Management, Productivity, Vale's Management Model - VPS (Vale *Production System*), and Cultural Transformation elements.
- In 2021, performance targets for the President and Executive Vice-Presidents were established in the following proportion: **80% collective targets** (vs. 70% in the 2020 panel), of which **55% are linked to non-financial indicators** and **20% to individual targets**, according to each department's scope of activities.
- The **Health, Safety, Geotechnics, Reparation, and Compliance** departments continue without financial and production results in their targets panel, which reflects Vale's focus on Risk Management.
- **Long-term compensation** includes PAV - Vale's Share Program and Matching Program and seeks to align Management's priorities with the Shareholders' vision, acting as a lever for the executives' shareholding positions and reinforcing the culture of long-term performance through the **use of sustainable development indicators.**
- As of 2021, **PAV began to remunerate Company's executives in the form of common stocks** (rather than cash payments linked to the share price) and will include the payment, at the end of each cycle, of "virtual dividends".
- Matching continues to act as a **retention program** and functions as a partial differentiation of bonuses in the form of shares issued by Vale. The executive must acquire shares of the Company using his own resources and, in doing so, he receives the right to the premium in shares after the end of the cycle.
- Vale also has a **minimum shareholding requirement** in which the statutory executives must accumulate and maintain, through long-term programs, ownership of shares issued by Vale.

Workforce

The work carried out by each of Vale's employees is essential for the company's success and growth. In December 2021, Vale's team included **approximately 72.3 thousand company employees and 141.1 thousand employees from third parties**.

Workforce by business unit

	Company employees		Third-party employees	
Number of employees	**2021**	**2020**	**2021**	**2020**
Ferrous Metals	44,235	44,342	46,327	34,042
Coal	5,492	3,320	7,416	6,076
Base Metals	12,903	13,762	15,207	10,395
Energy[1]	-	3,954	-	-
Corporate	9,636	8,938	72,197	61,408
Total	**72,266**	**74,316**	**141,147**	**111,921**

[1] Refers to the number of Biopalma employees that are no longer part of Vale's asset portfolio.

By geographical location

	Company employees		Third-party employees	
Number of employees	**2021**	**2020**	**2021**	**2020**
Brazil	55,067	58,249	114,757	90,877
South America (ex-Brazil)	153	190	113	140
North America	6,448	6,169	4,311	4,617
Europe	279	293	133	109
Asia	4,382	4,454	9,613	7,964
Oceania	10	1,263	6	198
Africa	5.927	3,698	12,214	8,016
Total	**72,266**	**74,316**	**141,147**	**111,921**

The 26% increase in third-party workers was related to the implementation of Reparation initiatives, an increase in the portfolio of projects such as Capanema, FICO, and the resumption of works after Covid-19 restrictions were lifted, including the filtration plants, in Salobo III and S11D+10 Mtpy.

The turnover rate is calculated based on data from Vale and its subsidiaries and reflects the termination rate for the year, i.e. a rate of 7.97% means that, for every 100 active employees in 2021, almost 8 employees had their employment contracts terminated.

	2021	2020
Turnover rate	7.97%	7.48%

Comments on operational and economic-financial performance

Portfolio optimization

Vale is currently seeking to simplify its flow of operations, allowing a continuous focus on its core assets, in order to reduce risks and honor its new pact with society. 2021 was marked by the responsible exit of *non-core* assets, including, in particular:

- Closing of the sale of Vale Nova Caledonia ("VNC") to the *Prony Resources New Caledonia* consortium.
- Signing of a binding agreement with *Vulcan Minerals* for the sale of coal assets in Mozambique in December of 2021. The completion of the transaction is subject to compliance with standard precedent conditions, including approval from the Mozambican government and its Ministry of Mineral Resources and Energy.
- Announcement of the sale of 50% of Vale's ownership interests in *California Steel Industries* ("CSI") to *Nucor Corporation,* with the transaction set to be completed in early 2022.
- Sale of 9.2% minority interest in Mosaic.
- Sale of manganese ferroalloy operations in Minas Gerais.

These transactions reinforce Vale's discipline in capital allocation strategic pillar and continued focus on our core businesses.

Production stabilization

2021 was marked by important developments in seeking out the operational resumption. In Ferrous Minerals, we resumed capacity at different assets such as Serra Leste, Timbopeba, and Fábrica. Vale ended the year with approximately 340 Mtpy of iron ore production capacity and expects to reach 370 Mtpy by the end of 2022, after the ramp-up of the tailings filtration plants in Itabira and Brucutu and their respective additions of tailings disposal capacity (Itabiruçu and Torto dams) in the second half of the year. In the Base Metals business, first ore production at Reid Brook deposit was achieved as part of the Voisey's Bay Mine Extension project, the first of two underground mines to be developed.

Iron ore

Improved results in Ferrous business activities were the result of a stronger price environment and the increase in production[12] (316 Mt) and sales (310 Mt) as a result of the resumption of operations in Minas Gerais, which was partially offset by S11D performance.

[12] Including third-party purchases, run-of-mine and feed for pelletizing plants.

Base Metals

In Base Metals operations, finished nickel production totaled 168.0 kt in 2021, 15.7 kt lower than 2020, as a result of the impact labor disruptions at Sudbury, which stopped operations for 70 days, and postponement maintenance at the PTVI furnace until 2022, which was partially offset by an improved performance in Onça Puma. The copper production totaled 296.8 kt in 2021, 63.3 kt lower than 2020, mainly due to the impacts of maintenance activities at Sossego and Salobo and the labor disruption at Sudbury.

Coal

Coal production reached 8.5 Mt in 2021, an increase of 44.6% compared to the previous year, as a result of increased productivity at the revamped plant.

For more information, please consult our 2021 Production and Sales Report.

Economic and financial performance

Consolidated performance

Net operating revenue totaled R$ 293.5 billion in 2021, an increase of R$ 87.4 billion compared to 2020, reflecting better market conditions and higher realized prices for iron ore.

Costs and expenses, including Brumadinho, reached R$ 142.9 billion in 2021, R$ 11.5 billion higher than in 2020, mainly due to higher ferrous minerals costs, impacted by the purchase of iron ore linked to Platts 62% benchmark index and bunker prices impacting freight, which increased by 46.5% and 31.2% respectively, in addition to the effect of higher volumes, which were partially offset by the reduction in provisions related to Brumadinho.

Adjusted EBITDA from continuing operations totaled R$ 168.1 billion in 2021, representing an increase of R$ 75.8 billion compared to R$ 92.2 billion recorded in 2020, mainly due to the price realization of ferrous minerals and copper and higher volumes of ferrous minerals, which were partially offset by higher freight costs.

Vale generated around US$ 20.0 billion in **Free Cash Flow from Operations** in 2021, an increase of US$ 10.8 billion compared to 2020, driven by an even stronger pro-forma EBITDA. This solid cash flow generation from operations allowed the payment of the project finance the for the Nacala logistics corridor (US$ 2.5 billion) and paid US$ 13.5 billion in dividends and interest on capital and US$ 5.5 billion in share buybacks.

Vale still ended the year with US$ 11.9 billion in cash and cash equivalents and short-term investments, our Gross Debt of US$ 12.2 billion, and leasing of US$ 1.6 billion, therefore, with a net debt of US$ 1.9 billion in 4Q21. The Company's expanded net debt was US$ 15.1 billion.

Ferrous minerals

Adjusted EBITDA for the Ferrous Minerals segment was R$ 169.8 billion in 2021, R$ 59.7 billion higher than in 2020, driven by higher iron ore fines and pellet price at R$ 63.9 billion, following the 46.5% increase in the 62% Fe benchmark and higher iron ore and pellet sales volumes during the period totaling R$ 12.8 billion.

Ferrous Minerals costs and expenses totaled R$ 79.8 billion, being R$ 21.8 billion higher than in 2020, mainly due to higher maritime freight costs, higher costs related to the acquisition of ore from third parties, *royalties*, and an increase in the prices of inputs and contracts.

The average realized price of iron ore fines, covering CFR/FOB sales, was US$ 140.5/t in 2021, 30.8% above the US$ 107.4/t value reached in 2020. The average price of pellets increased from US$ 135.9/t in 2020 to US$ 218.3/t in 2021.

Base Metals

The adjusted Base Metals EBITDA reached R$ 17.4 billion in 2021, R$ 1.1 billion higher than the R$ 16.3 billion recorded in 2020, mainly due to higher realized prices of R$ 3.6 billion, despite higher costs from the stoppage of operations due to the strike in the North Atlantic (R$ 1.4 billion) and the devaluation of the Brazilian Real against the Dollar (R$ 1.3 billion).

Coal - Discontinued operation

The adjusted EBITDA was negative by approximately R$ 1.0 billion in 2021, R$ 3.9 billion higher than in 2020, due to higher sales prices of R$ 2.5 billion and higher sales volumes at R$ 777 million, due to improved productivity of the revamped plant.

Comments on the economic and business environment

Iron ore

The outlook for iron ore remains positive given the short-term recovery of the global economy driven the by the advance of vaccination campaigns worldwide world and the emergence of variants that are relatively less severe compared to previous waves of the virus and the reopening of economies. We believe global steel production will grow slightly in 2022 as the global economy is strengthened by a reduction in supply chain bottlenecks, meeting the pent-up demand of recent years and increasing consumer and business confidence. Global inflation and lower growth in China are issues providing a counterbalance and that put the momentum of economic recovery at risk. In the long term, the transition to a greener economy will require the consumption of high-quality iron ore products in order to ensure that emissions are reduced.

Nickel

The average nickel price on the LME was US$ 18,488/t in 2021, 34% higher than the 2020 average.

Our nickel outlook remains positive, driven by strong growth in demand in the electric vehicle battery sector, in which nickel-rich batteries are prevalent. Furthermore, markets previously heavily affected by the pandemic, such as aerospace, are expected to improve with the continued success of measures taken against COVID-19, while energy shortages in Europe and China increase pressure for a rapid change in the energy mix. Over the long-term, the global movement towards net-zero emissions is expected to have a positive impact on nickel demand in the stainless steel, aerospace, automotive, and energy markets.

Copper

The average LME copper price was US$ 9,317/t in 2021, 51% higher than the 2020 average.

Our outlook for copper remains positive. Copper has a solid long-term growth profile, driven by industrialization, construction, and electrical grid infrastructure. Governments around the world have set ambitious decarbonization targets that, along with the dropping of renewable energy costs and green economy stimulus investments, will be crucial for more intensive use of copper in renewable energy and electric vehicle-related infrastructure projects. On the supply side, growth continues to be struggle due to the declining ore grades and a lack of major discoveries. Over the short-term, the quality assets currently under development are expected to satisfy growing demand. In the medium and long-term, significantly more quality assets are needed to replace existing operations that are in a downsizing or shutdown phase. Additionally, there is a risk that new projects, mainly *greenfield* projects, will be impacted by regulatory and environmental pressures, potential tax or *royalty* increases, logistical constraints, and lower ore grades, which should result in higher prices over the long-term.

Select financial information

Income statement

R$ million	2021	2020
Continuing operations		
Net operating revenue	293,524	206,098
Cost of goods sold and services rendered	(117,267)	(90,948)
Gross profit	**176,257**	**115,150**
Gross margin (%)	60.05%	55.87%
Selling and administrative expenses	(2,601)	(2,529)
Research and evaluation expenses	(2,964)	(2,151)
Pre-operating and operational stoppage	(3,467)	(4,517)
Other operational expenses, net	(2,212)	(4,202)
Impairment and disposal of non-current assets	(2,352)	(6,968)
Brumadinho event	(14,379)	(27,016)
Operating income	**148,282**	**67,767**
Financial income	1,822	1,570
Financial expenses	(8,942)	(16,666)
Other financial items, net	24,932	(9,056)
Equity results and other results in associates and joint ventures	(6,947)	(5,210)
Income before income taxes	**159,147**	**38,405**
Current tax	(30,079)	(17,828)
Deferred tax	4,759	13,201
Income taxes	(25,320)	(4,627)
Net income from continuing operations	**133,827**	**33,778**
Net income (loss) atributable to Vale's to noncontrolling interests	591	(11)
Net income from continuing operations attributable to Vale's stockholders	**133,236**	**33,789**
Discontinued operations		
Loss from discontinued operations	**(12,484)**	**(8,875)**
Loss from discontinued operations attributable to noncontrolling interests	(476)	(1,799)
Loss from discontinued operations attributable to Vale's stockholders	**(12,008)**	**(7,076)**
Net income	**121,343**	**24,903**
Net income attributable to Vale's to noncontrolling interests	115	(1,810)
Net income (Loss) attributable to Vale's stockholders	**121,228**	**26,713**

Balance sheet – consolidated

R$ million	2021	2020
Assets		
Current assets	119,332	126,805
Non-current assets held for sale	5,468	-
Non-current assets	80,275	78,623
Investments	9,771	10,557
Intangibles	50,287	48,309
Property, plant and equipment	233,995	213,836
Total	**499,128**	**478,130**
Liabilities		
Current liabilities	82,836	75,838
Liabilities associated with non-current assets held for sale	1,978	-
Non-current liabilities	217,256	221,306
Stockholders' equity	**197,058**	**180,986**
Equity attributable to Vale's stockholders	192,403	185,785
Equity attributable to non-controlling interests	4,655	(4,799)
Total	**499,128**	**478,130**

Cash flow

R$ millonmillion	2021	2020
Cash flow from operations	**178,815**	**99,171**
Interest on loans and borrowings paid	(3,820)	(3,911)
Cash received (paid) on settlement of Derivatives, net	(1,118)	(280)
Interest on participative stockholders' debentures paid	(2,317)	(1,000)
Payments related to Brumadinho event	(7,633)	(2,651)
Payments related to de-characterization of dams	(1,822)	(1,521)
Income taxes (including settlement program)	(23,607)	(9,138)
Net cash provided by operating activities from continuing operations	138,498	80,670
Net cash used in operating activities from discontinued operations	(1,732)	(5,462)
Net cash provided by operating activities	**136,766**	**75,208**
Cash flow from investing activities:		
Capital expenditures	(27,301)	(21,720)
Additions to investments	(237)	(657)
Disbursement related to VNC sale	(3,134)	-
Proceeds from disposal of Mosaic shares	6,919	-
Dividends received from associates and joint ventures	1,043	904
Judicial deposits and restricted cash related to Brumadinho event	-	(50)
Short-term investment	2,671	(1,247)
Other investments activities, net	(2,773)	(795)
Net cash used in investing activities from continuing operations	**(22,812)**	**(23,565)**
Net cash used in investing activities from discontinued operations	(12,476)	(669)
Net cash used in investing activities	**(35,288)**	**(24,234)**
Cash flow from financing activities:		
Loans and borrowings from third parties	5,165	34,023
Payments of loans and borrowings from third parties	(10,759)	(33,207)
Payments of leasing	(1,152)	(1,051)
Dividends and interest on capital paid to stockholders	(73,112)	(18,637)
Dividends and interest on capital paid to noncontrolling interest	(175)	(72)
Share buyback program	(29,121)	-
Transactions with noncontrolling stockholders	-	981
Net cash used in financing activities from continuing operations	**(109,154)**	**(17,963)**
Net cash used in financing activities from discontinued operations	(72)	(78)
Net cash used in financing activities	**(109,226)**	**(18,041)**
Increase (reduction) in cash and cash equivalents	**(7,748)**	**32,933**
Cash and cash equivalents in the beginning of the year	70,086	29,627
Effect of exchange rate changes on cash and cash equivalents	3,071	7,605
Cash and cash equivalents from subsidiaries sold, net	-	(79)
Cash and cash equivalents at end of the year	**65,409**	**70,086**
Cash flow from operating activities:		
Income (loss) before income taxes	159,147	38,405
Adjusted for:		
Equity results and other results in associates and joint ventures	6,947	5,210
Impairment and disposal of non-current assets	2,352	6,968
Provisions related to Brumadinho	1,140	21,255
Provision for de-characterization of dams	9,747	3,175
Depreciation, depletion and amortization	16,379	16,597
Financial results, net	(17,812)	24,152
Changes in assets and liabilities:		

Accounts receivable	4,604	(14,155)
Inventories	(2,572)	(691)
Suppliers and contractors	1,286	(766)
Payroll, related charges and other remunerations	85	1,441
Other assets and liabilities, net	(2,488)	(2,420)
Cash flow from operations	**178,815**	**99,171**
Non-cash transactions:		
Additions to property, plant and equipment - capitalized loans and borrowing costs	318	345

Operational and economic-financial performance

Selected financial indicators

R$ million	2021	2020
Net operating revenue	293,524	206,098
Costs and expenses	(128,511)	(104,347)
Expenses related to Brumadinho	(14,379)	(27,016)
Adjusted EBIT (LAJIR) from continuing operations	151,677	75,639
Adjusted EBIT margin (%)	51.7%	36.7%
Adjusted EBITDA (LAJIDA) from continuing operations	168,056	92,236
Net income from continuing operations attributable to Vale's stockholders	133,236	33,789

Reconciliation of EBITDA

R$ million	2021	2020
Net income from continued operations attributable to Vale's stockholders	**133,236**	33,789
Net income (loss) attributable to noncontrolling interests	591	(11)
Net income of continuing operations	**133,827**	33,778
Depreciation, depletion and amortization	16,379	16,597
Income taxes	25,320	4,627
Financial result	(17,812)	24,152
EBITDA from continued operations	**157,714**	**79,154**
Items for reconciliation of adjusted EBITDA		
Equity results and other results in associates and joint ventures	6,947	5,210
Dividends received from associates and joint ventures	1,043	904
Impairment and disposal of non-current assets	2,352	6,968
Adjusted EBITDA from continued operations	**168,056**	**92,236**

Segment information - 2021

			Expenses				
R$ million	**Net operating revenue**	**Cost of goods sold and services rendered[1]**	**Sales, administrative and other operating expense[1]**	**Research and evaluation[1]**	**Pre operating and operational stoppage[1]**	**Dividends received and interest from associates and JVs**	**Adjusted (EBITDA)**
Ferrous minerals	**249,143**	**(76,056)**	**(511)**	**(1,109)**	**(2,136)**	**441**	**169,772**
Iron ore	208,242	(61,860)	(720)	(1,073)	(1,791)	55	142,853
Iron ore pellets	37,951	(12,051)	164	(15)	(254)	386	26,181
Ferroalloys and manganese	937	(634)	(3)	(9)	(82)		209
Others ferrous products and services	2,013	(1,511)	48	(12)	(9)		529
Base Metals	**43,125**	**(24,213)**	**(83)**	**(853)**	**(595)**	**0**	**17,381**
Nickel[2]	29,148	(19,480)	(36)	(416)	(573)		8,643
Copper[3]	13,977	(4,733)	(47)	(437)	(22)		8,738
Brumadinho event			**(14,379)**				**(14,379)**
Covid-19			**(238)**				**(238)**
Others	**1,256**	**(1,568)**	**(3,756)**	**(996)**	**(18)**	**602**	**(4,480)**
Total from continuing operations	**293,524**	**(101,837)**	**(18,967)**	**(2,958)**	**(2,749)**	**1,043**	**168,056**
Discontinued operations (Coal)	5,877	(7,145)	(141)	(39)	-	424	(1,024)
Total	**299,401**	**(108,982)**	**(19,108)**	**(2,997)**	**(2,749)**	**1,467**	**167,032**

[1] Excluding depreciation, amortization and depletion.
[2] Including copper and by-products from nickel operations
[3] Including by-products from our copper operations.

Net income

Vale posted a net income of R$ 121.2 billion in 2021, a positive variation of R$ 94.5 billion compared to the R$ 26.7 billion recorded in 2020, mainly due to an increase in EBITDA and improved net financial results, as described below. Despite the positive result, there was an increase in the provisions for the dam decharacterization by R$ 9.7 billion and for the Renova Foundation by R$ 9.3 billion.

Financial results

Net financial results constituted a gain of R$ 17.8 billion, R$ 42 billion higher than in 2020. The result was mainly due to the gains recognized from the reclassification of exchange rate changes from equity to income due to the reduction of capital of a wholly-owned foreign subsidiary, liquidation of a wholly-owned subsidiary previously operating in international iron ore logistics and conclusion of the sale of VNC. Financial expenses were lower compared to 2020 due to the reduction in the fair value of participating debentures and the fair value of financial guarantees in foreign currency and provided to certain associates and joint ventures.

Financial results ***R$ million***	**2021**	**2020**
Financial expenses	**(8,942)**	**(16,666)**
Gross interest	(3,628)	(3,814)
Capitalization of interest	318	345
Participate Shareholder's debentures	(3,691)	(8,250)
Others	(1,647)	(4,672)
Financial expenses (REFIS	(294)	(275)
Financial income	**1,822**	**1,570**
Derivatives	**(153)**	**(5,526)**
Currency and interest rate swaps	(891)	(5,373)
Others (*commodities* etc.)	738	(153)
Foreign Exchange	**2,172**	**(2,741)**
Foreign adjustment reclassification	24,367	-
Monetary variation	**(1,454)**	**(789)**
Financial result	**17,812**	**(24,152)**

Income taxes

Vale recorded R$ 159.1 billion in income before income taxes. The application of income taxes (rate of 34%), tax benefits, and other effects recognized in results, totaled R$ 25.3 billion in income taxation.

R$ milllion	2021	2020
Income (loss) before income taxes	**159,147**	**38,405**
Income taxes at statutory rate - 34%	**(54,110)**	**(13,058)**
Adjustments that affect the basis of taxes:		
Income tax benefit from interest on stockholders' equity	1,400	1,660
Tax incentives	15,092	1,184
Equity results	896	(113)
Addition (reversal) of tax loss carryforward	1,408	3,984
Unrecognized tax losses of the year	(622)	(1,096)
Others	10,616	2,812
Income taxes	**(25,320)**	**(4,627)**

Impairment and disposals of non-current assets

Asset *impairments* (excluding *impairment* on investments), disposals of non-current assets, and onerous contracts for continuing operations, all of which had no cash effect, totaled R$ 2.4 billion in 2021, mainly due to the closing of the transaction for the sale of VNC, the sale of the Manganese Ferroalloys operations in Minas Gerais, and divestment in the coal segment allocated as discontinued operations in the income statement.

Impairment and onerous contracts of assets R$ million	2021	2020
Base Metals - Nickel – VNC	549	4,728
Manganese	192	412
Other assets	535	681
Onerous contracts	100	-
Disposal of non-current assets	976	1,147
Total from continuing operations	**2,352**	**6,968**
***Impairment* from Coal's discontinued operations**	**17,178**	**4,851**

Investments in affiliates, joint ventures, and subsidiaries

Vale has investments in associated companies, *joint ventures*, and subsidiaries in important business areas. The value of the investments of the main portfolio companies shown in Vale's balance sheet is listed in the table below. Investments are restated using the equity method and may differ from the entities' individual financial statements as they are presented in accordance with Vale's accounting policies.

R$ million	Investments		Equity results in the Income Statement	
	2021	2020	2021	2020
Associates and joint ventures				
Pelletizing plants	1,485	1,327	680	186
Aliança Geração de Energia	2,046	1,909	277	140
Aliança Norte Energia	586	606	(20)	(40)
California Steel Industries (CSI)	-	1,218	1,226	(31)
Companhia Siderúrgica do Pecém (CSP)	553	-	316	(655)
Mineração Rio do Norte (MRN)	-	367	(29)	(7)
MRS Logística (MRS)	2,334	2,069	394	185
VLI	2,278	2,495	(218)	(88)
Samarco S.A.	-	-	-	-
Others	489	566	27	(19)
Controlled				
Vale Holdings B.V	5,238	10,722	(153)	(2,163)
Vale International	75,923	105,036	10,103	14,543
Vale Canada	18,546	11,383	(611)	(4,407)
Salobo Metais	14,183	12,989	3,932	3,616
Minerações Brasileiras Reunidas (MBR)	2,425	10,960	1,314	1,875
Vale Malaysia Minerals	7,527	7,228	41	181
Others	10,027	12,444	(897)	(2,202)
Total	**143,640**	**181,319**	**16,382**	**11,114**

Investments

In 2021, investments totaled US$ 5.2 billion, with US$ 1.0 billion invested in project execution and US$ 4.2 billion in operations maintenance. Investments were 18% higher than in 2020, mainly due to: (a) progress in Salobo III, expansion of the Voisey's Bay mine and the Serra Sul 120 Mtpy project as planned; (b) implementation of the Capanema (Iron ore) and Sol do Cerrado (solar energy) project start-up; and (c) higher expenses in the Coal business.

In 2022, Vale expects to invest US$ 5.8 billion, an increase of 11% compared to 2021, mainly due to: (a) postponement of the 2021 investment program due to the Covid-19 pandemic; (b) postponement of investments in Sudbury as a result of labor disruptions; (c) higher disbursements in capital projects in the Iron Ore business (including Capanema, the dry concentration plant in Vargem Grande, and Serra Sul 120); and (d) capital contribution to the West III project, which consists of expanding the facilities at the Port of Shulanghu in China.

US$ million	**2021**	**2020**
Growth projects execution	999	522
Sustaining	4,228	3,908
Total	**5,227**	**4,430**

Sustaining capex by business area [1]

US$ million	**2021**	**2020**
Ferrous Minerals	3,027	2,392
Coal	194	203
Base Metals	1,862	1,654
Others	144	181
Total	**5,227**	**4,430**

[1] Does not include R&D.

Debt indicators

Gross debt totaled US$ 12.2 billion as of December 31st, 2021, US$ 1.2 billion lower when compared to December 31st, 2020. Net debt increased due to the use of cash mainly for the dividends payments, including two instalments of extraordinary dividends, as well as for share buyback programs, which was partially offset by solid cash generation in the year.

Expanded net debt rose to US$ 15.1 billion as of December 31st, 2021, mainly due to an increase in provisions for dam decharacterization and the Renova Foundation.

Debt indicators[13]

US$ million	2021	2020
Gross debt [1]	**12,180**	13,360
Lease (IFRS 16)	**1,602**	1,667
Gross debt and leases	13,782	15,027
Cash, cash equivalents and short-term investments	**11,905**	14,258
Net debt	1,877	769
Currency swaps[2]	724	883
Refis	2,288	2,744
Brumadinho provisions	3,537	4,575
Decharacterization provisions	3,523	2,289
Samarco & Renova Foundation provisions	3,112	2,074
Expanded net debt	15,061	13,334
Total debt / adjusted LTM EBITDA (x)	0.4	0.8
Net debt / adjusted LTM EBITDA (x)	0.06	0.04
Adjusted LTM EBITDA / LTM gross interest (x)	46.7	23.6

[1] Does not include leasing (IFRS 16).

[2] Includes interestrate swaps.

Liability management

The debt management transactions described below were carried out to optimize the Company's liabilities, thereby reducing risks associated with *liability management*:

(a) In January 2021, the Company contracted a credit facility in the amount of R$ 1,633 (US$ 300 million) with a development bank, which will mature in 2035.

(b) In March, Vale exercised the makewhole option for *the bond* provided in euros with a coupon of 3.750%, which matures in January 2023, in which the entire remaining balance of EUR 750,000,000 will be redeemed.

(c) In October and December of 2021, the Company contracted lines of credit, in the amounts of R$ 1,953 million (US$ 350 million) and R$ 1,563 million (US$ 280 million) maturing in 2027 and 2032 with a commercial bank and Japanese funding, respectively.

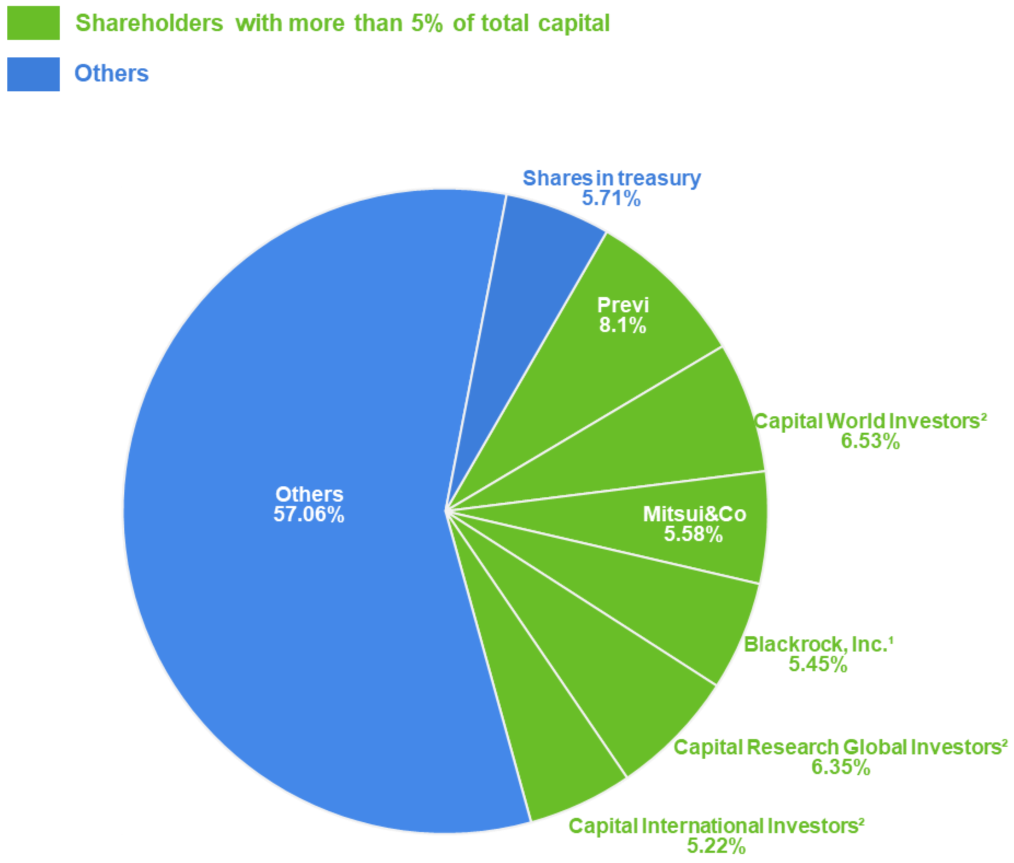
(d) In November, Vale renewed its *Revolving Credit Facility* (RCF) in the amount of US$ 2 billion. When added to the US$ 3 billion line of credit, there is a total of US$ 5 billion of resources available for withdrawal in emergency scenarios involving liquidity constraint.

[13] Does not include Discontinued operations.

Shareholding structure and capital markets

As of December 31st, 2021, the Company's capital consisted of 5,132,458,398 shares of common stock and 12 preferential shares of a special class (*golden shares*).

In relation to the previous year, it is important to note that, in December of 2021, Bradespar S.A. returned 130,654,877 shares of common stock issued by Vale that it previously owned to its shareholders, reducing its ownership interest in the Company to less than 5% of the capital, being now considered part of the "Others" portion.



[1] Position as of 12/31/2020
[2] Position as of 09/28/2021

Vale's performance in capital markets

The shares issued by Vale are listed on B3 (*ticker:* VALE3), NYSE (*ticker: VALE*, ADR Level 2), and on Latibex (*ticker:* XVALO).

Vale's shares traded on B3 appreciated by 4.9% in 2021 when compared to 2020. Vale's market value (number of shares outstanding multiplied by the share price) was approximately R$ 400.1 billion at the end of 2021 fiscal year.

The average daily trading volume of Vale's shares was R$ 2,381 million in 2021, an increase of 66.4% in relation to the volume traded in 2020. The shares issued by Vale are part of the main B3 indexes such as IBOV, IBRA, IBXL, IBXX, IGCT, IGCX, IGNM, IMAT, ITAG, and MLCX.

Market information	2021	2020[1]
Closing price (R$/share)	77.96	74.34
Volume avarege - VALE3 (R$ million)	2,381	1,431
Price average - VALE3 (R$/share)	87.03	47.38
Market cap - VALE3 (R$ billion)	400.1	462.1
Book value (R$/share)	38.4	34.2
VALE3 variation	**4.87%**	**70.93%**
Ibovespa variation	**-11.93%**	**2.92%**

[1] Ajusted price after dividends payments

Rights of shareholders.

Since December 2017, Vale's shares have been part of the Novo Mercado, B3's highest level of governance. Upon joining Novo Mercado, Vale migrated its shares, resulting in its capital being composed exclusively of shares of common stock with voting rights and new rights were granted to the Company's shareholders.

Shareholder remuneration

Distribution of dividends

The earnings with regards to the balance sheet for the 2021 fiscal year reached a total of R$ R$ 12,62[14] per share, including interest on capital and dividends and were distributed as follows:

(i) Based on the balance sheet as of March 31st, 2021 and the profit reserve as of December 31st, 2020, an extraordinary payment of R$ 2.19 per share was made for the purposes of shareholder remuneration. Of the total amount of R$ 2.19 per share, **R$ 0.72 per share refers to the balance sheet as of March 31st, 2021**. Payment of dividends was made on June 30th, 2021 for holders of shares on B3 and as of July 8th, 2021 for ADR holders.

(ii) Based **on the balance sheet as of June 30th, 2021, dividends were paid in the amount of R$ 8.20 per share**. The payment of dividends was made on June 30th, 2021 for holders of shares on B3 and as of July 8th, 2021 for ADR holders.

(iii) **Based on the balance sheet as of December 31, 2021**, the Board of Directors approved the payment of dividends in the amount of **R$ 3.70 per share[14]**. The dividends will be paid on March 16, 2022 for holders of shares on B3 and as of March 22, 2022 for ADR holders.

Please consult Vale's website (the Equity and Debt Section) in order to access the Shareholder Remuneration Policy and the historical payment of dividends and interest on equity.

Share Buyback Program

- In April 2021, Vale's Board of Directors approved a Share Buyback Program, which involved a total number of 270 million shares and was concluded in October of 2021.
- In October 2021, a new Share Buyback Program was announced, which is limited to 200 million shares and is to be implemented within a period of 18 months.

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[14] The final amount may change slightly until the March 2022 payment, due to the change in the number of shares in the treasury.

2022 business perspectives[15]

Ferrous minerals

Vale's iron ore fines production *guidance* for 2022 is 320-335 Mt (1.4%-6.1% increase over 2021) with an improved average quality of the product portfolio due to the resumption of operations and the commissioning of the tailings filtration plants with an improvement in the average quality of the product portfolio.

This guidance reflects Vale's *value-over-volume* strategy through management of its extensive value chain and its portfolio of high-quality products. Vale's product portfolio is adjusted to reflect industry trends towards products providing lower emissions, improving quality and productivity, controlling costs, strengthening logistics infrastructure for railways, ports, and distribution centers, and constituting a commitment to a safe, greene, and efficient portfolio and strengthening clients relationships.

Base Metals

Nickel

Vale's ex-VNC nickel production guidance in 2022 totaled approximately 175-190 kt (4.2%-13.1% increase over 2021). The resumption of production volumes will mainly be due to stabilization of production in the North Atlantic, which was previous impacted by the stoppage of operations at Sudbury in 2021.

Vale's strategy for its nickel business is to be a leader in providing nickel for a sustainable energy matrix transition. Class 1 nickel, Vale's main product, places the Company in a unique position with environmentally friendly operations in the North Atlantic, in line with the transition to a low carbon economy, besides supporting our ambition to be a leader in sustainable mining.

Copper

Vale's copper production guidance for 2022 is 330-355 kt (11.2%-19.6% increase over 2021). Vale's strategy with regards to its copper business is to seek outgrowth in an organic manner, leveraging its position in the Carajás mineral district through competitive projects such as Salobo III and Alemão, which will increase its production capacity, and the implementation of the Cristalino project, which will make it possible to extend the life of the Sossego mill. In addition, Vale continues to develop studies of the Hu'u project in Indonesia, a world-class asset, and is investing in the exploration of assets in mining regions considered to be prolific such as Andean America and Eastern Europe.

[15] The information disclosed in this item represents a mere estimate and in no way constitutes a promise by the Company and/or its managers with regards to performance. For more information, please consult Vale's Reference Form.

Policy regarding independent auditors

In 2020, Vale's Board of Directors approved the "Policy for Provision of Audit Services by Independent Auditors", which is aligned with the internal procedures previously in force and establishes guidelines and principles to be followed in the process of contracting external audit services of the Company and its subsidiaries. This policy aims to avoid the existence of conflicts of interest, loss of independence or objectivity of its independent auditors.

In line with the best corporate governance practices, all services provided by our independent auditors are supported by a letter of independence issued at least annually to the Company's Management, and that are approved by the Statutory Audit Committee.

The Company has an agreement in place for conducting an independent audit of its financial statements with the firm *PricewaterhouseCoopers Auditores Independentes* ("PwC"), which is effective for five years beginning with the audit of the financial statements for the fiscal year ended December 31st, 2019. The fees incurred for fiscal year ended December 31st, 2021, and December 31st, 2020, for Vale and its subsidiaries were as follows:

Fees in R$ thousand	2021	2020
Financial Audit	31,586	29,903
Audit Related Services[1]	453	612
Total External Audit Services	32,039	30,515

[1] Those services are mostly contracted for periods of less than one year.