One of two 100% electric trucks delivered to iron ore mines.

MANAGEMENT REPORT 2022

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INFORMATION ON WEBCAST AND CONFERENCE CALL

Vale S.A. ("Vale" or the "Company") will host a webcast on Friday, February 17, 2023 at 11:00 am, Brasília time (9:00 am New York time; 2:00 pm London time). Internet access to the webcast and presentation materials will be available on Vale's website at www.vale.com/investidores. The conference call will be in English, simultaneously translated into Portuguese and broadcast live on the Company's *website*. A recorded copy of the webcast will be available shortly after the end of the conference call. Interested parties can listen to the conference call by calling:

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The Access Code for this call is VALE.

More information on Vale can be found at: vale.com

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A Letter from the Chairman of the Board of Directors

Dear Shareholders,

Vale advances in its ambition to become a leader in sustainable mining and a reference in creating and sharing value with its shareholders, stakeholders, and society. In the global energy transition, Vale plays a fundamental role, with its portfolio of high-quality iron ore products and solutions, essential for the decarbonization of the steel industry, and as a producer of essential metals for global electrification.

In 2022, with clear goals for its long-term environmental and social activities, Vale intensified dialogue with shareholders, communities, and society, and evolved with greater information transparency. The Board of Directors continues to act with enthusiasm and diligence in building the Vale of the future.

Effective Board performance

The Board of Directors, reappointed at the 2022 Annual General Meeting, played an effective role in defining the Company's future. At 80 years of Vale's operations in Brazil and planning Vale for the next 20 years, the Board approved the Vale 100 Strategy, which supports Vale's centenary journey. The Board's performance in long-term strategic planning benefited from the broad and diverse background of its members, with very rich and plural discussions.

The Board's dynamics gained more efficiency, with a reduction in the number of meetings and better dynamics in discussions. In 2022, 21 Board meetings and 86 Advisory Committee meetings were held, a 42% and 21% reduction, respectively, compared to 2021, the first year of the current Board's mandate.

Oversight of critical issues

The Board of Directors highlights the efficient oversight of issues critical to Vale's short and long-term performance as one of its priorities. In 2022, the Board maintained close monitoring on the following matters:

- Periodic monitoring of Vale's Integrated Global Risk Map.
- The evolution of tailings dam management, structures in critical safety conditions and the progress of the Upstream Dam Decharacterization Program.
- Brumadinho reparation and the execution of Brumadinho's Integral Reparation Agreement, according to established timeframes.
- The reparation in Mariana, led by the Renova Foundation, with attention to accelerating the housing rights restoration and individual compensation processes. The Board monitors the negotiations with authorities for higher-speed reparation programs.
- The progress of cultural transformation, to make Vale a reliable operator, a leader in sustainable mining, a benchmark in safety, innovative, talent-driven, diverse, and inclusive.
- The launch of Vale's first public report on its Ethics & Compliance Program, referring to the previous year.
- Details of actions required to achieve the long-term social goal – lifting 500,000 people out of extreme poverty by 2030[1].
- Actions for the stability of Iron Solutions and Energy Transition Materials operations with safety and competitiveness.
- Expansion of the high-quality iron ore products and solutions portfolio, in partnership with clients.
- The reorganization of the Energy Transition Materials business and the search for a minority investor for the business, to accelerate the value creation agenda in the energy transition.

[1] In line with the Sustainable Development Goals of the United Nations, particularly item 1 – Poverty Eradication.

- The divestment of non-core assets, with the completion of transactions related to the California Steel Industries – CSI, the Moatize coal mine and the Nacala Logistics Corridor, and the iron ore, manganese, and logistics assets of the Midwestern System, in addition to entering into a binding agreement for the sale of the Companhia Siderúrgica do Pecém – CSP.

Capital allocation and return on value

Vale's Board sustains its commitment to return value to shareholders and understands that the dividend distribution and share buyback programs are important tools in this regard. The Board approved the payment of dividends and interest on equity that represented, in 2022, R$ 5.69 /share, generating a return (dividend yield) of 7.3% on the share value at the end of 2021[2].

In 2022, the Board also approved a new share buyback program, which reached 43% of its totality, with approximately 213 million shares repurchased for a total of US$ 3.4 billion, representing more than 5% of outstanding shares as of the date of this report. Altogether, the three buyback programs executed since 2021 have accumulated a total of 683 million shares repurchased and earnings and dividends on a per share basis have increased 15%.

Governance improvements

The Board simplified and modernized the Company's policy framework, which included a comprehensive review of the attributions of Vale's governance bodies, in line with best global practices. To reinforce the role of the Board of Directors in the Company's strategic direction, the powers of the body were revised, and the levels of delegation to the Executive Committee were increased with the Authority Policy review. The composition of the statutory committees became exclusive to elected members and the number of permanent committees was reduced from 7 to 5, with the scope of the remaining committees being adjusted to ensure full coverage of critical issues.

The new design of the top leadership, established in December 2022, aims to accelerate the achievement of the Company's strategic objectives. The adjustments favor, among other items, the acceleration of the development of products and innovative solutions in iron ore and the improvement of the marketing strategy for Vale's portfolio, the wide implementation of Vale's management model in the Iron Ore business, the support for the development and longevity of the Company's portfolio and the reinforcement of Vale's second line of defense and risk management model.

ESG Commitments

The implementation of Vale's climate strategy reached important milestones in 2022, such as the operational start-up of Sol do Cerrado solar park, the largest project of its kind in Latin America. The Board monitors the maturity and development of projects and technologies that are critical to achieving the Company's carbon emissions reduction targets, in line with the Paris Agreement and in pursuit of carbon neutrality by 2050.

As a circular mining approach, the Board encourages the development of co-products from the reuse of mining tailings. In the preservation and recovery of forests, about 50 thousand hectares were protected in 2022, totaling more than 170 thousand hectares protected and/or recovered since 2019, which add up to about 1 million hectares of forest protected by Vale, mostly in the Amazon[3].

On the social front, the Board encourages building positive relationships with communities surrounding operations, with special attention to ESG controversies, indigenous peoples, and traditional communities. In 2022, Eduardo Bartolomeo had the honor of being the first and only Vale CEO, in 40 years of operations in the region, to visit the indigenous land and celebrate a historic agreement with the Xikrin do Cateté Indigenous People, ending 15-year controversies and starting a positive phase in the relationship model.

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[2] Considering earnings distributed per share (R$ 5.69), divided by the closing share price (R$ 77.96) on 12/30/2021 (excluding dividends paid in 2022). The starting share value considered was defined within the period related to the dividend (year 2022) for a better yield measurement in the referred period.
[3] Directly or through partnerships.

Perspectives for the evolution of Vale's Board of Directors

At the next Annual General Meeting, shareholders will have the opportunity to elect Vale's Board of Directors for the 2023-2025 term. To structure the process of nominating candidates, in June 2022, the Board of Directors installed the Nominating Committee, composed mostly of independent directors. In tune with the challenges faced by society and by Vale, the Board to be elected will guide the Company on its centenary journey, with operational excellence, towards leadership in sustainable mining.

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 to act energetically and attentively to make Vale one of the safest and most reliable mining companies in the world.

Jose Luciano Penido
Chairman of the Board of Directors

A message from Vale's CEO

Dear Vale Shareholder,

The year of 2022 was affected by issues with global impacts, such as the war in Ukraine and the challenging economic picture in the United States, as well as the Covid-19 developments in China. Despite the demanding and volatile scenario, we built a solid result and returned value to our stakeholders. I thank my colleagues on the Executive Committee, our Board of Directors, our employees, the communities where we operate, suppliers and clients for their continued support and partnership.

Additional uncertainties about energy supply have joined the climate emergency to reinforce the necessary diversification of matrixes on a global level. In this context, Vale is essential to the energy revolution. In addition to acting to reduce its own emissions, Vale is uniquely positioned with its high-quality products and solutions and assets strategically positioned to support the decarbonization of the steel industry and the electrification of the world.

A change in the iron ore demand profile is in progress, with higher opportunities for segmentation and growth in demand for high quality. We are facing a unique transformation in the steel market and there is no other company that combines volume and high-quality iron ore, innovative products and supply chain like Vale to deliver decarbonization solutions that the steel industry needs.

In 2022, Vale engaged with clients that represent about 50% of Vale's Scope 3 emissions to build partnerships in the development of low-carbon materials and solutions. In the same path, we signed three agreements in the Middle East for the development of Mega Hubs, industrial complexes focused on the supply of lower emission solutions. In Brazil, we began work on the first commercial plant of Tecnored, Vale's wholly-owned subsidiary focused on the production of pig iron using biomass as fuel, with zero CO_2 emissions.

In Energy Transition Materials, we have the right assets in the right jurisdictions, making us the ideal partner for supplying high-quality products to our clients. In the energy transition, we have strategic nickel supply agreements with Swedish lithium-cell producer Northvolt AB and automaker General Motors, and a memorandum of understanding of nickel processing between PTVI, Huayou and Ford Motor Co. We are developing a unique plant in Canada and North America to produce nickel sulfate from high-purity and low-carbon nickel from our Canadian refineries. This project is a natural extension for our business, offering diversified sales with fast entry and anchor point into the North American electric vehicle market.

We advanced in our scope 1 & 2 emissions reduction target by 2030, with 7 p.p. delivered in 2022, from the start of Sol do Cerrado operation, one of the largest solar projects in Latin América. We are more mature in our portfolio of projects portfolio for decarbonization, for example, we entered into a contract to enable the supply of natural gas as fuel for a pilot pelletizing plant. We are also testing biochar in our metallurgical and pelletizing processes, while progressing with the conversion of two pelletizing plants into green briquette plants. With the Powershift program, we are continuing the electrification of our operations through renewable sources by adding a new locomotive and new battery-powered off-highway trucks.

Our strategic roadmap, established in 2019, allowed significant results by 2022. We materially reduced Vale's risk exposure:

- We advanced in Brumadinho reparation, with the execution of 58% of the commitments set out in the Integral Reparation Agreement and total disbursement in the reparation of R$ 37.6 billion by 2022[4]. In Mariana reparation[5], the housing rights restoration was accelerated, with 315 solutions delivered by 2022, reaching a total of 441 solutions delivered, compared to the 584 requests by the resettlement.

- We reduced 40%[6] of our upstream dams' portfolio in Brazil, with 12 structures eliminated by 2022. The B3/B4 dam had its emergency level reduced from 3 to 2, an important step to eliminate critical safety conditions in dams by 2025. We also implemented successful safety improvements for another 8 tailings dams, which had emergency level

[4] Includes incurred expenses.
[5] Mariana reparation is conducted by Renova Foundation according to TTAC, term signed in March 2016 by the interested parties.
[6] Considers the number of decharacterized structures and to be decharacterized.

protocols deactivated. By December 2022, Vale's Tailings and Dams Management System achieved about 90% adherence to the requirements of the Global Industry Standard on Tailings Management (GISTM).

- We continue with the capacity resumption, with the delivery of new assets that increase the resilience and flexibility of our operations, such as the implementation of four tailings filtration plants, enabling safer and more sustainable beneficiation processes and reducing our dependence on the use of dams.

We have significantly simplified our portfolio, with the responsible divestment of 9 non-core assets in 5 countries since 2019, eliminating costs of up to US$ 2.0 billion per year. This action allows us to focus on our core assets, starting with the reorganization of our Energy Transition Materials operations in Brazil, with more efficient processes and management. We improved our cost efficiency with a comprehensive program to identify cost cutting and productivity gains, which include digital solutions and a new, leaner organizational design.

As a result of better practices and greater transparency, we received upgrades in our ESG ratings from Moody's and MSCI. Maintaining our discipline in capital allocation, we returned value to shareholders, with the distribution of US$ 6.6 billion in dividends and interest on capital by 2022, and US$ 6.0 billion dedicated to share buybacks.

In our Iron Solutions operations, we faced delays in the licensing of Serra Norte and a drop in the operational performance of S11D, linked to the jaspilite waste processing, which resulted in production in line with the previous year. In nickel operations, we closed the year with higher production, after successful actions to stabilize operations affected by a work stoppage in 2021. In copper operations, prolonged maintenance - necessary for asset integrity - affected the annual production volume. In 2023, we are in a stronger position to face remaining challenges, which enable Vale to deliver the production guidance.

Vale's transformation into a company that is a benchmark in safety is built day by day. Through our Safety Transformation Program, we have reduced more than 80% of the number of high-potential (N2) recordable injuries since 2019 in key critical activities, such as driving motor vehicles and operating mobile equipment. Vale now has the lowest Total Recordable Accident Frequency Rate (TRIFR) in 15 years. In 2022, more than 24 thousand employees gave their perception about the adherence to key behaviors in their routines, a picture that reveals the growth of the obsession for safety and risk management in our routine.

Vale's relationship with its communities is one of our priorities, and, in 2022, symbolic milestones were achieved, such as a historic agreement with the Xikrin do Cateté Indigenous People, which ended 15 years of controversy; an agreement with the Kayapó indigenous people, which agreed on resources for investments in structuring projects and established a fund for future generations; and the approval by the Gavião Indigenous People of the Basic Environmental Plan in the project for the duplication of the Carajás Railroad.

Our commitment to protecting human rights advances, with 76% of Vale's operations (including 100% of operations in Brazil) covered by human rights due diligence, reaching 100% by 2024. Seeking to be a good neighbor, we are working to serve 100% of priority communities with Relationship Plans by 2026, of which 78% of Brazilian communities already have their Relationship Plans. In 2022, Vale maintained relationships with 1,532 communities in different countries

Considering these results, and to strength our strategy for the Vale of the future, we have defined new strategic guidelines: promote sustainable mining, foster low-carbon solutions, and stay disciplined. We remain firm in our goal of making Vale a leader in sustainable mining, promoting low-carbon solutions for the energy revolution and for the decarbonization of the steel industry. And, of course, always with great discipline and being a reference in creating and sharing value.

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

Eduardo Bartolomeo
President

Highlights of the year

Business results

- **Adjusted EBITDA from continuing operations totaled R$ 102.1 billion**, 39% below 2021, mainly due to lower iron ore prices in the year. **Net earnings attributable to Vale's shareholders were R$ 95.9 billion**, down 21% when compared to R$ 121.2 billion in 2021, due to lower EBITDA.

- **Dividends and interest on equity** paid in the year represented R$ 5.69/share, generating a return (dividend yield) of 7.3% on the closing value of the share on December 31, 2021[7], reinforcing the company's commitment to returning shareholder value.

- **Strong commitment to the current share buyback program**, which reached 43% of its totality, with approximately 213 million shares[8] repurchased for a total of US$ 3.4 billion, representing more than 5% of outstanding shares as of the date of this report. Altogether, the three buyback programs accumulate a total of 683 million shares repurchased, and earnings and dividends on a per share basis have each increased 15%.

- **Iron ore production totaled 308 Mt**, 2% lower when compared to the previous year, mainly due to delays in the licensing of Serra Norte and the operational performance and jaspilite waste processing in S11D. The **production of pellets totaled 32 Mt**, in line with the 2021 production, with a better mix of direct reduction pellets, leveraged by a higher quality feed and taking advantage of higher market premiums.

- In the Energy Transition Materials operations, **nickel production totaled 179 kt**, 6% higher than 2021, mainly due to the stabilization of the Sudbury operations and the strong performance in Onça Puma. **Copper production totaled 253 kt**, down 15% year-on-year due to critical maintenance activities at Sossego and Salobo.

Strengthening core assets

- **Responsible divestment of non-core assets**, totaling 9 deals in 5 countries since 2019, eliminating expenditures of up to US$ 2.0 billion per year.

- **Approval of the Morowali project** (formerly known as Bahodopi nickel project), in Indonesia, with start-up scheduled for 2025. The RKEF (Rotary-Kiln Electric Furnace) front of the project is a partnership among PTVI and two Chinese partners with capacity of 73 ktpy, and estimated investment of around US$ 2.2 billion[9] for the plant RKEF and US$ 400 million for the mine.

- **Reorganization of energy transition materials operations in Brazil,** to centralize copper and nickel assets in two companies, with more efficient processes and management. The copper and nickel assets continue to be consolidated and wholly owned by Vale.

- **Approval for the construction of the 2nd furnace at Onça Puma**, in Brazil, with an investment of US$ 555 million to add capacity of 12-15 ktpy of nickel. The project is expected to start up operations in 1H25.

- In Canada, **beginning of the first phase of the C$ 945 million Copper Cliff Complex South Mine Project**, which is expected to nearly double ore production at the Copper Cliff mine, adding around 10 ktpy of nickel and 13 ktpy of copper.

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[7] Considering earnings distributed per share (R$ 5.67), divided by the closing share price (R$ 77.96) on 12/30/2021 (excluding dividends paid in 2022). The starting share value considered was defined within the period related to the dividend (year 2022) for a better yield measurement in the referred period.
[8] Related to the third buyback program in April 2022 for a total of 500 million shares. As reflected in our 4Q22 Financial Statements, as of December 30, 2022, the Company had repurchased approximately 188 million common shares for a total amount of US$2.9 billion.
[9] Base 100%. Excluding contingency. PTVI owns 49% of the processing facility and 100% of the mine. The mine will supply ore pursuant to PTVI's equity interest in the JV.

- **Delivery of the Salobo III project**, in Brazil, with investments in the order of US$ 1.0 billion for the implementation of the third processing line with a capacity of 12 Mtpy, a potential increase in copper production between 30 and 40 ktpy per year. Operation at full capacity is scheduled for 4Q24.

- **Beginning of construction of Tecnored's commercial plant**, worth R$ 1.6 billion. The start-up is scheduled for 2025, with an initial production capacity of 250 ktpy of green pig iron, which could reach 500 ktpy in the future.

Strategic partnerships

- Multi-year agreement to supply low-carbon nickel to Swedish lithium-cell producer **Northvolt AB**.

- Long-term nickel supply agreement with **General Motors**, key to North America's EV supply chain. Vale will supply battery grade nickel sulfate, equivalent to 25 ktpy of contained nickel, starting in 2026.

- Memorandum of Understanding ("MoU") with **Nippon Steel Corporation,** Hunan Iron & Steel Group[10], SHS, among others to pursue ironmaking solutions focused on the carbon-neutral steelmaking process.

- The start of construction for the Zhongzhai Pre-blending Project, a partnership with Shagang and Ningbo Zhoushan Port. Vale is committed to supply part of the blended cargos, with high-quality products as BRBF, and to provide technical assistance on the blending activities.

- MoU among **PTVI, Huayou and Ford Motor Co**. to process nickel ore mined by PTVI in Pomalaa, Indonesia.

- Affirmed nickel supply contract with Tesla.

Disciplined capital allocation

- **Investments of US$ 5.4 billion**, including growth and sustaining investments, in line with guidance.

- **Gross debt and leases of US$ 12.7 billion** as of December 31, 2022, US$ 1.0 billion lower year-on-year, largely due to bank loan repayments.

- **Expanded net debt[11] of US$ 14.1 billion**, up 56% year-on-year, but remaining within targeted leverage of US$ 10-20 billion. The increase was mainly due to lower operating cash generation, increased payments of reparation commitments, and maintenance of the cash return to shareholder commitment, while seeking a more efficient leverage structure for the Company.

- **Maximization of cost efficiency** with a broad program to identify cost cuts and productivity gains, which include the inclusion of digital solutions, and a new, leaner organizational design.

Promotion of sustainable mining

- For **scope 1 and 2 emission reductions**, Vale entered into an agreement to enable the supply of natural gas from one of its pelletizing plants, started operating the Sol do Cerrado project, one of the largest solar farms in Latin America, and advanced in the electrification of the operational fleet through renewable sources.

- In the **decarbonization of the steel making industry**, the Company engaged with customers that represent around 50% of Vale's Scope 3 emissions for the development of solutions and signed three agreements in the Middle East to develop Mega Hubs for procurement of green solutions to the steel industry, among other actions.

[10] Former Hunan Valin Iron & Steel Group Co., Ltd.

[11] On October 27, 2022, Vale revised the concept of Expanded Net Debt, seeking to be more aligned with market practices and to have an indicator that better informs management in making capital allocation decisions. The revised Expanded Net Debt represented an initial reduction of approximately US$ 6 billion and now considers: (a) net debt, leasing (IFRS 16) and currency swaps, and (b) the provisions for repairs in Brumadinho and Mariana, whose annual cash commitments are more concentrated in the first years. Operational and regulatory commitments previously included, such as the Refis tax renegotiation program and the provision for decommissioning upstream dams, are now excluded from the Expanded Net Debt concept. These commitments are expected to have a more stable and longer annual cash disbursement profile. The Expanded Net Debt target of $10 billion to $20 billion remains unchanged.

- As milestones in the improvement of **relationships with indigenous peoples and traditional communities**, in 2022 Vale signed a historic agreement with the Xikrin do Cateté Indigenous People, which ended 15-year disputes, and with the Pataxó and Pataxó Hã-Hã-Hãe communities, affected by the Brumadinho dam collapse.

- In 2022, Vale **dedicated around US$ 3.7 billion to socio-environmental and institutional initiatives**, excluding disbursements related to the reparations in Brumadinho and Mariana.

- Governance has evolved to **concentrate the work of the Board of Directors** on the Company's strategic direction. At the executive level, the **new organizational design** aims to accelerate the achievement of strategic objectives.

- In the reparation of **Brumadinho**, Vale advanced with the execution of the Integral Reparation Agreement[12], reaching 58% of its commitments[13]. Since 2019, R$ 37.6 billion have been disbursed[14], with another R$ 7.9 billion expected for 2023.

- In the reparation of **Mariana**, the restitution of the right to housing was accelerated with 315 solutions in 2022, a total of 441 housing solutions delivered, compared to the 584 assistances, as provided for resettlement.

- In the **Upstream Dam Decharacterization Program**, 12 structures were eliminated by 2022.

- **The B3/B4 dam had its emergency level reduced from 3 to 2**, after successful safety improvements, an important milestone in the journey to eliminate critical safety conditions in dams[15] by 2025.

- In 2022, **8 structures received stability condition statements**, with emergency level protocols withdrawn.

- **Implementation of 4 tailings filtration plants**, which allow for safer and more sustainable processing processes, and the reduction of dependence on the use of dams.

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[12] Signed on February 4, 2021 by the Government of Minas Gerais, State Prosecution Office, Federal Prosecution Office, Public Defender's Office of Minas Gerais and Vale.
[13] Commitments to pay and to make.
[14] Includes incurred expenses.
[15] Level 3 emergency.

Sustainability

Vale is a nature-based company, which promotes sustainable mining and encourages low-carbon solutions as part of its strategy. With unique assets for the energy transition, the Company improves its practices and goals to achieve a more sustainable performance and future, sharing value with society.

Environmental

- Vale continues to pursue its goals of **reducing scopes 1 and 2 emissions by 33% by 2030**, of **carbon neutrality by 2050**, in line with the Paris Agreement, and of **100% renewable energy in Brazil (2025) and globally (2030)**. Among numerous advances, the following stand out:
    - **Beginning of operations of Sol do Cerrado solar farm**, one of the largest solar energy projects in Latin America, with an installed capacity of 766MWp. In July 2023, when it should reach full operating capacity, it will produce 16% of all the energy required by Vale's operations in Brazil.
    - **Powershift program for the electrification of operations**: in railroad mode, the second 100% electric locomotive was delivered, with autonomy of up to 10 hours[16]; in road transport, two battery-powered off-highway trucks weighing 72t were received. In addition to zeroing CO2 emissions, the noise impact is minimized.
    - The **use of natural gas at Vale's pelletizing plant in São Luís** (MA) was entered into a contract, the first step towards converting 100% of the pelletizing plants for consumption of natural gas, starting in 2024,.
- Seeking to achieve the goal of **15% reduction of net scope 3 emissions by 2035**, the following stand out:
    - Partnerships in the development of decarbonization solutions in the steel making industry, with **engagement of around 30 steelmaking clients**, which represent approximately 50% of Vale's Scope 3 emissions.
    - **Beginning of construction of the first commercial plant for Tecnored**, a wholly owned subsidiary of Vale, in Marabá (PA). With a production capacity of 250 ktpy of green pig iron, with low carbon emissions, and start-up scheduled for 2025, the project has estimated investments of R$ 1.6 billion.
    - Signing of **three agreements for a joint study on the development of Mega Hubs**, industrial complexes for the production of hot briquetted iron ("HBI") and steel products with a significant reduction of CO_2 emissions. The agreements have been signed with local authorities and customers in the Kingdom of Saudi Arabia, the United Arab Emirates and the Sultanate of Oman, and potential production will be destined for local and seaborne markets.
    - In shipping, obtaining independent approval[17] for **a pioneering project for multi-fuel tanks on ships** for transportation of iron ore. A preliminary study for Guaibamaxes estimates a reduction of emission between 40% and 80% with the use of methanol and ammonia, or up to 23% with LNG.
    - In the voluntary commitment to **protect and restore 500 thousand hectares of forestry areas**[18] by 2030, 51,000 hectares were protected and/or recovered[19] in 2022, bringing the total to 172,000 hectares since 2019[20], or about **34.4% of the long-term goal**.

[16] No recharge shutdown.
[17] Approval in Principle confirms that a concept design is viable and that there are no significant obstacles to its performance. It is provided by an independent external entity.
[18] Beyond company boundaries.
[19] Consider the recovery of a degraded forest area to a non-degraded condition, which may be different from its original condition, but which increases vegetation cover and results in carbon capture. It is considered protected the area with conserved native vegetation cover, generated in the maintenance of the carbon stock. In 2022, 50,000 hectares were protected and 1,215 hectares recovered.
[20] Considering about 165,000 hectares protected and about 7,000 hectares recovered.

- The “Biomas” initiative, launched by Vale and other large companies in **partnership to restore and protect 4 million hectares of native forests** in different Brazilian biomes over 20 years.

- As a **circular mining** approach, 580 kt of certified sand were produced in Brucutu, Viga and Itabira in 2022 from the reuse of mining tailings.

Social

- Vale seeks to **contribute to indigenous peoples and traditional communities** in promoting their rights, valuing culture and ethnic development. **Dispute resolution** and **transparency in operating conditions** for well-informed decisions are essential to building dialogue and joint work.

  - Vale signed a historic agreement with the Xikrin do Cateté Indigenous People, which **ended 15-year disputes**, and started a positive phase in the relationship.

  - Vale signed an agreement with the Pataxó and Pataxó Hã-Hã-Hãe communities, affected by the Brumadinho dam collapse.

  - The Company has also signed an **agreement with the Kayapó indigenous community**[21], which agrees on resources for investments in structuring projects and establishes a fund for future generations.

  - In the Carajás Railroad duplication project, **approval of the Basic Environmental Plan by the Gavião Indigenous People**[22], with the consent of the National Indigenous Foundation and issuance of the Construction License for the project by IBAMA.

- In line with the goal of **taking 500,000 people out of extreme poverty by 2030**, in 2022 Vale has defined a methodology for its performance and has carried out more in-depth planning of actions for the coming years. In 2023 Vale will begin concept tests in urban, rural and forest locations, for the benefit of 30,000 people.

- With firm action in **protecting human rights**, 76% of Vale's operations (including 100% of operations in Brazil) underwent due diligence of human rights[23]. The remaining 24% will have adherence assessed between 2023 and 2024.

- Seeking to **be a good neighbor**, the Company works to serve 100% of priority communities with relationship plans by 2026. In Brazil, 165 are very high and high priority communities for engagement. Currently, 78% of these communities have Relationship Plans.

- In 2022, the Community Relations Channel[24] registered 11,085 protesting, an expected volume and in line with the numbers observed in 2021. Of this total, 99.4% were answered and 84.2% served.

- In 2022, Vale **dedicated around R$ 3.7 billion[25] to social and environmental and institutional initiatives**, excluding disbursements related to the reparations.

Governance

- In line with best practices of corporate governance, **Vale’s Board of Directors is made up of an independent majority**[26], including its Chairman.

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[21] Within the scope of the Public-Interest Civil Action of Onça Puma. For more information, access the Company's ESG Portal, section of Controversies.
[22] Arãtikatêjê, Kyikatêjê and Parkatêjê.
[23] Executed by independent external companies based on the United Nations Guiding Principles on Business and Human Rights.
[24] The Community Relations Channel is one of Vale's stakeholders' listening channels and is part of the Company's Listening and Response Mechanism.
[25] Estimated value in Brazilian reals. For installments outside Brazil, we use the monthly exchange rate, which is an average of R$/US$ 5.16 for 2022.
[26] 8 out of 13 members of the Board of Directors are independent.

- Its election in 2022 was previously advised by the Nominating and Governance Committee ("CIG"), also with an independent majority.

- For the 2023 election, scheduled to take place at the Annual Meeting of Shareholders in April, the CIG is installed to define the qualification matrix and the list of candidates nominated for election, among other prerogatives of the body.

- In 2022, the Board of Directors simplified and modernized the Company's policy bundle. To **concentrate the work of the Board** on the Company's strategic direction, the qualification of the body has been changed and a wide review of the Delegation Policy was implemented. The statutory advisory committees were reduced from 7 to 5[27] - the Innovation Committee became non-permanent and non-statutory; the Safety and Operational Excellence Committee was terminated, with attributions absorbed by the Audit and Risk Committee. The composition of advisory committees became exclusive to members of the Board of Directors.

- The **new design at the executive level** aims to accelerate the achievement of strategic purposes. Among other adjustments:

  - The Executive Vice-Presidency of Iron Ore Solutions, under the leadership of Marcello Spinelli, was created to accelerate the development of products and innovative solutions in iron ore, and the improvement of the marketing strategy for our portfolio, with substantial value creation in the decarbonization process.

  - The Executive Vice-Presidency of Operations, under the leadership of Carlos Medeiros, was created to accelerate the implementation of the Vale management model in the Iron Solutions business. With the management of mining, pelletizing and logistics operations, the area will deepen the standardization of processes and promote greater safety, operational stability, increasing flexibility and efficiency for Vale's production.

  - To support the development and longevity of the Company's portfolio, the Executive Vice-Presidency for Projects was created, under the leadership of Alexandre Pereira, for the implementation of key projects in the strategic plan.

  - To reinforce the second line of defense and the risk management model at Vale, promoting the journey towards technical excellence, the Technical Executive Vice-Presidency was created. The area incorporates the attributions of the former Executive Vice-Presidency for Safety and Operational Excellence and receives additional attributions, increasing the concentration of technical qualifications. Rafael Bittar, then Director of Geotechnics, took over the position.

- Advancing towards **transparency** of the Company's information:

  - The Integrated Report was published, with indicators, management approaches, and accountability on environmental, social and governance issues, according to the materiality matrix.

  - The Annual Tax Transparency Report was published, for a better understanding of the global contribution of Vale and its operations to societies and economies.

  - The Company's sustainability agenda is maintained and updated frequently at www.vale.com/esg.

Reparation

- In **Brumadinho**, Vale advanced with the execution of the Integral Reparation Agreement[28], reaching 58% of its commitments[29], according to established deadlines. In individual indemnities, Vale signed agreements that reach 13.6 thousand people and R$ 3.2 billion. Since 2019, R$ 37.6 billion have been spent on reparation, with another R$ 7.9 billion expected in 2023.

[27] Capital Allocation and Projects Committee, Risk and Audit Committee, Nominating and Governance Committee, People and Compensation Committee, and Sustainability Committee.
[28] Signed on February 4, 2021 by the Government of Minas Gerais, State Prosecution Office, Federal Prosecution Office, Public Defender's Office of Minas Gerais and Vale.
[29] Commitments to pay and to make.

- In **Mariana**[30], the Company supports Renova Foundation in the performance of reparation programs, through its governance bodies, the provision of specialized professionals, and the execution of applicable accruals. The restitution of the right to housing was accelerated with the delivery of 315 solutions in 2022, a total of 441 housing solutions delivered, compared to the 584 services, as provided for by resettlement. In individual indemnities, more than 409 thousand people have agreements. Total disbursements on reparation reached R$ 28.1 billion, with another R$ 8.1 billion expected to meet the Renova Foundation's budget in 2023.

Dam management

- The main advances of Vale's **Upstream Dam De-Characterization Program** during the year were:
  - Agreement signed with Brazilian authorities that establishes a new schedule for the Program, aligned with the technical challenges identified so far, and which prioritizes project safety.
  - De-characterization of 5 upstream structures, totaling 12 of the 30 structures provided in the Program, an advance of 40%[31] by 2022, in view of the commitment undertaken by 2035.
  - Reduction of the emergency level of the B3/B4 dam, from 3 to 2, after the removal of almost 60% of the contained tailings. The completion of the de-characterization of this structure is expected in 2025.
  - Anticipation of the de-characterization of Dyke 2 in Itabira to 2023.
  - Delivery of the downstream containment structure[32] of Coqueirinho, which increases safety during the de-characterization activities of Dike Minervino and Cordão Nova Vista, in Itabira (MG), scheduled to 2029. In all, 4 downstream containment structures have already been built.
- In **dam safety management**, in addition to the changes in governance already reported, the following progress is highlighted:
  - Improvements in the safety conditions of 8 dams: Elefante (Rio Piracicaba), Borrachudo II (Itabira), B5/MAC (Nova Lima), Marés II (Belo Vale), Santana (Itabira), Paracatu (Catas Altas), Sul Inferior (Barão de Cocais) and Porteirinha (Santa Bárbara), all of them located in Minas Gerais. The structures had their emergency level protocols closed and received the respective DCE, which attests to their safety.
  - Improvement in the safety condition of the B3/B4 dam (Nova Lima), which reduced the emergency level from 3 to 2, and of Capitão do Mato (Nova Lima), which reduced the level from 2 to 1.
  - As part of the commitment to implement the GISTM (Global Industry Standard on Tailings Management), the GISTM Journey 100 program was established and, throughout the year, Vale worked to close the gaps identified through the self-evaluation carried out in 2021. By December 2022, Vale achieved adherence of around 90% to the requirements of the standard, which gives us confidence in meeting the implementation deadlines for the industry, in line with the ICMM deadlines[33].
- To reduce dependence on the use of dams, Vale has implemented **4 tailings filtration plants** in Brucutu, Itabira (Cauê and Conceição) and Vargem Grande, with safer and more sustainable processing processes.

[30] For more information, visit: www.fundacaorenova.org.
[31] Consider the number of structures decharacterized and to be decharacterized.
[32] Downstream Containment Structure, ECJ, is a structure designed to retain tailings in the event of upstream dam breach.
[33] International Council on Mining and Metals (ICMM), whose deadline established with the industry is that all tailings' facilities with classification of "Extreme" and "Very High" consequences shall comply by Aug/23.

Innovation

- The Company uses **innovation as a lever to become a reference in creating and sharing value**. In this context, the highlights of the year are:
  - The launch of the Integrated Remote Operation Center[34] in the Energy Transition Material business, to increase safety and productivity through integrated planning and execution of remote operations.
  - The expansion of the innovation hubs, which totaled eight units and operate in a network for the development and experimentation, and which accelerated the outcome of the culture of innovation and the fluency of operations in this area.
  - Creation of Vale Ventures, a vehicle for investments in pioneering startups, aimed at developing business models and cutting-edge technologies for Vale's operations, with a focus on decarbonization in the mining process, mining without waste, energy transition metals, and other technologies.

[34] Integrated Remote Operation Center – IROC.

People management

Vale works continuously to **be recognized as a company that seeks operational excellence, leads the transition to a low-carbon economy and generates social and economic progress**. The transformation of its organizational culture, the expansion of diversity, equity and inclusion in its staff, and its compensation strategy are essential to make the Company's aspirations feasible.

Cultural transformation

- The cultural transformation advanced with the full adherence of the strategy to the Company's purpose. The approach was centered on operations and around 1,740 leaders were trained (50% of the target audience).

- Digital actions on the main corporate platforms increased the opportunity to deepen the concepts of cultural transformation. The digital inclusion pilot project, for example, had more than 500 employees.

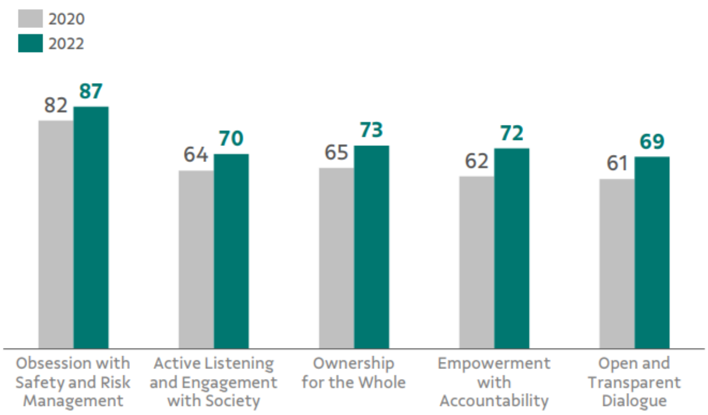
- Expansion of the network of influencers with groups of Culture Catalysts and Guardians of Purpose, from the operational technical level to executive leadership, which reinforce the transformation of culture in their daily interactions.

- Greater engagement in measuring the transformation – during the year, more than 24,000 employees gave their perception of the presence of key behaviors in their daily routine.

- Expansion of leadership development programs, with more than 2 thousand leaders of the first hierarchical levels trained.

- Vale management model, the VPS, is a culture put into practice. The model's maturity advanced by more than 25% in the company between 2020 and 2022, moving from an average indicator of 1.52 to 1.90, on a scale of 0 to 4.

Key behaviors – Vale's employees' perception (%)



Diversity and Inclusion

- Gender diversity is expanded, with the commitment to **double the representation of women in the workforce by 2025** (from 13% to 26%).
    - The participation of women in 2022 stood at 22.06%, an increase of 5,164 employees since 2019[35].
    - Hiring more than 1,200 women from the communities where Vale operates during the year through the Technical-Operational Vocational Training Program.

- In leadership[36], the goal of **increasing female participation from 12% to 26%** by 2025 is close to being achieved. The Company ended 2022 with 22.60% women in top management, a growth of 2.3 p.p compared to 2021[37].

- In terms of ethnic-racial equity, Vale is **committed to having at least 40% black leaders by 2026**, also promoting ethnic-racial equity at other hierarchical levels.

[35] When the commitment was made.
[36] Executive managers and above.
[37] When the goal was revised from 20% to 26%.

- In 2022, 32% of leadership was made up of black professionals, an increase of 3.2 p.p. compared to the previous year. To honor its commitment to the ethnic-racial agenda, Vale invests in career development programs for the community, employees, and market talents.

- The 2022 class of trainees in Brazil has 67% women and 71% self-declared blacks.

- Launch of the *Potencializando Talentos* programs, to promote the development of black and disabled employees, with the offer of 450 positions in the year, and professional qualification for 100 black women from communities in socially vulnerable situation.

- Adhesion to the *Mover – Movimento pela Equidade Racial*, a joint initiative with other 46 companies to promote opportunities for black people, reduce inequality e combat structural racism in the labor market.

- **Inclusion and ethics are intrinsic to the cultural transformation** of the Company. Among other initiatives, actions to combat harassment were intensified, such as the launch of the *Hub Contra o Assédio* and *Paradões* against harassment in operations around the world, with the participation of more than 19,000 employees.

Compensation

- Short-term compensation ("annual bonus") prioritizes strategic purposes to achieve the Company's ambitions. Through a model that benefits collective goals, the aim is to encourage mutual collaboration based on the key behavior "Owner's Feeling".
  - The panel of short-term goals for Chief Executive Officer and Executive Vice-Presidents was established with, respectively, 65%-75% of collective goals and 35%-25% of individual goals, according to the scope of each executive. In the collective block, 30%-40% are non-financial metrics and in ESG, and 35% are financial metrics.
  - The areas of Health, Safety, Geotechnics, Reparation, Compliance and Audit do not have financial and production metrics in their panels of short-term goals, preserving their independent performance.
- Long-term compensation is made up of the PAV[38] and Matching programs, which reinforce the culture of long-term performance, leverage the shareholding of executives, encourage a sense of ownership, and seek to align Management's priorities with the Shareholders' vision. The main changes to the programs in 2022 were:
  - Increase in the share of long-term compensation linked to ESG (environmental) from 20% to 25% as of 2022.
  - In the PAV, it was decided to include a "return on invested capital" metric with a weight of 25% starting in 2024. The measure encourages the value creation, in line with strategic objectives and shareholders' interests.
- There is a requirement of a minimum shareholding position for the Company's executives, through long-term programs.
- Malus and Clawback clauses are part of executive agreements. In view of exceptionally serious facts, the Board of Directors may suspend or request the return of short- or long-term compensation payments.

Workforce

The work of each employee is essential for Vale's success and growth. In December 2022, approximately 65 thousand own employees and 150 thousand third-party employees comprised the Company's staff.

Workforce by business unit

[38] Vale's Share Program.

Number of employees	Company employees 2022	Company employees 2021	Third-party employees 2022	Third-party employees 2021
Iron Solutions	41,816	44,235	59,373	60,921
Coal[39]	-	5,492	-	7,416
Energy Transition Materials[40]	13,318	12,903	18,901	18,778
Energy[2]	-	-	-	-
Corporate	9,382	9,636	72,557	101,199
Total	**64,516**	**72,266**	150,831	**188,314**

By geographical location

Number of employees	Company employees 2022	Company employees 2021	Third-party employees 2022	Third-party employees 2021
Brazil	53,341	55,067	136,467	161,924
South America (former Brazil)	41	153	173	113
North America	6,565	6,448	4,633	4,311
Europe	270	279	194	133
Asia	4,287	4,382	9,358	9,613
Oceania	12	10	6	6
Africa	0	5,927	-	12,214
Total	**64,516**	**72,266**	**150,831**	**188,314**

The number of third-party employees in 2021 was updated, from a total of 141,147 to 188,314 reflecting the expansion of the third-party concept in Brazil. Under revised and equalized criteria, the total number of third-party employees in 2022 suffered a reduction of approximately 20% compared to the total in 2021, mainly verified in support for corporate functions.

	2022	2021
Turnover rate	8.07%	7.97%

The turnover rate[41] is calculated based on data from Vale and its subsidiaries and reflects the termination rate for the year, i.e., a rate of 8.1% means that, for every 100 active employees in 2022, 8 employees had their employment contracts terminated.

[39] Sale of the Coal business.
[40] Refers to the number of Biopalma employees, which are no longer part of Vale's portfolio.
[41] The rate contemplates exclusively own employees.

Comments on operational and economic-financial performance

Iron Solutions[42]

Iron ore production totaled 308 Mt in 2022, 2% lower year-to-year, mainly due to (a) licensing delays at Serra Norte; and (b) jaspilite waste processing and operational performance at S11D. The decrease was partially offset by (a) the continued production ramp-up at Vargem Grande; (b) higher production via dry processing in Brucutu; and (c) higher third parties purchase.

The production of pellets totaled 32 Mt in 2022, in line with 2021, with an improvement mix of direct reduction pellets (49% of total production vs. 41% in 2021), leveraging on the higher-quality feed and taking advantage of better market premiums.

Energy Transition Materials[43]

Nickel production grew 6% in 2022 to 179 kt, mainly due to the stabilization of Sudbury operations following the 2021 workers' shutdown, as well as consistent and strong performance at Onça Puma. The increase was partially offset by lower feed availability due to the reconstruction of the PTVI furnace and the delay in the VBME ramp-up.

Copper production declined by 15%, to 253kt in 2022, due to extended maintenance at the Sossego mill during the first half of the year and additional maintenance required at Sossego and Salobo. The decline was partially offset by higher production in Canada due to the stabilization of the Sudbury mines and the recovery of copper from copper precipitates at Thompson, reducing waste as part of Vale's circular mining approach.

Portfolio optimization

Vale has simplified its flow of operations, allowing it to focus on its main assets and reducing cash drains, thus maintaining discipline in capital allocation. The year 2022 was marked by the responsible divestment of non-core assets, with emphasis on:

- Completion of (a) the sale of the 50% stake in California Steel Industries – CSI to Nucor Corporation; (b) the divestment of the Moatize coal mine and the Nacala Logistics Corridor to Vulcan Resources, after the materialization of all conditions precedent; and (c) the sale of the iron ore, manganese and logistics assets of the Midwest System to J&F Mineração Ltda., in addition to the transfer of obligations related to the take-or-pay logistics agreements.

- Execution, together with partners Posco and Dongkuk, of a binding agreement with ArcelorMittal for the sale of Companhia Siderúrgica do Pecém – CSP.

[42] The Company renamed its main operating segments starting from these financial statements. The operating segment previously named "Ferrous Minerals" is now disclosed as "Iron Solutions". There were no changes in the allocation criteria for these operating segments and, therefore, no adjustments were made to the comparative financial information.
[43] The Company renamed its main operating segments starting from these financial statements. The operating segment previously named "Base Metals" operating segment is now disclosed as "Energy Transition Materials". There were no changes in the allocation criteria for these operating segments and, therefore, no adjustments were made to the comparative financial information.

Economic-financial performance

Consolidated performance

Net operating income totaled R$ 226.5 billion in 2022, a fall of R$ 67.0 billion, when compared to 2021, reflecting more challenging market conditions and lower realized iron ore prices. The **costs and expenses**, including the repair of Brumadinho, totaled R$ 141.6 billion in 2022, in line with the 2021 total.

The **adjusted EBITDA from continuing operations** totaled R$ 102.1 billion in 2022, representing a fall of R$ 66.0 billion, as compared to R$ 168.1 billion recorded in 2021, mainly due to lower prices of iron ore.

Vale generated approximately US$ 5.7 billion in **free cash flow from operations** in 2022, US$ 14.3 billion lower than 2021, mainly due to lower proforma EBITDA. Vale carried out US$ 6.0 billion in share buyback in the year and distributed US$ 6.6 billion in dividends and interest on equity to its shareholders.

Vale ended the year with US$ 4.8 billion in cash and cash equivalents and short-term investments, gross debt, and leases of US$ 12.7 billion, therefore, with net debt of US$ 7.9 billion in 4Q22. Expanded net debt[44] was US$ 14.1 billion.

Iron Solutions

Adjusted EBITDA for the Iron Solutions segment was R$ 100.5 billion in 2022, R$ 68.7 billion lower than in 2021, mainly due to lower prices applied, due to the fall in the iron ore benchmark price.

Iron Solutions costs and expenses, without considering the effects of depreciation, totaled R$ 80.5 billion, R$ 2.1 billion higher than in 2021, mainly due to higher fuel costs, impacting the cost of freight and C1, being partially offset by the exchange rate.

The average realized price of iron ore fines, including CFR/FOB sales, was US$ 108.1/t in 2022, 23.5% below the value of US$ 141.4/t in 2021. The average price of pellets decreased from US$ 218.3/t in 2021 to US$ 188.6/t in 2022.

Energy Transition Materials

Adjusted EBITDA for Energy Transition Materials was R$ 12.9 billion in 2022, R$ 4.5 billion below the R$ 17.4 billion recorded in 2021, mainly due to (a) higher costs associated with Sossego maintenance shutdown; (b) costs of materials and services; and (c) fuel, which were partially offset by higher nickel prices in the year.

[44] On October 27, 2022, Vale revised the concept of Expanded Net Debt, seeking to be more in line with market practices and have an indicator that better informs management when making capital allocation decisions. The revised Expanded Net Debt represented an initial reduction of approximately US$ 6 billion and now considers: (a) net debt, leasing (IFRS 16) and currency swaps, and (b) provisions for reparation of Brumadinho and Mariana, whose annual cash commitments are more concentrated in the first years. Operational and regulatory commitments previously included, such as the Refis fiscal renegotiation program and the provision for de-characterization of upstream dams, are now excluded from the Expanded Net Debt concept. These commitments are expected to have a more stable and longer annual cash disbursement profile. The Expanded Net Debt target of $10 billion to $20 billion remains unchanged.

Accounting information

Consolidated Income Statement

R$ millions	2022	2021
Continuing operations		
Net operating revenue	226,508	293,524
Cost of goods sold and services rendered	(124,195)	(117,267)
Gross profit	**102,313**	**176,257**
Gross margin (%)	45.2%	60.1%
Selling and administrative expenses	(2,658)	(2,601)
Research and development expenses	(3,411)	(2,964)
Pre-operating and operational stoppage	(2,466)	(3,467)
Other operating expenses, net	(8,901)	(16,591)
Impairment reversal (impairment and disposals) of non-current assets, net	3,833	(2,352)
Operating income	**88,710**	**148,282**
Financial income	2,685	1,822
Financial expenses	(6,156)	(6,787)
Other financial items, net	14,849	22,777
Equity results and other results in associates and joint ventures	1,616	(6,947)
Income before income taxes	**101,704**	**159,147**
Income taxes	**(15,185)**	**(25,320)**
Net income from continuing operations	**86,519**	**133,827**
Net income attributable to noncontrolling interests	413	591
Net income from continuing operations attributable to Vale's shareholders	**86,106**	**133,236**
Discontinued operations		
Net income (loss) from discontinued operations	9,818	(12,484)
Loss attributable to noncontrolling interests	0	(476)
Net income (loss) from discontinued operations attributable to Vale's shareholders	**9,818**	**(12,008)**
Net income	**96,337**	**121,343**
Net income (loss) attributable to noncontrolling interests	413	115
Net income attributable to Vale's shareholders	**95,924**	**121,228**

Balance sheet – consolidate

R$ millions	2022	2021
Assets		
Current assets	81,009	119,332
Non-current assets held for sale	-	5,468
Non-current assets	75,104	80,275
Investments in associates and joint ventures	9,381	9,771
Intangibles	53,421	50,287
Property, plant, and equipment	234,472	233,995
Total	**453,387**	**499,128**
Liabilities	**258,493**	**302,070**
Current liabilities	72,478	82,836
Liabilities associated with non-current assets held for sale	-	1,978
Non-current liabilities	186,015	217,256
Equity	**194,894**	**197,058**
Equity attributable to Vale's shareholders	187,112	192,403
Equity attributable to noncontrolling interests	7,782	4,655
Total	**453,387**	**499,128**

Consolidated Statement of Cash Flows

R$ millions	2022	2021
Cash flow from operations	**95,793**	**178,815**
Interest on loans and borrowings paid	(4,067)	(3,820)
Cash paid on settlement of derivatives, net	(425)	(1,118)
Interest on participative shareholders' debentures paid	(1,835)	(2,317)
Payments related to Brumadinho event	(5,604)	(7,633)
Payments related to de-characterization of dams	(1,806)	(1,822)
Income taxes (including settlement program)	(24,068)	(23,607)
Net cash generated by operating activities from continuing operations	**57,988**	**138,498**
Net cash generated (used) in operating activities from discontinued operations	213	(1,732)
Net cash generated by operating activities	**58,201**	**136,766**
Cash flow from investing activities:		
Capital expenditures	(28,184)	(27,301)
Additions to investments	(1)	(237)
Proceeds from the sale of investments, net	3,062	3,835
Dividends received from associates and joint ventures	1,154	1,043
Short-term investment	1,309	2,671
Other investments activities, net	(982)	(2,823)
Net cash used in investing activities from continuing operations	**(23,642)**	**(22,812)**
Net cash used in investing activities from discontinued operations	(534)	(12,476)
Net cash used in investing activities	**(24,176)**	**(35,288)**
Cash flow from financing activities:		
Loans and borrowings from third-parties	6,764	5,165
Payments of loans and borrowings from third-parties	(11,764)	(10,759)

Payments of leasing	(1,154)	(1,152)
Dividends and interest on capital paid to shareholders	(34,092)	(73,112)
Dividends and interest on capital paid to noncontrolling interest	(65)	(175)
Shares buyback program	(30,640)	(29,121)
Net cash used in financing activities from continuing operations	**(70,951)**	**(109,154)**
Net cash used in financing activities from discontinued operations	(54)	(72)
Net cash used in financing activities	**(71,005)**	**(109,226)**
Increase (reduction) in cash and cash equivalents	**(36,980)**	**(7,748)**
Cash and cash equivalents in the beginning of the year	65,409	70,086
Effect of exchange rate changes on cash and cash equivalents	(3,657)	3,071
Cash and cash equivalents from subsidiaries sold, net	(61)	-
Cash and cash equivalents at end of the year	**24,711**	**65,409**
Cash flow from operating activities:		
Income before income taxes	101,704	159,147
Adjusted for:		
Equity results and other results in associates and joint ventures	(1,616)	6,947
Impairment and disposals (impairment reversal) of non-current assets, net	(3,833)	2,352
Provisions related to Brumadinho	2,078	1,140
Provision for de-characterization of dams	375	9,747
Depreciation, depletion and amortization	16,386	16,379
Financial results, net	(11,378)	(17,812)
Changes in assets and liabilities:		
Accounts receivable	(1,812)	4,604
Inventories	211	(2,572)
Suppliers and contractors	2,283	1,286
Other assets and liabilities, net	(8,605)	(2,403)
Cash flow from operations	**95,793**	**178,815**
Non-cash transactions:		
Additions to property, plant and equipment - capitalized loans and borrowing costs	240	318

Operating and economic-financial performance

Selected financial indicators

R$ millions	2022	2021
Net operating revenues	226,508	293,524
Total costs and expenses (ex-Brumadinho and de-characterization of dams)	(135,675)	(128,511)
Expenses related to Brumadinho event and de-characterization of dams	(5,956)	(14,379)
Adjusted EBIT from continuing operations	85,671	151,677
Adjusted EBIT margin (%)	37.8%	51.7%
Adjusted EBITDA from continuing operations	102,057	168,056
Net income from continuing operations attributable to Vale's shareholders	86,106	133,236

Information by business segment - 2022

R$ millions	Iron ore	Iron ore pellets	Other ferrous products and services	Iron Solutions	Nickel and other products	Copper	Energy Transition Materials	Other	Total of continuing operations	Discontinued operations - Coal	Total
Net operating revenue	145,714	32,251	2,425	**180,390**	34,226	9,235	**43,461**	2,657	**226,508**	2,308	**228,816**
Cost of goods sold and services rendered	(61,650)	(13,837)	(1,723)	**(77,210)**	(23,559)	(5,421)	**(28,980)**	(2,252)	**(108,442)**	(1,370)	**(109,812)**
Sales, administrative and other operating expenses	(266)	(7)	(20)	**(253)**	(197)	(101)	**(298)**	(10,797)	**(11,348)**	(57)	**(11,405)**
Research and development	(1,077)	(17)	(16)	**(1,110)**	(592)	(658)	**(1,250)**	(1,049)	**(3,409)**	(7)	**(3,416)**
Pre operating and operational stoppage	(1,763)	(109)	(94)	**(1,966)**	(2)	(65)	**(67)**	(13)	**(2,046)**	0	**(2,046)**
Dividends received and interest from associates and joint ventures	85	528	0	**613**	0	0	**0**	181	**794**	0	**794**
Adjusted EBITDA	**81,043**	**18,809**	**612**	**100,464**	**9,876**	**2,990**	**12,866**	**(11,273)**	**102,057**	**874**	**102,931**
Depreciation, depletion, and amortization	(6,939)	(2,303)	(507)	**(9,749)**	(4,704)	(1,698)	**(6,402)**	(235)	**(16,386)**	0	**(16,386)**
Equity results and other results in associates and joint ventures	(156)	711	(44)	**511**	1,505	0	**1,505**	(400)	**1,616**	0	**1,616**
Dividends received and interest from associates and joint ventures	(85)	(528)	0	**(613)**	0	0	**0**	(181)	**(794)**	0	**(794)**
Impairment reversal (impairment and disposals) of non-current assets, net	(775)	(71)	(71)	**(917)**	(92)	(78)	**(170)**	4,920	**3,833**	(2,867)	**966**
	73,088	**16,618**	**(10)**	**89,696**	**6,585**	**1,214**	**7,799**	**(7,169)**	**90,326**	**(1,993)**	**88,333**
Unallocated items:											
Financial results	0	0	0	**0**	0	0	**0**	0	**11,378**	14,603	**25,981**
Income taxes	0	0	0	**0**	0	0	**0**	0	**(15,185)**	(9)	**(15,194)**
Derecognition of noncontrolling interest	0	0	0	**0**	0	0	**0**	0	**0**	(2,783)	**(2,783)**
Net income	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**86,519**	**9,818**	**96,337**
Net income attributable to noncontrolling interests	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**413**	**0**	**413**
Net income attributable to Vale's shareholders	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**86,106**	**9,818**	**95,924**

Net income

Vale recorded a net income attributable to Vale's shareholders of R$ 95.9 billion in 2022, a negative variation of R$ 25.3 billion compared to the R$ 121.2 billion recorded in 2021, mainly due to lower EBITDA and the lower net financial result.

Financial result

Net financial results constituted a gain of R$ 11.4 billion, R$ 6.4 billion lower than in 2021. The result was mainly due to the reduction of gains with the reclassification of the cumulative translation adjustments to income statement. This effect was partially offset by the positive impact of participating debentures.

R$ millions	2022	2021
Financial income	**2,685**	**1,822**
Financial expenses	**(6,156)**	**(6,787)**
Loans and borrowings gross interest	(3,158)	(3,628)
Capitalized loans and borrowing costs	240	318
Others	(2,450)	(3,183)
Interest on REFIS	(788)	(294)
Other financial items, net	**14,849**	**22,777**
Derivative financial instruments	6,018	(153)
Currency and interest rate swaps	5,895	(891)
Others (commodities etc.)	123	738
Participative shareholders' debentures	3,285	(3,691)
Financial guarantees	2,488	1,536
Net foreign exchange gains (losses)	(2,195)	2,172
Reclassification of cumulative translation adjustments to the income statement	8,275	24,367
Indexation losses, net	(3,022)	(1,454)
Total	**11,378**	**17,812**

Income taxes

Vale recorded R$ 101.7 billion in income before income taxes. The application of income taxes (rate of 34%), tax benefits, and other effects recognized in the income, totaled R$ 15.2 billion in income taxation.

R$ millions	2022	2021
Income before income taxes	**101,704**	**159,147**
Income taxes at statutory rate (34%)	(34,579)	(54,110)
Adjustments that affect the taxes basis:		
Income tax benefit from interest on capital	2,828	1,400
Tax incentives	6,414	15,092
Equity results	431	896
Addition (reduction) of tax loss carryforward	(1,770)	1,408
Unrecognized tax losses of the year	4,718	3,629
Reclassification of cumulative translation adjustments to income statement	2,814	8,285
Other	3,203	110
Income taxes	**(15,185)**	**(25,320)**

Impairment reversal (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$ 3.8 billion in 2022, mainly due to (a) the reversal of onerous contracts after Midwestern System sale; and (b) the usual write-offs of out-of-operation assets.

R$ millions	2022	2021
Impairment reversal (impairment) and disposals of non-current assets	**3,833**	**(2,352)**
Vale Nouvelle-Calédonie S.A.S. ("VNC")	0	(549)
Manganese	(56)	(192)
Midwestern System	1,066	(440)
Onerous contracts - Midwestern System	4,554	(100)
Result of disposals of non-current assets	(1,731)	(1,071)
Impairment reversal (impairment) and disposals of non-current assets from discontinued operations	**(2,867)**	**(17,178)**

Investments in affiliates, joint ventures, and subsidiaries[45]

Vale has investments in affiliates, 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.

	Investments		Equity results in the Income Statement	
R$ millions	2022	2021	2022	2021
Associates and joint ventures				
Pelletizing plants	1,747	1,485	711	680
Aliança Geração de Energia	1,772	2,046	162	277
Aliança Norte Energia	553	586	(34)	(20)
California Steel Industries (CSI)	-	-	-	1,226
Companhia Siderúrgica do Pecém (CSP)	-	553	-	316
Mineração Rio do Norte (MRN)	-	-	-	(29)
MRS Logística (MRS)	2,656	2,334	421	394
VLI	2,234	2,278	(44)	(218)
Samarco S.A.	-	-	-	-
Others	419	489	51	27
Controlled				
Vale Holdings B.V	2,523	5,238	(504)	(153)
Vale International	57,877	75,923	33,484	10,007
Vale Canada	21,726	18,546	4,618	(611)
Salobo Metals	13,880	14,183	2,231	3,932
Minerações Brasileiras Reunidas (MBR)	2,086	2,425	167	1,314
Vale Malaysia Minerals	6,755	7,527	291	41
Others	8,345	10,027	2,315	(801)
Total	**122,573**	**143,640**	**43,869**	**16,382**

[45] The stand-alone financial statements of those entities may differ from the financial information reported herein, which is prepared considering Vale's accounting policies and using the most recent financial information available adjusted for the effects of significant transactions or events that occur between the date of the financial information and the date of the Company's financial statements.

Investments

In 2022, investments totaled US$ 5.4 billion, in line with the guidance, with US$ 1.6 billion invested in growth projects and US$ 3.8 billion in sustaining projects. Investments were 8.0% higher than in 2021, mainly due to increased investments in the Sol do Cerrado energy project and the iron ore projects, Serra Sul 120 Mtpy, Capanema and Briquettes Tubarão.

In 2023, Vale expects to invest US$ 6.0 billion, an increase of 10.2% compared to 2022, due to the capital contribution to the Morowali project in Indonesia and the advances in iron ore projects in Serra Sul 120 Mtpa and Capanema, in Brazil.

US$ millions	2022	2021
Growth projects	1,587	999
Sustaining projects	3,859	4,034
Total	**5,446**	**5,033**

Total investment per business area

US$ millions	2022	2021
Iron Solutions	3,102	3,012
Energy Transition Materials	1,859	1,862
Others[46]	485	159
Total	**5,446**	**5,033**

[46] Investments in maintaining operational capacity related to the Midwest System in the amount of US$ 5.0 million made in the year ended December 31, 2022 (2021: US$ 15.0 million), were reclassified from "Ferrous Minerals" to "Other".

Debt indicators

Gross debt totaled US$ 11.2 billion as of December 31, 2022, down by US$ 1.0 billion, when compared to December 31, 2021, US$ 12.2 billion. Expanded net debt increased to US$ 14.1 billion as of December 31, 2022, mainly due to lower EBITDA result by virtue of price and volume factors, which contributed to lower cash generation in 2022.

Debt indicators

US$ millions	2022	2021
Gross debt[47]	**11,181**	**12,180**
Lease (IFRS 16)	1,531	1,602
Gross debt and leases	**12,712**	**13,782**
Cash, cash equivalents and short-term investments	(4,797)	(11,905)
Net debt	**7,915**	**1,877**
Currency swaps[48]	(211)	724
Brumadinho provisions	3,312	3,537
Samarco & Renova Foundation provisions[49]	3,124	2,910
Expanded net debt[50]	**14,140**	**9,048**
Average debt maturity (years)	8.7	8.7
Cost of debt after hedge (% pa)	5.5	4.6
Total debt / adjusted LTM EBITDA (x)	0.6	0.4
Net debt / adjusted LTM EBITDA (x)	0.4	0.1
Adjusted LTM EBITDA / LTM gross interest (x)	32.3	46.7

Debt management

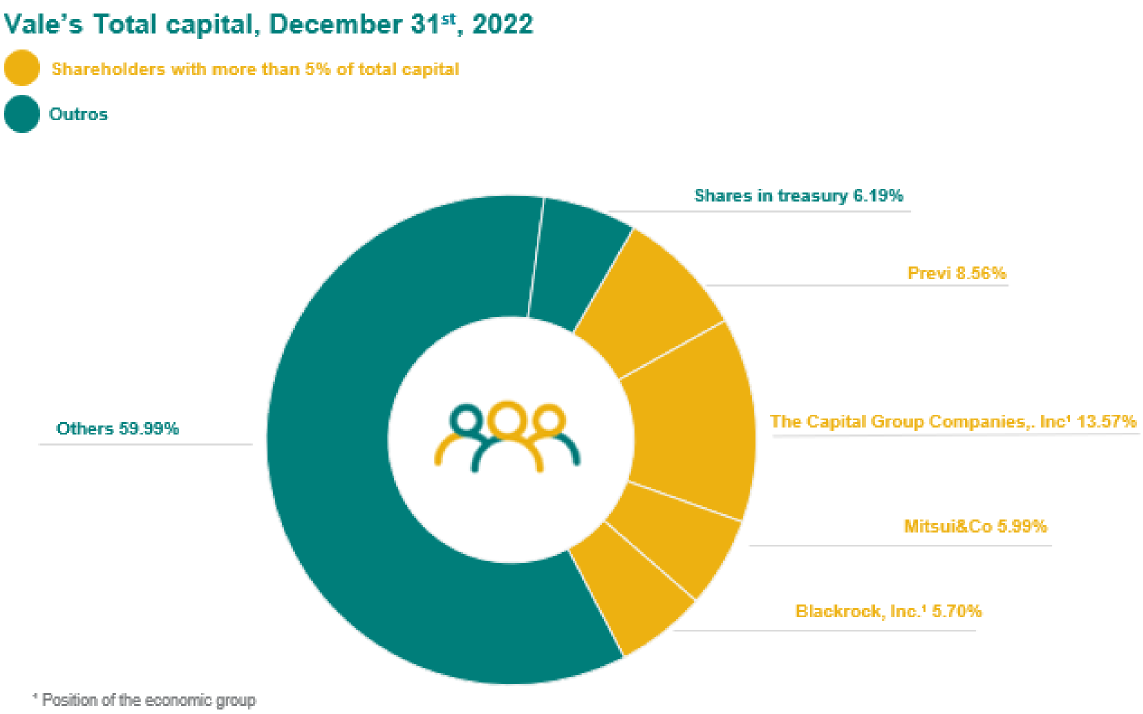
The debt management transactions below were carried out to optimize the Company's liabilities, reducing risks associated to liability management:

Month	Action
January	Withdrawal of R$ 2,361 million (US$ 425 million) from contracts with commercial bank, maturity in 2027, prepayment of US$ 200 million (R$ 993 million) of loan facility (maturity in 2023)
April	Loan facility amendment of R$ 1,903 million (US$ 400 million) with commercial bank (postponed maturity 2027).
May	Loan facility of R$ 967 million (US$ 200 million) with commercial bank (postponed maturity 2027).
June	Repurchase of bonds (tender offer), maturing in 2026, 2032, 2034, 2036, 2039 and 2042. A total of R$ 6.520 billion (US$ 1.291 billion) were repurchased.
July	Loan facility of R$ 805 million (US$ 150 million) with commercial bank (maturity 2027) and loan facility amendment of R$ 3.368 billion (US$ 1.000 billion) with commercial bank (delayed maturity 2029).
November	Loan facility of R$ 1.582 billion (US$ 300 million) with a Chinese development bank (maturity 2025) and withdrawal of R$ 1.055 billion (US$ 200 million) from a contract with a Japanese fostering bank.

[47] Does not include leases (IFRS 16).
[48] Includes interest rate swaps.
[49] Does not include provision for de-characterization of Germano dam in the amount of US$ 197 million in 2022.
[50] On October 27, 2022, Vale revised the concept of Expanded Net Debt, seeking to be more aligned with market practices and to have an indicator that better informs management in making capital allocation decisions. The revised Expanded Net Debt represented an initial reduction of approximately US$ 6 billion and now considers: (a) net debt, leasing (IFRS 16) and currency swaps, and (b) the provisions for Brumadinho and Mariana reparations, whose annual cash commitments are more concentrated in the first years. Operational and regulatory commitments previously included, such as the Refis tax renegotiation program and the provision for decommissioning upstream dams, are now excluded from the Expanded Net Debt concept. These commitments are expected to have a more stable and longer annual cash disbursement profile. The Expanded Net Debt target of $10 billion to $20 billion remains unchanged.

Shareholding structure and capital markets

As of December 31, 2022, the capital of Vale S.A. consisted of 4,778,889,251 common shares and 12 preferred shares of a special class (golden shares). In the year 2022, the Board of Directors approved the cancellation of 353,569,147 common shares of the company, considering 5,132,458,398 common shares on December 31, 2021.



Vale in the capital market

Shares issued by Vale are listed on B3 (ticker: VALE3), on NYSE (ticker: VALE, ADR Level 2) and on Latibex (ticker: XVALO). Vale's shares traded on B3 appreciated by 24.87% in 2022 when compared to 2021. Vale's market value (number of shares outstanding multiplied by the share price) was approximately R$ 368.3 billion at the end of 2022 fiscal year.

The average daily trading volume of shares was R$ 2,530 million in 2022, a reduction of 2.15% in relation to the volume traded in 2021. The shares issued by Vale are part of the main B3 indexes such as IBOV, IBRA, IBXL, IBXX, IGCT, IGCX, IGNM, IMAT, ITAG e MLCX.

Market information	2022	2021[51]
Closing price (R$/shares)	88.88	71.18
Volume average - VALE3 (R$ millions)	2,530	2,586
Price average - VALE3 (R$/share)	77.07	79.43
Market cap - VALE3 (R$ billions)	368.3	400.1
Book value (R$/share)	40.91	38.4
VALE3 Variation	24.87%	4.87%
Ibovespa Variation	4.69%	-11.93%

[51] Adjusted price after dividend distribution.

Shareholder remuneration

Distribution of earnings

The earnings with regards to the balance sheet for the 2022 fiscal year reached a total of R$ 5.69 per share, including interest on equity and dividends and were distributed as follows:

(a) On July 28, 2022, the Board of Directors approved dividends and interest on equity to its shareholders in the amount of US$ 3 billion (R$ 16,243 billion), the payment of which was made in full on September 1, 2022.

(b) On December 1, 2022, the Board of Directors approved the resolution of interest on equity to its shareholders in the amount of US$ 254 million (R$ 1,319 billion), the payment of which will be made in full on March 22, 2023[34].

(c) On February 16, 2023, the Board of Directors approved the distribution of compensation to shareholders on the form of dividends, in the amount of US$ 1.6 billion (R$ 8,130 billion), the payment of which will be made in full on March 22, 2023[52].

To access the Shareholder Compensation Policy and the history with information on the payment of dividends and interest on the stockholder's equity, access Vale's Investor Relations page at www.vale.com/investidores (section Shares, Dividends and Debt).

Share Buyback Program

- In May 2022, the Company reached the limit approved for the buyback program of up to 200 million shares. Of this total, 178,815,500 common shares and their respective ADRs were repurchased in 2022, corresponding to a total amount of US$ 3,251 billion (R$ 16,225 billion).

- In May 2022, the Company started a new buyback program of up to 500 million shares, which will be implemented over a period of 18 months. By December 31, 2022, the Company repurchased 178,627,077 common shares and their respective ADRs, corresponding to a total amount of US$ 2,786 billion (R$ 14.415 billion).

- As of December 31, 2022, the Company held 295,810,551 treasury shares through wholly owned subsidiaries and through the Controllership.

[52] March 29, 2023 is the estimated date for holders of American Depositary Receipts.

Business outlook for 2023[53]

Iron Solutions

Vale expects to produce 310-320 Mt of iron ore in 2023 and 36-40 Mt of iron ore agglomerates, which includes products such as pellets and briquettes. This guidance reflects Vale's strategy of optimizing value by increasing the production of high-quality products through the management of its extensive value chain. In 2026, Vale expects to increase its iron ore production to 340-360Mt and agglomerates to 50-55Mt, focusing on improving the quality of its portfolio and gradually returning to operations.

Energy Transition Materials

Nickel: Vale's nickel production guidance in 2023 is around 160-175 kt (reduction between 2% and 11% compared to 2022 production), especially due to the depletion of Ovoid, delay in the ramp-up of Voisey's Bay expansion project (Canada), and scheduled maintenance at Creighton and Onça Puma. 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 the ambition of promoting sustainable mining. In 2026, Vale's nickel production shall be between 230 - 245kta, reflecting replenishment projects in Canada, exposure to Pomalaa and Morowali, and the start-up of the second furnace at Onça Puma. As of 2030, nickel production shall be above 300kta, with input from projects such as Thompson Ultramafics, Sorowako HPAL, partnership projects and offtakes.

Copper: Vale's copper production guidance for 2023 is 335-370 kt (an increase between 32% and 46%, when compared to the 2022 production). Vale's strategy regarding this 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 development 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. In 2026, Vale's copper production is expected to be between 390-420 kta and above 900 kta as of 2030.

[53] 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 for hiring independent auditors

Vale's Board of Directors approved the 'Policy for Hiring Independent Auditors' in 2020. This establishes guidelines and principles to be followed in the process of contracting external audit services of the Company and its subsidiaries.

This policy aims at avoiding the existence of conflicts of interest, or loss of independence or objectivity of its independent auditors. It prohibits the procurement of consultancy services that may threaten the independence of the Independent Auditors during the term of the audit agreement.

In line with the best practices of corporate governance, all services provided by our certifying accountants 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 31, 2019 and that it is in compliance with this policy. In 2022, Vale's Board of Directors approved the renewal of the contract with PwC, which now includes audit services for the financial statements for the fiscal years 2024 to 2028.

The fees for the years ended December 31, 2022 and December 31, 2021, for Vale and its subsidiaries, were as follows:

Fees (R$ thousand)	2022	2021
Financial Audit	28,076	31,586
Audit Related Services*	359	453
Total External Audit Services	**28,434**	**32,039**

* These services are mostly procured for periods of less than one year.

Vale’s 4Q22 and 2022 Performance

February 17, 2023

VALE

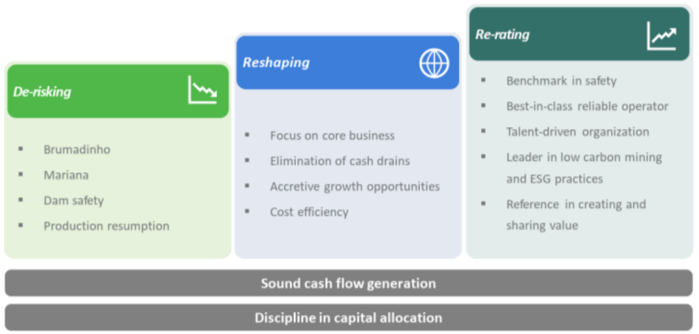
Disclaimer

“This presentation may include statements that present Vale's expectations about future events or results. All statements, when based upon expectations about the future involve various risks and uncertainties. Vale cannot guarantee that such statements will prove correct. These risks and uncertainties include factors related to the following: (a) the countries where we operate, especially Brazil and Canada; (b) the global economy; (c) the capital markets; (d) the mining and metals prices and their dependence on global industrial production, which is cyclical by nature; (e) global competition in the markets in which Vale operates; and (f) the estimation of mineral resources and reserves, the exploration of mineral reserves and resources and the development of mining facilities, our ability to obtain or renew licenses, the depletion and exhaustion of mines and mineral reserves and resources. To obtain further information on factors that may lead to results different from those forecast by Vale, please consult the reports Vale files with the U.S. Securities and Exchange Commission (SEC), the Brazilian Comissão de Valores Mobiliários (CVM) and in particular the factors discussed under “Forward-Looking Statements” and “Risk Factors” in Vale’s annual report on Form 20-F.

1. Opening remarks

We have materially de-risked Vale

Strategic roadmap 2019-2022



Strategy to the Vale of the future

promote
sustainable mining

- *People-driven*
- *Reliable operator*
- *Benchmark in safety and dam management*
- *Shared value*
- *Nature positive*

foster
low carbon solutions

- *Focused on high quality products and resources*
- *Energy transition materials*
- *Iron Solutions*
- *Circular mining*

stay
disciplined

- *Efficient capital allocation*
- *Attractive cash return to shareholders*
- *Strong balance sheet*
- *Cost and capex efficiency*

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

Business and Financial highlights

Focusing and strengthening the core	• New organizational design • Jerome Guillen announced as independent Director for the Energy Transition Materials business
Iron Solutions	• Strong iron ore fines sales, up 24% q/q • Strong price realization, All-in cost decline • Gelado project commissioning
Energy transition materials	• Strong nickel sales up 32% q/q, 6% production increase y/y • Sudbury mines with the highest quarterly production rates since 2Q19 • Salobo III project successful start-up • Long-term nickel sulfate supply agreement with General Motors (GM)
Sustainable mining	• Human Rights due diligence completed for 100% of operations in Brazil • Multi-company initiative to restore and protect 4 million ha of forests[1] • B3/B4 dam emergency level lowered from 3 to 2
Capital allocation	• US$ 1.8 billion dividend announced, with payment in March • 43% of current buyback program completed[2]

[1] In different Brazilian biomes over 20 years. [2] As of Feb 16, 2023. Approximately 213 million repurchased shares (43% of 3rd announced program)

Organizational improvements to better support business

New Executive Committee design

- Greater focus on core assets
- Accelerate management model implementation for greater operational reliability
- Foster execution and innovation in high-quality products
- Continuously promote technical excellence

Eduardo Bartolomeo
CEO

Executive Vice-Presidents

Alexandre Pereira
Projects

Alexandre D'Ambrosio
Corporate & External Affairs

Carlos Medeiros
Operations

Deshnee Naidoo
Energy Transition Materials

Gustavo Pimenta
Finance & Investor Relations

Marcello Spinelli
Iron Solutions

Maria Luiza Paiva
Sustainability

Marina Quental
People

Rafael Bittar
Technical

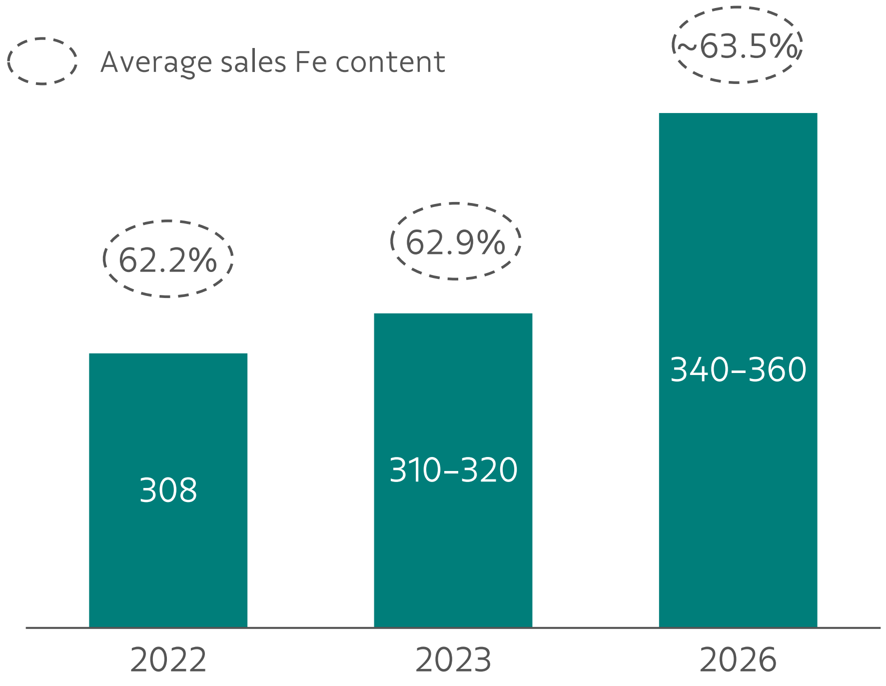
*Main changes

Strengthening our portfolio and building iron solutions

Focus on increasing high-quality volumes

Iron ore production

Mt



Supplying green iron solution for steelmaking

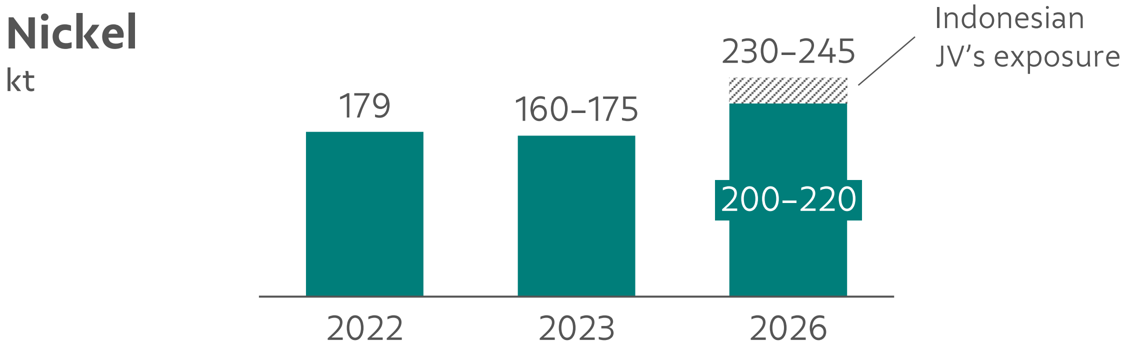
- Announcement of Mega Hubs in the Middle East for DR production
- Start-up of first green briquette plant in 1H23
- Improving concentration to deliver high-quality feedstock

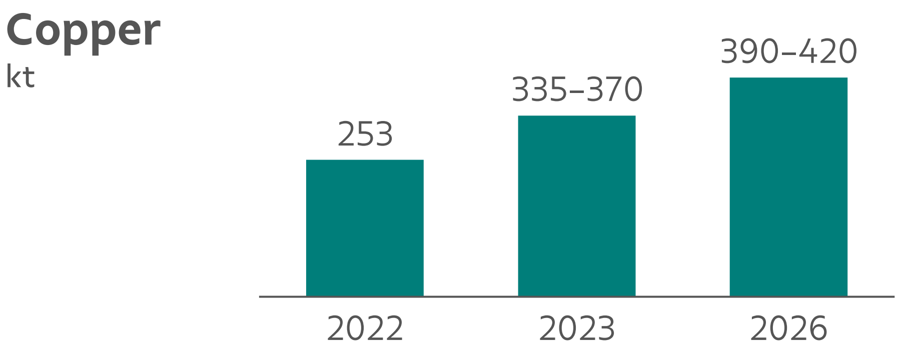
Progressing on Energy Transition Materials agenda

Progressing on the strategic agenda

- Key agreements with EV players: Northvolt, Tesla and GM
- LT agreement with GM to supply nickel sulfate from plant in Quebec
- Salobo 3 successful start up

Stabilizing operations for growth





A lasting safety approach

- ~80% decrease in high potential recordable injuries (N2) for critical activities
- TRIFR[1] at 1.12, the lowest since the beginning of the historical series
- 40% completion[2] of our Upstream Dam De-characterization Program
- ~90% adherence to the GISTM requirements[3]

- *B3/B4 dam had its emergency level reduced from 3 to 2 after successful safety improvements*

[1] Total Recordable Injury Frequency Rate. [2] Considering 12 out of 30 structures. [3]Global Industry Standard for Tailings Management, adherence related to the critical tailings storage facilities.

Sustainable mining at the core

Environmental

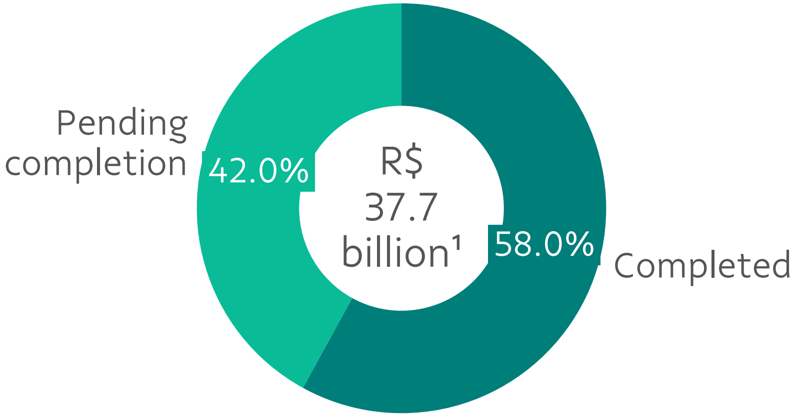
- Natural gas supply agreement for São Luis pelletizing plant (starting in 2024)
- Low-carbon agreements with clients (50% of our scope 3 emissions)
- +172,000 ha of forests protected / recovered since 2019

Non-exhaustive

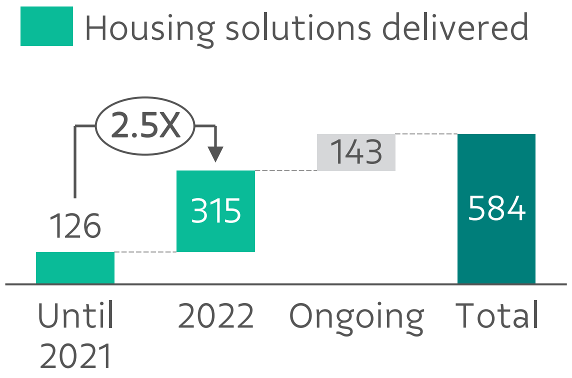
Social

- 100% of Brazilian operations with Human Rights due diligences
- 78% of priority communities in Brazil with relationship plans
- Tackling extreme poverty: initiatives for 30,000 people

Brumadinho Integral Reparation Program



Mariana's housing rights restoration²

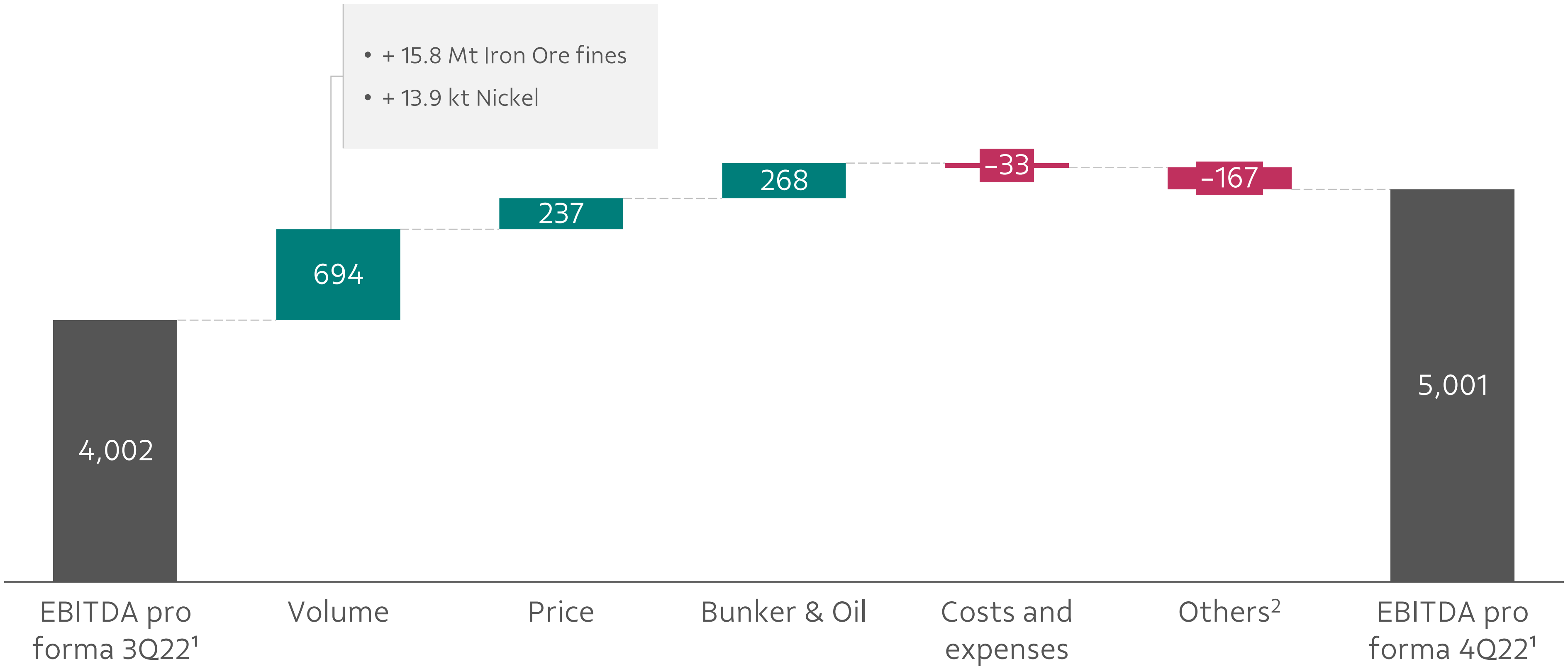


¹ As of February 2021. ² Source: www.fundacaorenova.com.

2. Financial Performance

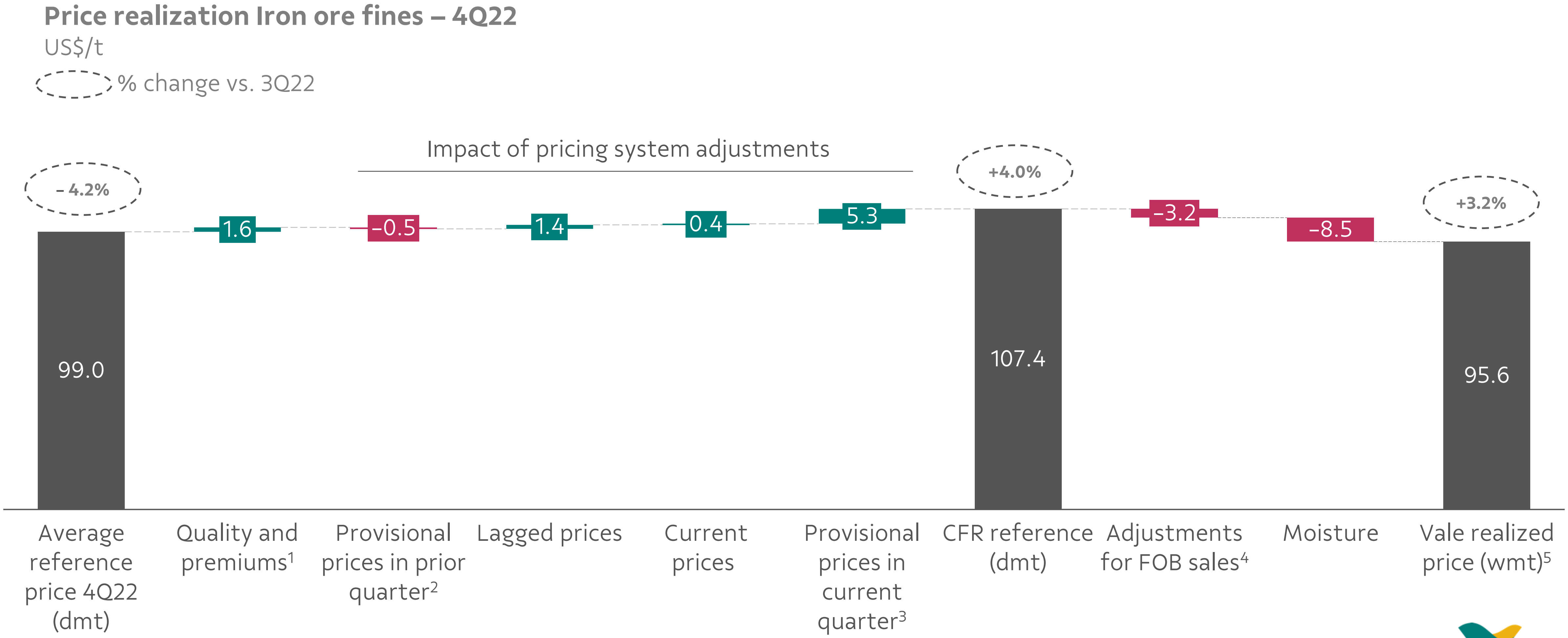
EBITDA $1bn higher on better volumes, prices and freight

EBITDA – 4Q22 vs. 3Q22
US$ million



[1] Net of Brumadinho expenses. [2] Includes US$ 40 million of FX effect, US$ -291 million of non-recurrent tax effect and US$ 83 million of dividends and others

Higher realized price despite lower reference price



[1] Includes quality (US$ 0.8/t) and premiums/discounts and commercial conditions (US$ 0.8/t). [2] Adjustment as a result of provisional prices booked in 3Q22 at US$ 95.2/t. [3] Difference between the weighted average of the prices provisionally set at the end of 4Q22 at US$ 116.3/t based on forward curves and US$ 99.0/t from the 4Q22 average reference price. [4] Includes freight pricing mechanisms of CFR sales freight recognition. [5] Vale´s price is net of taxes.

All-in cash cost improvement on better freight

Iron ore fines & pellets EBITDA break-even

US$/t

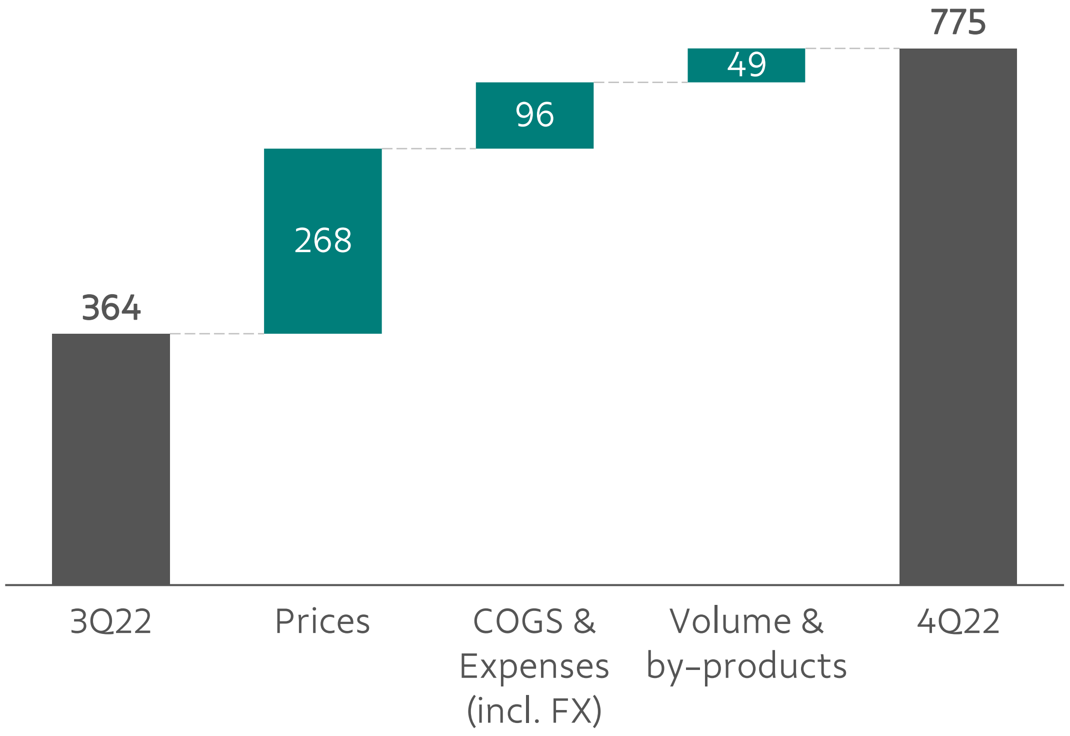
	2022	3Q22	4Q22	q/q main variation
Vale's C1 cash cost ex-third-party purchase cost	19.6	19.4	19.5	
Third-party purchases cost adjustments	2.8	3.4	2.2	• Lower third-party purchase volumes (-1.1 Mt) and lower share in total sales (6.3% vs. 9.5% in Q3)
Vale's iron ore cash cost (ex-ROM, ex-royalties), FOB	**22.5**	**22.8**	**21.7**	
Iron ore fines freight cost	20.2	22.4	18.8	• Lower bunker fuel costs (-US$ 2.8/t) • Seasonally lower spot affreightment (-US$ 0.5/t)
Iron ore fines distribution cost	2.0	2.2	1.9	
Iron ore fines expenses & royalties	6.9	5.8	7.2	• One-off tax settlement in Pará (US$ 2.7/t)[1]
Iron ore fines moisture adjustment	4.6	4.7	4.3	
Iron ore fines quality adjustment	(1.8)	(0.6)	(1.6)	• Higher IOCJ and BRBF sales
Iron ore fines EBITDA break-even (US$/dmt)	**54.4**	**57.3**	**52.3**	
Iron ore fines pellet adjustment	(5.1)	(6.0)	(3.8)	• Lower pellet premiums, after record in Q3 (-US$ 20/t of contractual premiums)
Iron ore fines and pellets EBITDA break-even (US$/dmt)	**49.3**	**51.3**	**48.5**	

All-in guidance 2023
US$47/t

[1] Considers the period of Jan-Sep/22.

Energy Transition Materials EBITDA 113% higher due to better prices across the board and lower costs in Nickel

Energy Transition Materials EBITDA [1] – 4Q22 vs. 3Q22
US$ million



Nickel realized price up 13%
Increase in reference price

Copper realized price up 32%
Increase in reference price and forward prices

Nickel sales up 32%
58 kt in 4Q22 vs. 44kt in 3Q22

Nickel unit COGS down 16%[2]

[1] Including marketing activities. [2]Unit COGS excluding marketing activities.

In Nickel, costs decreased q/q on the back of one-off event in 3Q22

Nickel all-in costs
US$/t

	2022	3Q22	4Q22	q/q main variation
COGS ex-third party	18,346	21,717	18,660	• Carryover of high-cost inventories in 3Q22; fixed cost dilution from higher nickel sales
COGS	19,351	23,214	19,577	
By-product revenues	(6,798)	(6,663)	(6,390)	
COGS after by-product revenues	**12,553**	**16,551**	**13,187**	
Other expenses[1]	847	705	1,017	• Maintenance expenses related to assets in C&M
Total costs	**13,400**	**17,256**	**14,204**	
Average aggregate premium/discount	40	(190)	250	• Higher share of Class II products in the mix
All-in costs (EBITDA breakeven)	**13,440**	**17,066**	**14,545**	

All-in guidance 2023
US$13,000/t

[1] Includes SG&A, R&D, pre-operational expenses and other expenses.

All-in unit cost was impacted by lower volumes in Copper

Copper all-in costs
US$/t

	2022	3Q22	4Q22	q/q main variation
COGS	6,304	5,170	6,264	• Lower volumes affecting fixed cost dilution
By-product revenues	(2,644)	(2,390)	(2,372)	
COGS after by-product revenues	**3,660**	**2,780**	**3,892**	
Other expenses[1]	970	952	1,201	• Lower volumes affecting dilution of expenses
Total costs	**4,630**	**3,732**	**5,093**	
TC/RCs penalties, premiums and discounts	461	452	470	
All-in costs (EBITDA breakeven)	**5,091**	**4,184**	**5,563**	
All-in costs (EBITDA breakeven) ex-Hu'u	**4,502**	**3,638**	**4,932**	

All-in guidance 2023
US$3,200/t

[1] Includes SG&A, R&D, pre-operational expenses and other expenses.

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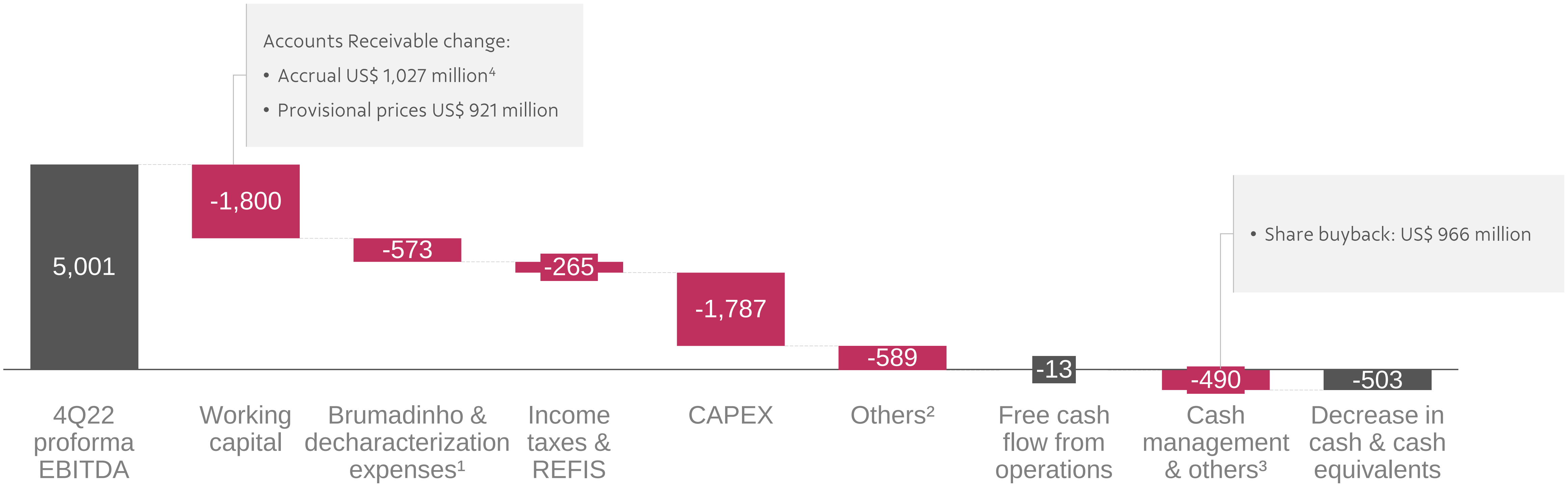
Higher sales and prices led to seasonal increase in accounts receivable

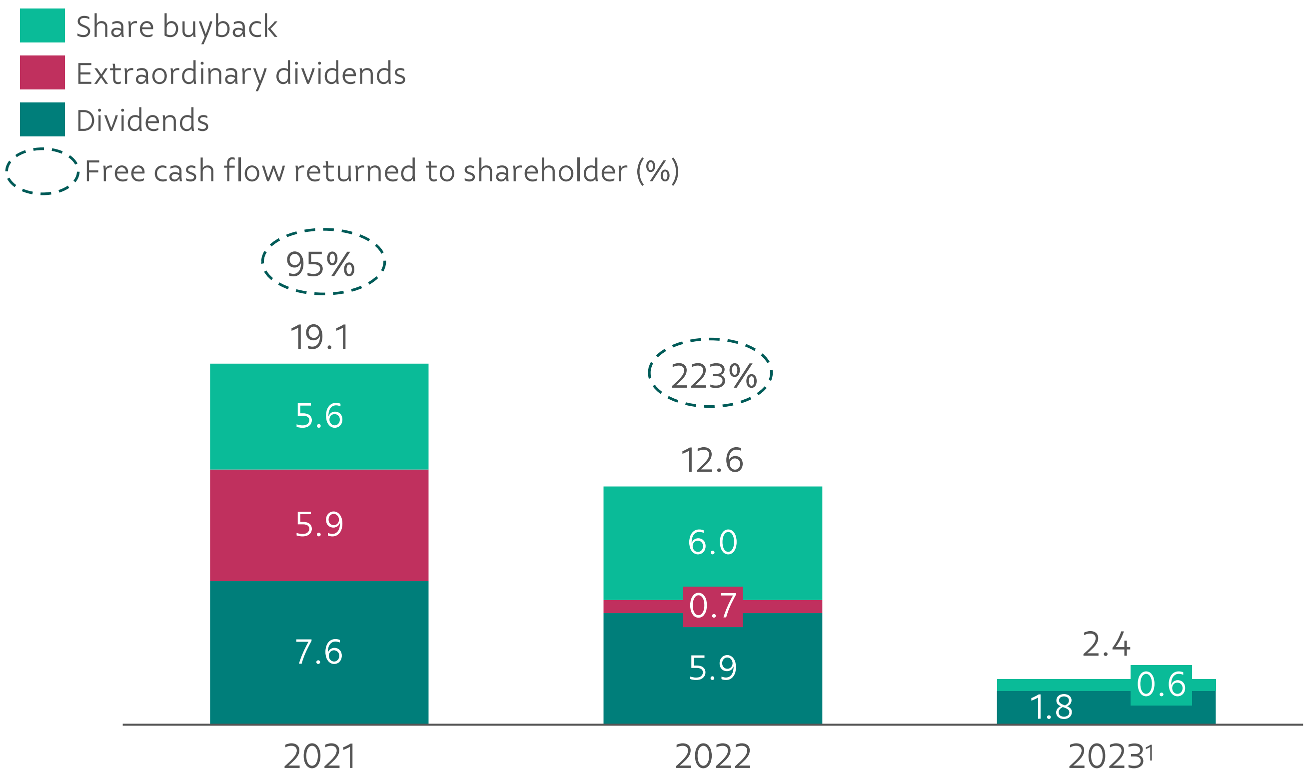
Free cash flow – 4Q22
US$ million



[1] Includes US$ 389 million of disbursement of Brumadinho and de-characterization provisioned expenses and US$ 184 million of Brumadinho incurred expenses. [2] Includes interest on loans, derivatives, leasing, dividends paid to noncontrolling interest, shareholders debentures, payments to Renova and others. [3] Includes US$ 966 million of share buyback, US$ 500 million of debt funding and US$ 24 million of debt repurchased. [4] Includes volume and price variation

Disciplined capital allocation focused on shareholder return

Shareholder remuneration
US$ billion



25% of dividend yield accumulated in 2 years[2]

13% of outstanding shares bought since April 2021

[1] Includes dividends to be paid in Mar/23 and Share buyback up to Feb 16th , 2023. [2] Considers ~US$22 billion of dividends and Vale´s share price on December 30th, 2020. Includes dividends to be paid in Mar/23.

Closing remarks

A fit-for-purpose organization to deliver on Vale's long-term strategy

Taking actions to serve a growing market demand for quality products

Delivering on new projects for the energy transition

Capital discipline and shareholders' return remain a priority

VALE

Vale's performance in Q4 and 2022

Rio de Janeiro, February 16th, 2023. *"In 2022, we made significant progress on our strategic priorities. In safety, we are proud to have eliminated 40% of our upstream structures and removed the B3/B4 dam from the high-risk level. In Iron Solutions, we advanced on our path to becoming the supplier of choice for high-quality products, leveraging Vale's unique mineral endowment and capitalizing on the decarbonization trend of the steel industry. On that, we have announced hubs to develop green solutions in the Middle East and secured MoUs with clients representing around 50% of the our scope 3 emissions, expanding the offer of low-carbon products such as high-grade pellets and briquettes. On operations, we took concrete actions to deliver on our long-term growth guidance by advancing on the critical milestones we had laid out for the year. In the Southeast, the tailings filtration plants are ramping up, and in the North, we improved orebody knowledge at S11D and, in Q4, commissioned the Gelado project. In the Energy Transition Materials business, the operations at Sudbury are now stable, and Onça Puma had its best annual production in the last five years. On Copper, performance has resumed after major maintenance in Salobo and Sossego, and we are off to a great start in 2023. Additionally, our robust pipeline of accretive growth progressed with the successful start-up of Salobo III, the approval of Onça Puma 2nd furnace and the signing of partnerships in Indonesia. We have also re-designed the Executive Committee, ensuring a fit-for-purpose organizaton with a greater focus on our operations and on developing sustainable solutions for the global energy transition. We strongly believe these actions will continue to uniquely position Vale to benefit from the secular trends of the energy revolution impacting the mining industry, creating sustainable long-term value for all stakeholders,"* commented Eduardo Bartolomeo, Chief Executive Officer.

Selected financial indicators

US$ million	4Q22	3Q22	4Q21	2022	2021
Net operating revenues	11,941	9,929	13,105	43,839	54,502
Total costs and expenses (ex-Brumadinho and de-characterization of dams)	(7,895)	(6,730)	(7,228)	(26,253)	(23,807)
Expenses related to Brumadinho event and de-characterization of dams	(375)	(336)	(2,115)	(1,151)	(2,576)
Adjusted EBIT from continuing operations	3,726	2,891	3,904	16,589	28,309
Adjusted EBIT margin (%)	31%	29%	30%	38%	52%
Adjusted EBITDA from continuing operations	4,626	3,666	4,726	19,760	31,343
Adjusted EBITDA margin (%)	39%	37%	36%	45%	58%
Proforma adjusted EBITDA from continuing operations[1]	5,001	4,002	6,857	20,911	33,963
Net income from continuing operations attributable to Vale's shareholders	3,724	4,455	5,352	16,728	24,736
Net debt [2]	7,915	6,980	1,877	7,915	1,877
Capital expenditures	1,787	1,230	1,751	5,446	5,033

[1] Excluding expenses related to Brumadinho and donations associated with COVID-19.

[2] Including leases (IFRS 16).

Highlights

Business Results

- Proforma adjusted EBITDA from continued operations of US$ 5.0 billion in Q4, US$ 1 billion higher q/q, mainly reflecting the higher iron ore sales volumes and higher realized prices in nickel and copper. Proforma adjusted EBITDA from continued operations of US$ 20.9 billion in 2022, 38% lower than 2021 mainly due to 23.6% lower iron ore fines realized prices.

- Free Cash Flow from Operations of US$ 5.7 billion in 2022, vs. US$ 20.0 billion in 2021 due to lower EBITDA.

Disciplined capital allocation

- Capital expenditures of US$ 1.8 billion in Q4, including growth and sustaining investments, up US$ 557 million q/q, but flat y/y, following usual seasonality. Capital expenditures of US$ 5.4 billion in 2022, 8% higher than 2021, due to investments in the Sol do Cerrado solar farm, Serra Sul 120, Capanema and Tubarão Briquette iron ore projects.

- Gross debt and leases of US$ 12.7 billion as of December 31, 2022, US$ 508 million higher q/q, largely due to lower free cash flow from operations and further execution of the share buyback program.

- Expanded Net Debt of US$ 14.1 billion, up US$ 856 million q/q, in line with targeted leverage of US$ 10-20 billion.

Value creation and distribution

- US$ 12.6 billion paid in dividends, interest on capital and share repurchases in 2022. Since 2020, Vale has returned US$ 35 billion to shareholders, representing around 46% of its market cap[1].

- US$ 1.8 billion in dividends to be paid in March 2023, considering Vale's ordinary dividend policy applied to 2H22 results.

- 3rd share buyback program now 43% complete, with a disbursement of US$ 3.4 billion to repurchase 213 million shares[2]. With the three buyback programs, earnings and dividends on a per share basis have each increased 15% since April 2021.

2022 in review

Focusing and strengthening the core

- Progressing in the electric vehicles value chain:
  - Multi-year agreement to supply low-carbon nickel to Swedish lithium-cell producer Northvolt AB signed in March.
  - Affirmed nickel supply contract with Tesla in May.
  - Long-term nickel supply agreement with General Motors signed in November. Pursuant to the agreement, Vale will supply battery grade nickel sulfate, equivalent to 25ktpy of contained nickel starting in 2026.

- Enhancing the iron solutions business:
  - Vale signed three agreements in October for the development of Mega Hubs, industrial complexes to supply green solutions to the steel industry.
  - MoU with Nippon Steel Corporation, Hunan Iron & Steel Group[3], and SHS, among others, to pursue ironmaking solutions focused on the carbon-neutral steelmaking process, signed during 2022.
  - In July, Vale announced the start of construction of the Zhongzhai Pre-blending Project, a partnership with Shagang and Ningbo Zhoushan Port. Vale is committed to supplying part of the blended cargos, with high-quality products such as BRBF, and to provide technical assistance on the blending activities.
  - Tecnored started the construction of the R$ 1.6 billion-plant in April. Start-up is expected in 2025, with initial capacity of 250 ktpy of green pig iron and potentially reaching 500 ktpy in the future.

- Advancing the project pipeline:
  - Approval of the Morowali project (formerly Bahodopi nickel project) in July. The project is expected to start-up in 2025. PTVI will own 100% of the mine while the RKEF project is a partnership between PTVI (49%) and two Chinese partners with 73 ktpy capacity.

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[1] Market capitalization of Dec 30th, 2022.
[2] As of the date of this report. Related to the April 2022 3rd buyback program for a total of 500 million shares. As reflected in our 4Q22 Financial Statement, until Dec 30, 2022, the Company had repurchased approximately 188 million ordinary shares in the total amount of US$ 2.9 billion.
[3] Former Hunan Valin Iron & Steel Group Co., Ltd.

- PTVI and Huayou signed binding agreements on the Pomalaa Nickel Project[4] to build an HPAL project associated with PTVI's Pomalaa nickel resources. The project is expected to start-up in 2025 with a production capacity of up to 120 ktpy. Ford Motor Company signed a memorandum of understanding with PTVI and Huayou to join the Pomalaa nickel project to create a three-party relationship.
- PTVI and Huayou signed a Heads of Agreement in September to build a 60-ktpy HPAL project to process limonite ore from the Sorowako mine.
- Approval of the Onca Puma 2nd furnace project with start-up expected in 2025, adding 12-15ktpy of nickel to our portfolio. The project leverages Onca Puma's existing infrastructure, and once complete is expected to decrease unit production costs for the overall Onca Puma complex by 15%.
- Salobo III project successfully commenced at the end of 2022. The project will add 30-40 ktpy of copper production and it is expected to achieve full capacity in 4Q24.
- VBME construction progressing in line with our revised forecast, ending the year with 81% physical completion. The project is expected to achieve full capacity in 1Q24.
- Northern System 240 Mtpy (mine/plant front) and Gelado projects commissioned in Q4, supporting a gradual increase of Northern System iron ore production in 2023.

• Responsible divestment of non-core assets, totaling 9 deals in 5 countries since 2019, eliminating expenditures of up to US$ 2.0 billion per year. In 2022, Vale:

- Concluded the sale of (i) the 50% stake in California Steel Industries; (ii) the Moatize coal mine and the Nacala Logistic Corridor; and (iii) the iron ore, manganese, and logistics assets of the Midwestern System.
- Signed binding agreement for the sale of Companhia Siderúrgica do Pecém – CSP to ArcelorMittal. Closing expected in 1Q23.

• Reorganization of Energy Transition Materials operations in Brazil to combine copper and nickel assets into two entities announced in September.

• New design of Vale's top leadership to accelerate the achievement of strategic objectives, supporting the development and longevity of the company's portfolio and strengthening Vale's second line of defense and risk management model.

Promoting sustainable mining

• To reduce scope 1 and 2 emissions, Vale: (i) entered into an agreement to enable the supply of natural gas to the São Luís Plant, in Maranhão, starting in 2024, consolidating the use of this fuel in all its pellet plants, (ii) started operating the Sol do Cerrado, one of the largest solar farms in Latin America with 766 MWp of capacity, (iii) advanced the electrification of the operational fleet through renewable sources, with battery-powered off-road trucks and the second 100% battery-powered locomotive.

• Creation of Vale Ventures to invest approximately US$100 million in startups that are focused on decarbonization initiatives within the mining process, mining without waste, energy transition metals and other technologies.

• Addition of 172,000 hectares of forest since 2019, or around 34.4% of the long-term target.

• "Biomas" project launched by Vale and other major companies in partnership to restore and protect 4 million hectares of native forests in different Brazilian biomes over 20 years.

• Vale signed an agreement with the indigenous communities Xikrin do Cateté and Kayapós in the state of Pará and with the Pataxó and Pataxó Hã-Hã-Hãe communities, affected by the Brumadinho dam collapse.

• Human rights due diligence performed in 76% of Vale's operations (including 100% of operations in Brazil).

[4] PTVI will own 100% of the mine and has a call option to acquire up to 30% of the HPAL project upon mechanical completion.

- Brumadinho Integral Reparation Agreement 58% executed. Since 2019, US$ 7.5 billion have been disbursed[5], with another US$ 1.6 billion expected for 2023.
- Restitution of the right to housing in Mariana with a total of 441 housing solutions delivered.
- 12 upstream structures were eliminated by the end of 2022, representing 40% of Vale's Dam De-characterization Program.
- B3/B4 dam had its emergency level reduced from 3 to 2, after successful safety improvements, an important milestone in the journey to eliminate critical safety conditions in dams by 2025.
- 8 structures received stability condition declarations in 2022, with emergency level removed.

[5] Includes incurred expenses.

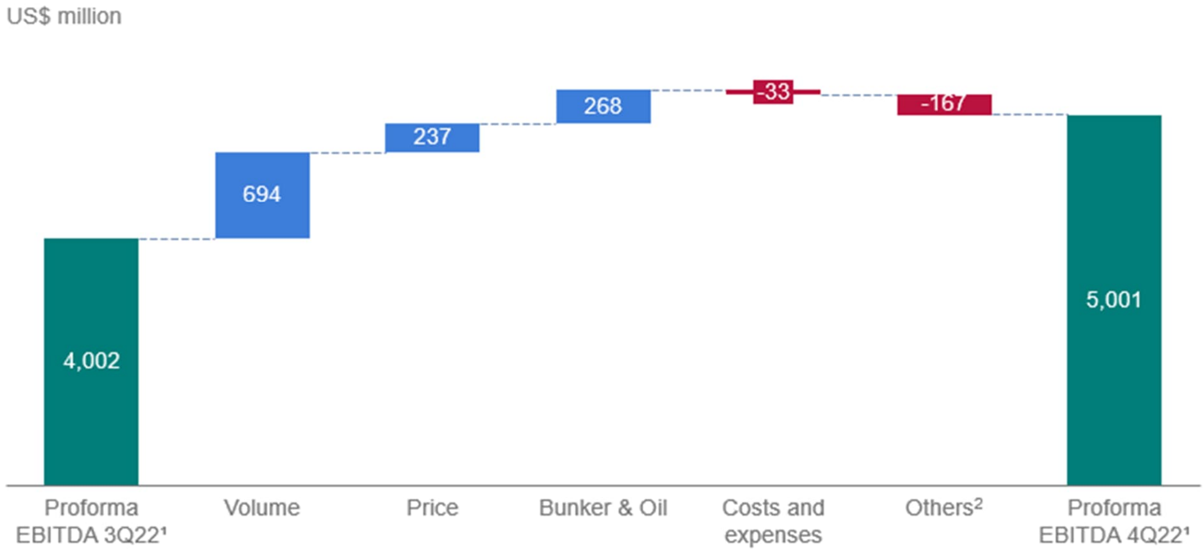
Adjusted EBITDA

Adjusted EBITDA

US$ million	4Q22	3Q22	4Q21	2022	2021
Net operating revenues	11,941	9,929	13,105	43,839	54,502
COGS	(7,155)	(6,301)	(6,494)	(24,028)	(21,729)
SG&A	(148)	(119)	(131)	(515)	(481)
Research and development	(218)	(170)	(177)	(660)	(549)
Pre-operating and stoppage expenses	(125)	(89)	(147)	(479)	(648)
Expenses related to Brumadinho event & de-characterization of dams	(375)	(336)	(2,115)	(1,151)	(2,576)
Expenses related to COVID-19 donations	-	-	(16)	-	(44)
Other operational expenses	(249)	(51)	(263)	(571)	(356)
Dividends and interests on associates and JVs	55	28	142	154	190
Adjusted EBIT from continuing operations	**3,726**	**2,891**	**3,904**	**16,589**	**28,309**
Depreciation, amortization & depletion	900	775	822	3,171	3,034
Adjusted EBITDA from continuing operations	**4,626**	**3,666**	**4,726**	**19,760**	**31,343**
Proforma Adjusted EBITDA from continuing operations[1]	**5,001**	**4,002**	**6,857**	**20,911**	**33,963**
Discontinued operations - Coal	-	-	102	171	(189)
Adjusted EBITDA total	**4,626**	**3,666**	**4,828**	**19,931**	**31,154**
Proforma Adjusted EBITDA total[1]	**5,001**	**4,002**	**6,959**	**21,082**	**33,774**

[1] Excluding expenses related to Brumadinho and COVID-19 donations.

Proforma EBITDA - 4Q22 vs. 3Q22



[1] Net of Brumadinho expenses. [2] Includes a positive effect of FX of US$ 40 million, a negative impact of non-recurrent tax of US$ 291 million and a positive impact of US$ 83 million related to dividends and others

Sales & price realization

Volume sold - Minerals and metals

'000 metric tons	4Q22	3Q22	4Q21	2022	2021
Iron ore fines	81,202	65,381	81,749	260,663	270,935
ROM	1,963	3,668	607	8,216	2,052
Pellets	8,789	8,521	10,351	33,164	32,306
Nickel	58	44	45	181	182
Copper	72	71	74	244	284
Gold as by-product ('000 oz)	73	79	77	277	340
Silver as by-product ('000 oz)	533	346	352	1,611	1,399
PGMs ('000 oz)	54	65	33	215	173
Cobalt (metric ton)	927	569	483	2,361	2,017

Average realized prices

US$/ton	4Q22	3Q22	4Q21	2022	2021
Iron ore fines Vale CFR reference (dmt)	99.0	103.3	109.6	120.2	159.5
Iron ore fines Vale CFR/FOB realized price	95.6	92.6	107.2	108.1	141.4
Pellets CFR/FOB (wmt)	165.6	194.3	182.6	188.6	218.3
Nickel	24,454	21,672	19,088	23,669	18,004
Copper	8,337	6,479	10,166	7,864	9,313
Gold (US$/oz)	1,677	1,748	1,795	1,785	1,768
Silver (US$/oz)	21.88	17.19	21.32	20.89	23.87
Cobalt (US$/t)	44,980	49,228	63,079	58,865	51,907

Costs

COGS by business segment

US$ million	4Q22	3Q22	4Q21	2022	2021
Iron Solutions[1]	5,079	4,317	4,717	16,755	15,623
Energy Transition Materials[2]	1,965	1,882	1,580	6,605	5,415
Others	111	102	197	668	691
Total COGS of continuing operations[3]	**7,155**	**6,301**	**6,494**	**24,028**	**21,729**
Depreciation	875	752	783	3,049	2,857
COGS of continuing operations, ex-depreciation	**6,280**	**5,549**	**5,711**	**20,979**	**18,872**

[1] The Company renamed its main operating segments starting from these financial statements. The operating segment previously named "Ferrous Minerals" is now disclosed as "Iron Solutions". There were no changes in the allocation criteria for these operating segments and, therefore, no adjustments were made to the comparative financial information

[2] The Company renamed its main operating segments starting from these financial statements. The operating segment previously named "Base Metals" operating segment is now disclosed as "Energy Transition Materials". There were no changes in the allocation criteria for these operating segments and, therefore, no adjustments were made to the comparative financial information.

[3] COGS currency exposure in 4Q22 was as follows: 56.3% USD, 37.0% BRL, 6.4% CAD and 0.3% Other currencies.

Expenses

Operating expenses

US$ million	4Q22	3Q22	4Q21	2022	2021
SG&A	148	119	131	515	481
Administrative	121	103	116	430	401
Personnel	45	42	42	185	170
Services	44	28	39	125	107
Depreciation	9	9	12	41	42
Others	23	24	23	79	82
Selling	27	16	15	85	80
R&D	218	170	177	660	549
Pre-operating and stoppage expenses	125	89	147	479	648
Expenses related to Brumadinho event and de-characterization of dams	375	336	2,115	1,151	2,576
Expenses related to COVID-19 donations	-	-	16	-	44
Other operating expenses	249	51	263	571	356
Total operating expenses	**1,115**	**765**	**2,849**	**3,376**	**4,654**
Depreciation	25	23	38	122	177
Operating expenses, ex-depreciation	**1,090**	**742**	**2,811**	**3,254**	**4,477**

Brumadinho

Impact of Brumadinho and De-characterization in 4Q22

US$ million	Provisions balance 30sep22	EBITDA impact	Payments	FX and other adjustments[2]	Provisions balance 31dec22
De-characterization	3,454	-	(102)	26	3,378
Agreements & donations[1]	3,231	133	(287)	235	3,312
Total Provisions	**6,685**	**133**	**(389)**	**261**	**6,690**
Incurred Expenses and others	-	242	(184)	-	58
Total	**6,685**	**375**	**(573)**	**261**	**6,748**

[1] Includes Integral Reparation Agreement, individual, labor and emergency indemnifications, tailing removal and containment works.

[2] Includes foreign exchange, present value and other adjustments.

Impact of Brumadinho and De-characterization from 2019 until 4Q22

US$ million	EBITDA impact	Payments	PV & FX adjust [2]	Provisions balance 31/dec/22
De-characterization	5,038	(1,138)	(522)	3,378
Agreements & donations[1]	8,658	(5,002)	(344)	3,312
Total Provisions	**13,696**	**(6,140)**	**(866)**	**6,690**
Incurred expenses	2,510	(2,510)	-	-
Others	180	-	-	58
Total	**16,328**	**(8,650)**	**(866)**	**6,748**

[1] Includes Integral Reparation Agreement, individual, labor and emergency indemnifications, tailing removal and containment works.
[2] Includes foreign exchange, present value and other adjustments

Cash outflow of Brumadinho & De-characterization commitments[1,2]:

US$ million	2022 disbursed	2023	2024	2025	2026	2027	Yearly average 2028-2035[3]
De-characterization	0.3	0.4	0.6	0.5	0.5	0.4	0.2
Integral Reparation Agreement & other reparation provisions	1.1	1.2	1.1	0.8	0.6	0.3	0.3[4]
Incurred expenses	0.6	0.4	0.4	0.3	0.2	0.1	-
Total	**2.0**	**2.0**	**2.1**	**1.6**	**1.3**	**0.8**	**-**

[1] Estimated cash outflow for 2023-2035 period based on a BRL-USD exchange rate of 5.2177.
[2] Amounts stated without discount to present value and net of judicial deposits, inclusive of inflation adjustments.
[3] Estimated annual average cash flow for de-characterization provisions in the 2028-2035 period is US$ 192 million per year.
[4] Disbursements related to the Integral Reparation Agreement end in 2028.

Net income

Reconciliation of proforma EBITDA to net income

US$ million	4Q22	3Q22	4Q21	2022	2021
EBITDA Proforma	**5,001**	**4,002**	**6,959**	**21,082**	**33,774**
Brumadinho event and de-characterization of dams & COVID-19 donations	(375)	(336)	(2,131)	(1,151)	(2,620)
EBITDA Coal (Discontinued operation)	-	-	(102)	(171)	189
Adjusted EBITDA from continuing operations	**4,626**	**3,666**	**4,726**	**19,760**	**31,343**
Impairment & disposal of non-current assets	(177)	(40)	(205)	773	(426)
Dividends received	(55)	(28)	(142)	(154)	(190)
Equity results and net income (loss) attributable to noncontrolling interests	53	89	(1,010)	223	(1,379)
Financial results	(658)	2,347	3,158	2,268	3,119
Income taxes	835	(804)	(353)	(2,971)	(4,697)
Depreciation, depletion & amortization	(900)	(775)	(822)	(3,171)	(3,034)
Net income from continuing operations attributable to Vale's shareholders	**3,724**	**4,455**	**5,352**	**16,728**	**24,736**

Financial results

US$ million	4Q22	3Q22	4Q21	2022	2021
Financial expenses	**(291)**	**(221)**	**(398)**	**(1,179)**	**(1,249)**
Loans and borrowings gross interest	(149)	(140)	(168)	(612)	(671)
Capitalization loans and borrowing costs	7	9	15	47	59
Others	(110)	(48)	(225)	(462)	(583)
Financial expenses (REFIS)	(39)	(42)	(20)	(152)	(54)
Financial income	**92**	**141**	**113**	**520**	**337**
Shareholders' Debentures	**(99)**	**470**	**393**	**659**	**(716)**
Financial Guarantee	**2**	**-**	**(18)**	**481**	**312**
Derivatives financial instruments[2]	**373**	**190**	**18**	**1,154**	**(23)**
Currency and interest rate swaps	323	232	7	1,130	(157)
Others (commodities, etc)	50	(42)	11	24	134
Foreign Exchange	**(247)**	**201**	**96**	**(398)**	**408**
Reclassification of cumulative translation adjustment on to income statement	**-**	**1,608**	**3,184**	**1,608**	**4,326**
Monetary variation	**(488)**	**(42)**	**(230)**	**(577)**	**(276)**
Financial result, net	**(658)**	**2,347**	**3,158**	**2,268**	**3,119**

[1] The cash effect of shareholder debentures was US$ 129 million in 4Q22.
[2] The cash effect of the derivatives was a gain of US$ 66 million in 4Q22.

Main factors that affected net income for 4Q22 vs. 3Q22

	US$ million	
3Q22 Net income from continuing operations attributable to Vale's shareholders	**4,455**	
∆ EBITDA proforma	999	Higher sales volumes and price realization across the board.
∆ Brumadinho event and de-characterization of dams & COVID-19 donations	(39)	
∆ Impairment & disposal of non-current assets	(137)	Reversal of onerous contracts after Midwestern System sale.
∆ Dividends received	(27)	
∆ Equity results	(36)	
∆ Financial results	(3,005)	3Q22 was greatly impacted by the positive effect of the reclassification of the cumulative translation adjustment after the capital reduction of a wholly owned subsidiary. Additionally, 3Q22 was positively affected by mark-to-market adjustments and in 4Q22, Vale paid remuneration on shareholders debentures.
∆ Income taxes	1,639	Recognition of deferred income tax assets from tax loss of a foreign subsidiary.
∆ Depreciation, depletion & amortization	(125)	
4Q22 Net income from continuing operations attributable to Vale's shareholders	**3,724**	

∆: difference between 4Q22 and 3Q22 figures

CAPEX

Vale's investments totaled US$ 5.4 billion in 2022, in line with guidance and 8% higher y/y, owing to the Sol do Cerrado energy project as well as the Serra Sul 120 Mtpy, Capanema and Tubarão Briquette iron ore projects.

In 2023, Vale expects to invest US$ 6.0 billion driven by (i) Onça Puma 2nd furnace and VBME construction; (ii) the capital contribution for the Morowali project in Indonesia; and (iii) the progress on the Serra Sul 120 Mtpy and Capanema iron ore projects in Brazil.

Growth and sustaining projects execution

US$ million	4Q22	%	3Q22	%	4Q21	%	2022	%	2021	%
Growth projects	**426**	**23.8**	**375**	**30.5**	**352**	**20.1**	**1,587**	**29.1**	**999**	**19.8**
Iron Solutions	285	15.9	200	16.3	200	11.4	866	15.9	531	10.6
Energy Transition Materials	100	5.6	81	6.6	94	5.4	338	6.2	344	6.8
Nickel	16	0.9	19	1.5	7	0.4	49	0.9	14	0.3
Copper	84	4.7	62	5.0	87	5.0	289	5.3	330	6.6
Energy and others	41	2.3	94	7.6	58	3.3	383	7.0	124	2.5
Sustaining projects	**1,361**	**76.2**	**855**	**69.5**	**1,399**	**79.9**	**3,859**	**70.9**	**4,034**	**80.2**
Iron Solutions	764	42.8	497	40.4	842	48.1	2,236	41.1	2,481	49.3
Energy Transition Materials	567	31.7	341	27.7	545	31.1	1,521	27.9	1,518	30.2
Nickel	480	26.9	288	23.4	470	26.8	1,287	23.6	1,353	26.9
Copper	87	4.9	53	4.3	75	4.3	234	4.3	165	3.3
Energy and others	30	1.7	17	1.4	12	0.7	102	1.9	35	0.7
Total	**1,787**	**100.0**	**1,230**	**100.0**	**1,751**	**100.0**	**5,446**	**100.0**	**5,033**	**100.0**

In Iron Solutions, the Northern System 240 Mtpy (mine/plant front) and Gelado projects started their commissioning in Q4, with both expected to support a gradual increase of Northern System iron ore production in 2023.

In Energy Transition Materials, the Salobo III project successfully commenced at the end of 2022. The project is expected to add 30-40 ktpy in copper production and achieve full capacity in 4Q24.

Vale's Board of Directors approved the investment of US$ 755 million for the Compact Crushing project development at S11D, which will allow the processing of a variety of minerals, including the jaspilite waste material. The project will give S11D more flexibility and is expected to be operational in 2H26.

Growth projects

Investments in growth projects under construction totaled US$ 426 million in Q4, US$ 51 million higher q/q, mainly due to progress in the Serra Sul 120 Mtpy, Capanema and Salobo III projects. This was partially offset by lower investments at the Sol do Cerrado project after its start-up in Q3.

Growth projects progress indicator[6]

Projects	Capex 4Q22	Financial progress[1]	Physical progress	Comments
Iron Solutions				
Northern System 240 Mtpy *Capacity: 10 Mtpy* *Start-up: 1H23* *Capex: US$ 772 MM*	32	68%	85%[2]	Mine-plant front is near full commission. The pending licenses to finalize the approximately 13 km stretch required to complete the project were granted. The port front works are on schedule.
Capanema's Maximization *Capacity: 18 Mtpy* *Start-up: 1H25* *Capex: US$ 913 MM*	48	15%	29%	Electro-mechanical assembly has begun at the primary crushing plant and secondary circuit, with steelworks continuing at the tertiary screening plant. Critical packages have been awarded for the electro-mechanical assembly of stacker/reclaimers for stockpiles as well as for the long-distance conveyor belt system.
Serra Sul 120 Mtpy[3] *Capacity: 20 Mtpy* *Start-up: 2H25* *Capex: US$ 1,502 MM*	118	32%	42%	Remaining civil packages have been awarded. Major excavations at the mine were concluded. Civil works began for the duplication of the long-distance belt conveyor (TCLD), including earthworks and piling.
Briquettes Tubarão *Capacity: 6 Mtpy* *Start-up: 1H23 (Plant 1) and 2H23 (Plant 2)* *Capex: US$ 182 MM*	29	58%	79%	Seven of the nine briquetting machines have been assembled, while drying and mixing infrastructure is well advanced.
Energy Transition Materials				
Salobo III *Capacity: 30-40 ktpy* *Start-up: 2H22* *Capex: US$ 1,056 MM*	81	91%	99%	Project's line #1 started-up in Q4 and start-up of the line #2 is expected for 1Q23.
Onça Puma 2nd Furnace *Capacity: 12-15 ktpy* *Start-up: 1H25* *Capex: US$ 555 MM*	2	3%	1%	The detailed engineering and procurement of major work packages are currently in progress.

1 CAPEX disbursement until end of 4Q22 vs. CAPEX expected.
2 Considering physical progress on mine, plant and logistics.
3 The project consists of increasing the S11D mine-plant capacity by 20 Mtpy.

Sustaining projects

Investments in sustaining our operations totaled US$ 1,361 million in Q4, US$ 506 million higher q/q, mainly due to the usual seasonally higher disbursements at the end of the year as well as higher disbursements for the Voisey's Bay project.

Sustaining projects progress indicator[7]

Projects	Capex 4Q22	Financial progress[1]	Physical progress	Comments
Iron Solutions				
Gelado *Capacity: 10 Mtpy* *Start-up: 2H22* *Capex: US$ 428 MM*	18	80%	99%	Project progressed on production commissioning. The Gelado project capacity is 5 Mtpy in the initial years, as it requires Usina 1 conversion to dry processing to achieve full capacity (10 Mtpy).
Energy Transition Materials				
Voisey's Bay Mine Extension *Capacity: 45 ktpy (Ni) and 20 ktpy (Cu)* *Start-up: 1H21[2]* *Capex: US$ 2,690 MM*	224	75%	81%	Electro-mechanical assembly continued to advance on the surface scope. In the underground, the Reid Brook bulk Material Handling System is progressing on schedule. For Eastern Deeps, the final infrastructure package was awarded, and lateral development advancement remains the priority.

1 CAPEX disbursement until end of 4Q22 vs. CAPEX expected.
2 In 2Q21, Vale achieved the first ore production from the Reid Brook deposit, the first of two underground mines to be developed in the project. Eastern Deeps, the second deposit, has started to extract development ore from the deposit and is scheduled to start the main production ramp-up in the second half of 2023.

6 Pre-operating expenses included in the total estimated capex information, in line with Vale's Board of Directors approvals.
7 Pre-operating expenses included in the total estimated capex column, in line with Vale's Board of Directors approvals

Sustaining capex by type - 4Q22

US$ million	Iron Solutions	Energy Transition Materials	Energy and others	Total
Enhancement of operations	424	245	2	671
Replacement projects	21	247	-	268
Filtration and dry stacking projects	62	-	-	62
Dam management	37	10	-	47
Other investments in dams and waste dumps	46	13	-	59
Health and Safety	56	40	2	98
Social investments and environmental protection	64	5	-	69
Administrative & Others	54	7	26	87
Total	**764**	**567**	**30**	**1,361**

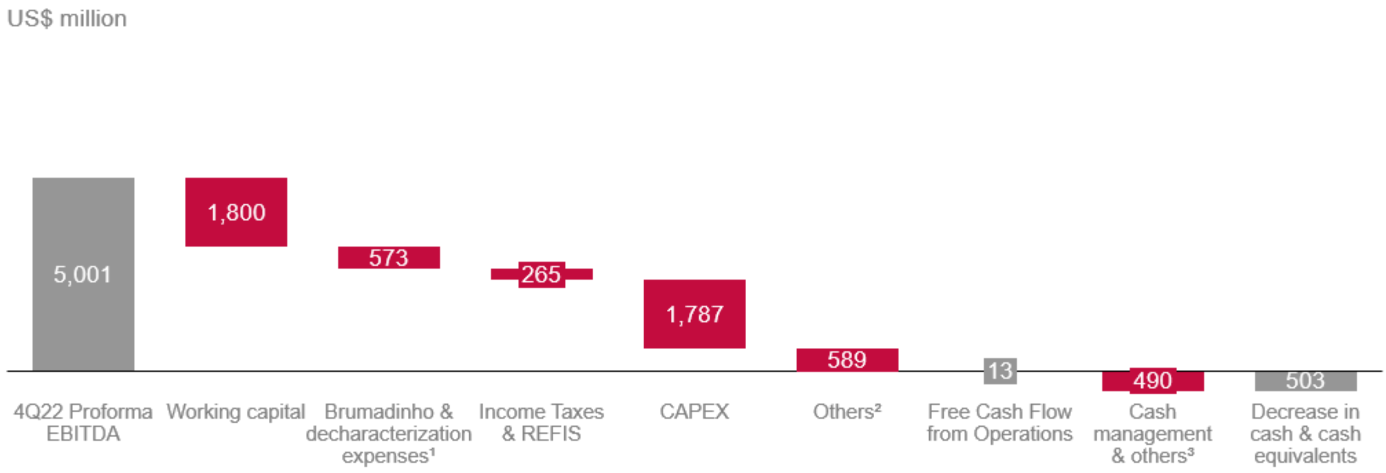
Free cash flow

In 4Q22, free cash flow generation was largely impacted by working capital and CAPEX, which are usually higher in Q4.

The working capital variation is largely explained by the US$ 2.1 billion increase in accounts receivables mainly due to the combined effect of (i) expected seasonally higher ferrous accrual sales volume (19.0 Mt in 4Q22 versus 11.8 Mt in 3Q22) led by stronger sales at the end of Q4; and (ii) iron ore provisional prices above quarter average (the opposite happened in Q3).

The cash & cash equivalents position decreased by US$ 503 million in the quarter as Vale repurchased its shares in amount of US$ 966 million. This was partially offset by US$ 476 million net debt issued in the quarter.

Free Cash Flow 4Q22



[1] Includes US$ 389 million of disbursement of Brumadinho and de-characterization provisioned expenses and US$ 184 million of Brumadinho incurred expenses.
[2] Includes interest on loans, derivatives, leasing, dividends paid to noncontrolling interest, shareholders debentures, payments to Renova and others.
[3] Includes US$ 966 million of share buyback, US$ 500 million of debt funding and US$ 24 million of debt repurchased.

Debt

Debt indicators

US$ million	4Q22	3Q22	4Q21
Gross debt [1]	**11,181**	**10,666**	**12,180**
Lease (IFRS 16)	1,531	1,538	1,602
Gross debt and leases	**12,712**	**12,204**	**13,782**
Cash, cash equivalents and short-term investments	4,797	5,224	11,905
Net debt	**7,915**	**6,980**	**1,877**
Currency swaps[2]	(211)	119	724
Brumadinho provisions	3,312	3,231	3,537
Samarco & Renova Foundation provisions[3]	3,124	2,954	2,910
Expanded net debt	**14,140**	**13,284**	**9,048**
Average debt maturity (years)	8.7	9.2	8.7
Cost of debt after hedge (% pa)	5.5	5.5	4.6
Total debt / adjusted LTM EBITDA (x)	0.6	0.6	0.4
Net debt / adjusted LTM EBITDA (x)	0.4	0.3	0.1
Adjusted LTM EBITDA / LTM gross interest (x)	32.3	33.7	46.7

[1] Does not include leases (IFRS 16).
[2] Includes interest rate swaps.
[3] Does not include provision for de-characterization of Germano dam in the amount of US$ 197 million in 4Q22, US$ 191 million in 3Q22 and US$ 202 million in 4Q21.

Gross debt and leases totaled US$ 12.7 billion as of December 31, 2022, US$ 508 million higher q/q mainly due to US$ 500 million debt issued as part of Vale's liability management.

Expanded net debt increased US$ 856 million q/q reaching US$ 14.1 billion as of December 31, 2022, mainly explained by the US$ 966 million disbursement for the share buyback program.

The average debt maturity was 8.7 years on December 31, 2022, slightly lower than 9.2 years on September 30, 2022. After currency and interest rate swaps, the average cost of debt was in line with 3Q22 at 5.5% per annum.

Performance of the business segments

Proforma Adjusted EBITDA from continuing operations, by business area

US$ million	4Q22	3Q22	4Q21	2022	2021
Iron Solutions	**4,721**	**3,773**	**6,380**	**19,443**	**31,480**
Iron ore fines	3,955	2,806	5,145	15,670	26,471
Pellets	743	933	1,211	3,653	4,873
Others	23	34	24	120	136
Energy Transition Materials	**775**	**364**	**811**	**2,493**	**3,193**
Nickel	610	209	405	1,924	1,576
Copper	165	155	406	569	1,617
Others	**(495)**	**(135)**	**(334)**	**(1,025)**	**(710)**
Total	**5,001**	**4,002**	**6,857**	**20,911**	**33,963**

Segment information 4Q22, as per footnote of financial statements

		Expenses					
US$ million	Net operating revenues	Cost[1]	SG&A and others[1]	R&D[1]	Pre operating & stoppage[1]	Dividends and interest received from associates and JVs	Adjusted EBITDA
Iron Solutions	**9,330**	**(4,561)**	**94**	**(84)**	**(102)**	**44**	**4,721**
Iron ore fines	7,767	(3,744)	93	(83)	(92)	14	3,955
Pellets	1,456	(735)	(1)	(2)	(5)	30	743
Others	107	(82)	2	1	(5)	-	23
Energy Transition Materials	**2,549**	**(1,657)**	**(36)**	**(75)**	**(6)**	**-**	**775**
Nickel[2]	2,051	(1,378)	(20)	(42)	(1)	-	610
Copper[3]	498	(279)	(16)	(33)	(5)	-	165
Brumadinho event and de-characterization of dams	**-**	**-**	**(375)**	**-**	**-**	**-**	**(375)**
Others	**62**	**(62)**	**(446)**	**(59)**	**(1)**	**11**	**(495)**
Total	**11,941**	**(6,280)**	**(763)**	**(218)**	**(109)**	**55**	**4,626**

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

Iron Solutions

Selected financial indicators - Iron Solutions

US$ million	4Q22	3Q22	4Q21	2022	2021
Net Revenues	9,330	7,827	10,769	34,916	45,925
Costs[1]	(4,561)	(3,891)	(4,244)	(14,946)	(13,830)
SG&A and Other expenses[1]	94	(47)	(14)	(51)	(98)
Pre-operating and stoppage expenses[1]	(102)	(72)	(118)	(381)	(393)
R&D expenses	(84)	(49)	(72)	(215)	(205)
Dividends and interests on associates and JVs	44	5	59	120	81
Adjusted EBITDA	**4,721**	**3,773**	**6,380**	**19,443**	**31,480**
Depreciation and amortization	(535)	(442)	(504)	(1,890)	(1,750)
Adjusted EBIT	**4,186**	**3,331**	**5,876**	**17,553**	**29,730**
Adjusted EBIT margin (%)	**44.9**	**42.6**	**54.6**	**50.3**	**64.7**

[1] Net of depreciation and amortization.

Iron Solutions EBITDA Variation 4Q22 vs 3Q22

		Drivers				
US$ million	3Q22	Volume	Prices	Others	Total variation	4Q22
Iron ore fines	2,806	683	248	218	1,149	3,955
Pellets	933	29	(272)	53	(190)	743
Other	34	(9)	(7)	5	(11)	23
Iron Solutions	**3,773**	**703**	**(31)**	**276**	**948**	**4,721**

The 25% q/q increase in EBITDA is largely explained by 16 Mt higher iron ore fines and pellets sales (US$ 712 million), as well as lower all-in unit costs driven by better freight rates (included in "Others" US$ 276 million in the table above).

Revenues

Iron Solutions – volumes, prices, premiums and revenues

	4Q22	3Q22	4Q21	2022	2021
Volume sold ('000 metric tons)					
Iron ore fines	81,202	65,381	81,749	260,663	270,935
ROM	1,963	3,668	607	8,216	2,052
Pellets	8,789	8,521	10,351	33,164	32,306
Share of premium products[1] (%)	83%	78%	82%	80%	84%
Average prices (US$/t)					
Iron ore - 62% Fe reference price	99.0	103.3	109.6	120.2	159.5
Iron ore - Metal Bulletin 62% Fe low alumina index	99.8	105.1	111.8	123.0	161.0
Iron ore - Metal Bulletin 65% Fe index	111.4	115.8	128.8	139.2	185.2
Provisional price at the end of the quarter	116.3	95.2	120.3	116.3	120.3
Iron ore fines Vale CFR reference price (dmt)	107.4	103.3	117.9	121.1	156.8
Iron ore fines Vale CFR/FOB realized price	95.6	92.6	107.2	108.1	141.4
Pellets CFR/FOB (wmt)	165.6	194.3	182.6	188.6	218.3
Iron ore fines and pellets quality premium (US$/t)					
Iron ore fines quality premium	1.6	0.6	0.5	1.8	2.9
Pellets weighted average contribution	3.8	6.0	4.2	5.1	4.0
Total	5.4	6.6	4.7	6.9	6.9
Net operating revenue by product (US$ million)					
Iron ore fines	7,767	6,053	8,764	28,188	38,324
ROM	22	29	8	103	62
Pellets	1,456	1,656	1,889	6,256	7,053
Others	85	89	108	369	486
Total	**9,330**	**7,827**	**10,769**	**34,916**	**45,925**

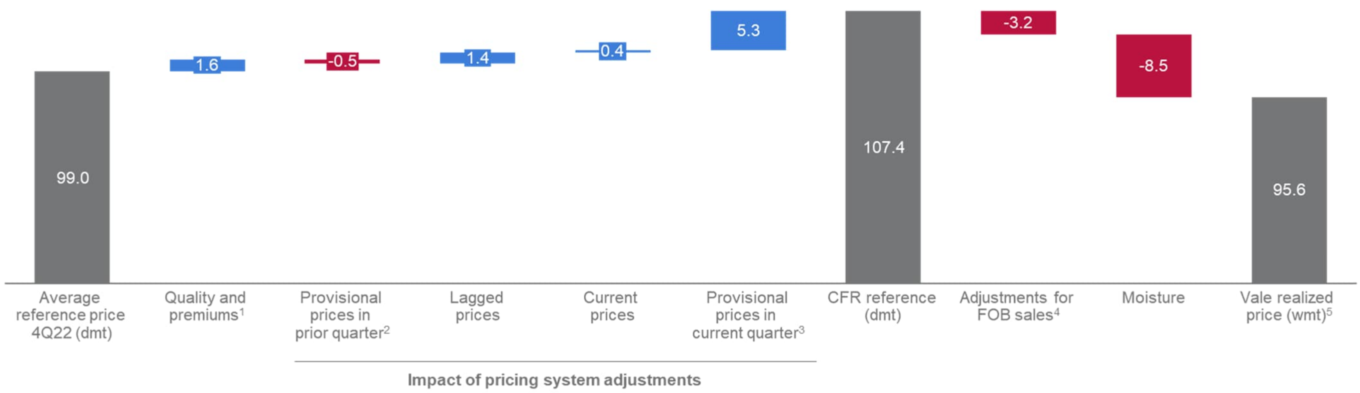
[1] Pellets, Carajás (IOCJ), Brazilian Blend Fines (BRBF) and pellet feed.

The share of premium products in total sales was 83% in Q4, with higher sales of IOCJ and BRBF. Iron ore premium of US$ 5.4/t (vs. US$ 6.6/t in Q3) driven by lower contractual pellet premiums, after record premiums in Q3.

Iron ore fines, excluding Pellets and ROM

Revenues & price realization

Price realization iron ore fines – US$/t, 4Q22



[1] Includes quality (US$ 0.8/t) and premiums/discounts and commercial conditions (US$ 0.8/t).
[2] Adjustment as a result of provisional prices booked in 3Q22 at US$ 95.2/t.
[3] Difference between the weighted average of the prices provisionally set at the end of 4Q22 at US$ 116.3/t based on forward curves and US$ 99.0/t from the 4Q22 average reference price.
[4] Includes freight pricing mechanisms of CFR sales freight recognition.
[5] Vale's price is net of taxes.

Vale's realized price was US$ 95.6/t, US$ 3.1/t higher q/q, despite the US$ 4.3/t decrease of the average reference price. The increase is largely explained by a positive effect of the pricing system due to higher forward price adjustments (+US$ 7.5/t vs. Q3), with 31% of sales booked at an average price of US$ 116.3/t.

Iron Ore fines pricing system breakdown (%)

	4Q22	3Q22	4Q21
Lagged	12	13	14
Current	57	61	52
Provisional	31	26	34
Total	**100**	**100**	**100**

Costs

Iron ore fines cash cost and freight

	4Q22	3Q22	4Q21	2022	2021
Costs (US$ million)					
Vale's iron ore fines C1 cash cost (A)	1,759	1,489	1,488	5,856	5,377
Third-party purchase costs[1] (B)	274	343	194	1,100	1,166
Vale's C1 cash cost ex-third-party volumes (C = A – B)	1,485	1,146	1,294	4,756	4,211
Sales Volumes (Mt)					
Volume sold (ex-ROM) (D)	81.2	65.4	81.7	260.7	270.9
Volume sold from third-party purchases (E)	5.1	6.2	3.2	18.5	15.6
Volume sold from own operations (F = D – E)	76.2	59.2	78.6	242.2	255.3

cont'd

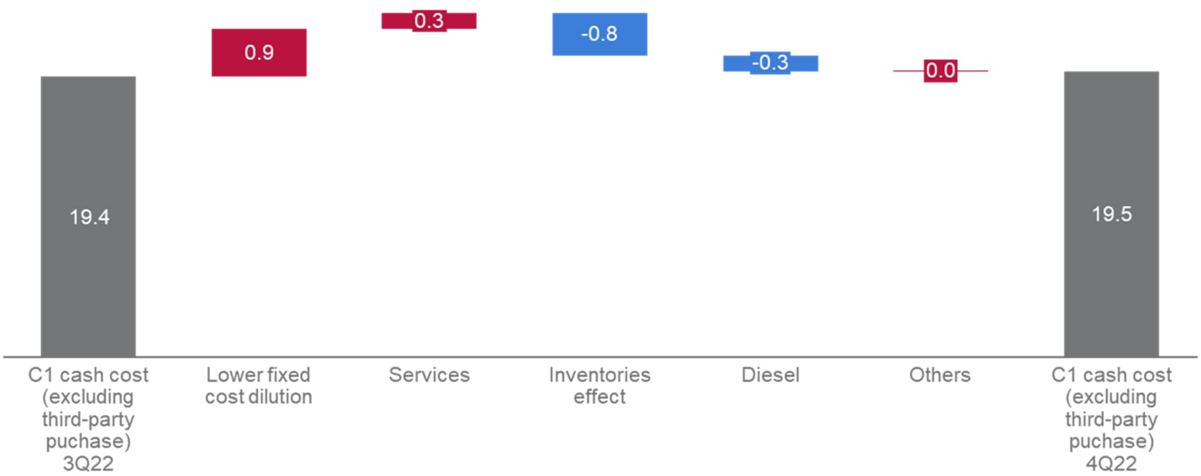
cont'd	4Q22	3Q22	4Q21	2022	2021
Iron ore fines cash cost (ex-ROM, ex-royalties), FOB (US$ /t)					
Vale's C1 cash cost ex-third-party purchase cost (C/F)	19.5	19.4	16.5	19.6	16.5
Average third-party purchase C1 cash cost (B/E)	54.2	55.3	61.6	59.5	74.8
Vale's iron ore cash cost (A/D)	21.7	22.8	18.2	22.5	19.8
Freight					
Maritime freight costs (G)	1,312	1,230	1,498	4,328	4,200
% of CFR sales (H)	86%	84%	88%	82%	82%
Volume CFR (Mt) (I = D x H)	69.8	54.9	71.9	214.5	223.5
Vale's iron ore unit freight cost (US$/t) (G/I)	18.8	22.4	20.8	20.2	18.8

[1] Includes logistics costs related to third-party purchases.

Iron ore fines COGS - 3Q22 x 4Q22

		Drivers				
US$ million	3Q22	Volume	Exchange rate	Others	Total variation	4Q22
C1 cash costs	1,489	360	(2)	(88)	270	1,759
Freight	1,230	332	-	(250)	82	1,312
Distribution costs	145	35	-	(27)	8	153
Royalties & others	231	56	-	233	289	520
Total costs before depreciation and amortization	**3,095**	**783**	**(2)**	**(132)**	**649**	**3,744**
Depreciation	289	65	(2)	30	93	382
Total	**3,384**	**848**	**(4)**	**(102)**	**742**	**4,126**

C1 cash cost variation (excluding 3rd party purchases) – US$/t (4Q22 x 3Q22)



Vale's C1 cash cost, ex-third-party purchases, was in line q/q, mainly driven by (i) lower dilution of fixed costs due to lower production vs. Q3; and (ii) higher service costs in the Southern System, offset by (i) consumption of inventories from Q3 with lower costs; and (ii) lower diesel-related costs. The effect of third-party purchases on cost was reduced, as third-party volumes represented a smaller share in Vale's total sales vs. Q3.

Vale's maritime freight cost was US$ 18.8/t in Q4, US$ 3.6/t lower q/q. The decrease is largely explained by (i) lower bunker fuel costs (US$ 2.8/t); and (ii) seasonally lower spot affreightment (US$ 0.5/t).

CFR sales totaled 69.8 Mt in Q4, increasing to 86% of total sales volumes, due to higher sales to China. Sales to China are predominantly CFR-based, due to Vale's blending strategy and customers' usual choice.

In 4Q22, Vale recorded the change in Pará state's tax on mineral production (Taxa de Fiscalização de Recursos Minerais — "TFRM" in Portuguese) to 3 UPF-PA[8] from 1 UPF-PA, or R$ 8.26/t increase in 2022. The adoption of the new rate occurs after joining the "Estrutura Pará Program" with the objective of promoting infrastructure investments in the State of Pará, through the conversion of 50% of the payment of the TFRM in local investments. Therefore, US$ 222 million was recorded in Q4 in "Royalties & others" of the Iron Solutions business related to the payment of the new rate for the period between January and September 2022 relative to Northern System production. The effect of rate increase is expected to be recorded quarterly going forward.

Expenses

Expenses - Iron Ore fines

US$ millions	4Q22	3Q22	4Q21	2022	2021
SG&A	**21**	**14**	**10**	**64**	**58**
R&D	**83**	**46**	**69**	**208**	**198**
Pre-operating and stoppage expenses	**92**	**63**	**102**	**342**	**329**
Other expenses[1]	**(114)**	**30**	**12**	**(10)**	**79**
Total expenses	**82**	**153**	**193**	**604**	**664**

[1] Including a positive effect of tax recovery effect.

Iron ore pellets

Pellets – EBITDA

US$ million	4Q22	3Q22	4Q21	Comments
Net revenues / Realized prices	1,456	1,656	1,889	Realized prices averaged US$165.6/t in Q4 (-US$ 28.7/t q/q), driven by (i) a decline in the contractual premium after record premiums in Q3; (ii) lower 65%Fe benchmark prices; and (iii) lower effect of lagged prices in pricing realization.
Dividends from leased pelletizing plants	30	4	49	
Cash costs (Iron ore, leasing, freight, overhead, energy and other)	(735)	(714)	(716)	Mainly due to lower FOB sales, 46% of total sales (vs. 57% in Q3).
Pre-operational & stoppage expenses	(5)	(5)	(11)	
Expenses (Selling, R&D and other)	(3)	(8)	0	
EBITDA	**743**	**933**	**1,211**	
EBITDA/t	**85**	**109**	**117**	

[8] Pará Fiscal Unit ("Unidade Padrão Fiscal" in Portuguese). In 2022, 1 UPF-PA was R$ 4.1297/t.

Iron ore fines and pellets cash break-even landed in China[9]

US$/t	4Q22	3Q22	4Q21	2022	2021
Vale's C1 cash cost ex-third-party purchase cost	19.5	19.4	16.5	19.6	16.5
Third party purchases cost adjustments	2.2	3.4	1.7	2.8	3.4
Vale's iron ore cash cost (ex-ROM, ex-royalties), FOB (US$ /t)	21.7	22.8	18.2	22.5	19.8
Iron ore fines freight cost (ex-bunker oil hedge)	18.8	22.4	20.8	20.2	18.8
Iron ore fines distribution cost	1.9	2.2	1.1	2.0	1.2
Iron ore fines expenses[1] & royalties[2]	7.2	5.8	6.7	6.9	7.3
Iron ore fines moisture adjustment	4.3	4.7	4.1	4.6	4.1
Iron ore fines quality adjustment	(1.6)	(0.6)	(0.5)	(1.8)	(2.9)
Iron ore fines EBITDA break-even (US$/dmt)	**52.3**	**57.3**	**50.4**	**54.4**	**48.3**
Iron ore fines pellet adjustment	(3.8)	(6.0)	(4.2)	(5.1)	(4.0)
Iron ore fines and pellets EBITDA break-even (US$/dmt)	**48.5**	**51.3**	**46.2**	**49.3**	**44.3**
Iron ore fines sustaining investments	8.7	6.9	9.4	7.8	8.5
Iron ore fines and pellets cash break-even landed in China (US$/dmt)	**57.2**	**58.2**	**55.6**	**57.1**	**52.8**

[1] Net of depreciation and including dividends received. Includes stoppage expenses.

[2] Includes the one-off effect of Pará TFRM change in 4Q22 (US$ 2.7/t or US$ 222 million).

[9] Measured by unit cost + expenses + sustaining investment adjusted for quality. Does not include the impact from the iron ore fines and pellets pricing system mechanism.

Energy Transition Materials

Energy Transition Materials EBITDA overview – 4Q22

US$ million	Sudbury	Voisey's Bay & Long Harbour	PTVI (site)	Onça Puma	Sossego	Salobo	Others	Subtotal Energy Transition Material	Marketing activities	Total Energy Transition Material
Net Revenues	1,000	283	306	196	145	353	10	2,293	256	2,549
Costs	(777)	(206)	(202)	(92)	(81)	(198)	139	(1,417)	(240)	(1,657)
Selling and other expenses	(10)	(3)	-	(3)	(2)	(7)	(11)	(36)	-	(36)
Pre-operating and stoppage expenses	-	-	-	-	-	(5)	(1)	(6)	-	(6)
R&D	(21)	(9)	(9)	-	(11)	(1)	(24)	(75)	-	(75)
EBITDA	**192**	**65**	**95**	**101**	**51**	**142**	**113**	**759**	**16**	**775**

Nickel operations

Selected financial indicators, ex- marketing activities

US$ million	4Q22	3Q22	4Q21	2022	2021
Net Revenues	1,795	1,255	1,175	5,509	4,497
Costs[1]	(1,138)	(1,028)	(718)	(3,498)	(2,736)
SG&A and other expenses[1]	(20)	2	(27)	(38)	(5)
Pre-operating and stoppage expenses[1]	(1)	-	(1)	(1)	(113)
R&D expenses	(42)	(31)	(28)	(115)	(77)
Adjusted EBITDA	594	198	401	1,857	1,566
Depreciation and amortization	(272)	(254)	(212)	(883)	(824)
Adjusted EBIT	322	(56)	189	974	742
Adjusted EBIT margin (%)	17.9	(4.4)	16.1	17.7	16.5

[1] Net of depreciation and amortization

EBITDA variation - US$ million (4Q22 x 3Q22)

		Drivers					
US$ million	3Q22	Volume	Prices	By-products	Others	Total variation	4Q22
Nickel excl. marketing	198	19	162	77	138	396	594

EBITDA by operations, ex-marketing activities

US$ million	4Q22	3Q22	4Q21	4Q22 vs 3Q22 comments
Sudbury[1]	192	51	121	Higher nickel realized prices and higher by-products credits.
Voisey's Bay & Long Harbour	65	17	133	Higher nickel realized prices.
PTVI	95	103	106	Higher material and services costs due to increased equipment consumption and royalties, owing to higher nickel prices.
Onça Puma	101	28	8	Higher sales volumes and nickel realized prices.
Others[2]	141	(1)	33	Higher sales originated from Matsusaka.
Total	**594**	**198**	**401**	

[1] Includes Thompson operations and Clydach refinery.

[2] Includes Japanese operations, intercompany eliminations and purchase of finished nickel. Hedge results have been relocated to each nickel business operation.

Revenues & price realization

	4Q22	3Q22	4Q21	2022	2021
Volume sold ('000 metric tons)					
Nickel[1]	58	44	45	181	182
Copper	27	18	21	78	68
Gold as by-product ('000 oz)	11	10	6	40	27
Silver as by-product ('000 oz)	355	152	224	919	756
PGMs ('000 oz)	54	65	33	215	173
Cobalt (metric ton)	927	569	483	2,361	2,017
Average realized prices (US$/t)					
Nickel	24,454	21,672	19,088	23,669	18,004
Copper	7,610	5,925	10,229	7,459	9,237
Gold (US$/oz)	1,750	1,578	1,795	1,713	1,718
Silver (US$/oz)	23.58	14.98	21.32	21.11	23.87
Cobalt	44,980	49,228	63,079	58,865	51,907
Net revenue by product - ex marketing activities (US$ million)					
Nickel	1,422	960	851	4,279	3,273
Copper	205	104	210	578	631
Gold as by-product (US$/oz)	20	16	11	68	46
Silver as by-product (US$/oz)	9	2	5	20	17
PGMs	87	129	64	390	395
Cobalt	42	28	31	139	105
Others	10	15	3	35	30
Total	**1,795**	**1,255**	**1,175**	**5,509**	**4,497**

Breakdown of nickel volumes sold, realized price and premium

	4Q22	3Q22	4Q21	2022	2021
Volumes (kt)					
Upper Class I nickel	28.9	25.1	22.3	93.4	95.0
- of which: EV Battery	1.8	1.6	2.5	5.7	6.3
Lower Class I nickel	7.0	5.2	5.6	24.2	28.0
Class II nickel	17.8	8.7	12.7	46.6	44.0
Intermediates	4.5	5.3	4.0	16.5	15.0
Nickel realized price (US$/t)					
LME average nickel price	25,292	22,063	19,821	25,605	18,488
Average nickel realized price	24,454	21,672	19,088	23,669	18,004
Contribution to the nickel realized price by category:					
Nickel average aggregate premium	(250)	190	140	(40)	30
Other timing and pricing adjustments contributions[1]	(588)	(581)	(873)	(1,895)	(514)
Premium/discount by product (US$/t)					
Upper Class I nickel	1,520	1,770	900	1,530	830
Lower Class I nickel	670	750	180	690	180
Class II nickel	(2,370)	(1,920)	20	(1,690)	(530)
Intermediates	(4,750)	(4,310)	(3,840)	(5,270)	(3,750)

[1] Comprises (i) the Quotational Period effects (based on sales distribution in the prior three months, as well as the differences between the LME price at the moment of sale and the LME average price), with a positive impact of US$ 601/t , (ii) fixed-price sales, with a negative impact of US$ 72/t (iii) the effect of the hedging on Vale's nickel price realization, with a negative impact of US$ 1,115 /t in the quarter and (iv) other effects with a negative impact of US$ 2/t.
Note: In 2022 we started the implementation of the Nickel Revenue Hedging Program for 2023. The nickel realized price for 4Q22 was impacted by strike price in the quarter of circa US$ 20,206/t. The average price for the complete hedge position has increased from US$ 25,113/t to US$ 39,929/t.

Nickel price in 4Q22 increased 13% q/q mainly due to 15% higher LME nickel average price. This was partially offset by the reversion of the nickel average aggregate premium resulting from (i) higher share of Class II products in the sales mix due to higher sales originated from Matsusaka, (ii) an increase in FeNi sales to Asia at higher discounts and (iii) lower premiums across the board.

Product type by operation

% of source sales	North Atlantic	PTVI	Onça Puma	Total 4Q22	Total 3Q22
Upper Class I	75.5	-	-	49.7	56.7
Lower Class I	18.3	-	-	12.0	11.6
Class II	3.4	69.2	100	30.5	19.6
Intermediates	2.8	30.8	-	7.7	12.0

Costs

Nickel COGS, excluding marketing activities - 4Q22 x 3Q22

		Drivers				
US$ million	3Q22	Volume	Exchange rate	Others	Total variation	4Q22
Nickel operations	1,028	281	(34)	(137)	110	1,138
Depreciation	254	81	(7)	(56)	18	272
Total	**1,282**	**362**	**(41)**	**(193)**	**128**	**1,410**

Unit cash cost of sales by operation, net of by-product credits

US$/t	4Q22	3Q22	4Q21	4Q22 vs 3Q22 comments
Sudbury[1,2]	16,435	19,078	13,887	Higher by-products credits.
Voisey's Bay & Long Harbour[2]	17,797	16,704	2,676	Maintenance cost partially offset by greater by-product credits.
PTVI	12,150	11,637	8,946	Higher material and services costs due to increased equipment consumption and royalties, owing to higher nickel prices.
Onça Puma	10,412	9,882	13,612	Lower dilution of fixed costs from lower production.

[1] Sudbury figures include Thompson and Clydach costs.
[2] A large portion of Sudbury, including Clydach, and Long Harbour finished nickel production is derived from intercompany transfers, as well as from the purchase of ore or nickel intermediates from third parties. These transactions are valued at fair market value.

EBITDA break-even[10]

US$/t	4Q22	3Q22	4Q21	2022	2021
COGS ex. 3rd-party feed	18,660	21,717	15,914	18,346	14,663
COGS[1]	19,577	23,214	16,098	19,351	14,944
By-product revenues[1]	(6,390)	(6,663)	(7,258)	(6,798)	(6,639)
COGS after by-product revenues	13,187	16,551	8,840	12,553	8,305
Other expenses[2]	1,017	705	1,258	847	1,069
Total Costs	**14,204**	**17,256**	**10,098**	**13,400**	**9,375**
Nickel average aggregate premium (discount)	**(250)**	**190**	**140**	**(40)**	**30**
EBITDA breakeven	**14,454**	**17,066**	**9,958**	**13,440**	**9,345**

[1] Excludes marketing activities.
[2] Includes R&D, sales expenses and pre-operating & stoppage.

[10] Considering only the cash effect of US$ 400/oz that Wheaton Precious Metals pays for 70% of Sudbury's gold by-product, nickel operations EBITDA break-even would increase to US$ 14,544/t.

Copper operations – Salobo and Sossego

Selected financial indicators - Copper operations, ex-marketing activities

US$ million	4Q22	3Q22	4Q21	2022	2021
Net Revenues	498	479	669	1,779	2,589
Costs[1]	(279)	(275)	(241)	(1,049)	(878)
SG&A and other expenses[1]	(16)	(8)	(2)	(21)	(9)
Pre-operating and stoppage expenses[1]	(5)	(3)	(1)	(13)	(4)
R&D expenses	(33)	(38)	(19)	(127)	(81)
Adjusted EBITDA	165	155	406	569	1,617
Depreciation and amortization	(34)	(30)	(34)	(132)	(145)
Adjusted EBIT	131	125	372	437	1,472
Adjusted EBIT margin (%)	26.3	26.1	55.6	24.6	56.9

[1] Net of depreciation and amortization

EBITDA variation - US$ million (4Q22 x 3Q22)

		Drivers					
US$ million	3Q22	Volume	Prices	By-products	Others	Total variation	4Q22
Copper	155	(26)	106	(21)	(49)	10	165

EBITDA by operation

US$ million	4Q22	3Q22	4Q21	4Q22 vs 3Q22 comments
Salobo	142	128	253	Higher copper realized prices
Sossego	51	56	163	Lower copper sales volumes.
Others copper[1]	(28)	(29)	(10)	
Total	**165**	**155**	**406**	

[1] Includes US$ 28 million in research expenses related to the Hu'u project in 4Q22.

Revenues & price realization

US$ million	4Q22	3Q22	4Q21	2022	2021
Volume sold (000 metric tons)					
Copper	45	53	53	166	216
Gold as by-product	62	69	71	237	313
Silver as by-product	178	194	128	692	643
Average prices (US$/t)					
Average LME copper price	8,001	7,745	9,699	8,797	9,317
Average copper realized price	**8,774**	**6,663**	**10,229**	**8,052**	**9,337**
Gold (US$/oz)	1,663	1,773	1,784	1,797	1,773
Silver (US$/oz)	18	19	20	21	25
Revenue (US$ million)					
Copper	392	353	539	1,339	2,018
Gold as by-product	103	123	127	426	555
Silver as by-product	3	4	3	14	16
Total	**498**	**479**	**669**	**1,779**	**2,589**

Price realization – copper operations

US$/t	4Q22	3Q22	4Q21	2022	2021
Average LME copper price	8,001	7,745	9,699	8,797	9,317
Current period price adjustments¹	514	(390)	144	(259)	(74)
Copper gross realized price	8,514	7,355	9,843	8,538	9,244
Prior period price adjustments²	736	(246)	824	(25)	539
Copper realized price before discounts	**9,250**	**7,110**	**10,667**	**8,513**	**9,783**
TC/RCs, penalties, premiums and discounts³	(476)	(457)	(438)	(461)	(446)
Average copper realized price	**8,774**	**6,663**	**10,229**	**8,052**	**9,337**

¹ Current-period price adjustments: at the end of the quarter, mark-to-market of open invoices based on the copper price forward curve. Includes a small number of final invoices that were provisionally priced and settled within the quarter.
² Prior-period price adjustment: based on the difference between the price used in final invoices (and in the mark-to-market of invoices from previous quarters still open at the end of the quarter) and the provisional prices used for sales in prior quarters.
³ TC/RCs, penalties, premiums, and discounts for intermediate products.

Vale's copper products are sold on a provisional pricing basis during the quarter, with final prices determined in a future period, generally one-to-four months forward.

The positive effects of the prior-period price adjustments of US$ 736/t and the current-period price adjustments US$ 514/t[11] were mainly due to the forward price increase during the fourth quarter.

Costs

COGS - 4Q22 x 3Q22

		Drivers				
US$ million	3Q22	Volume	Exchange rate	Others	Total variation	4Q22
Copper operations	275	(41)	-	45	4	279
Depreciation	30	(7)	-	11	4	34
Total	**305**	**(48)**	**-**	**56**	**8**	**313**

Copper operations – unit cash cost of sales, net of by-product credits

US$/t	4Q22	3Q22	4Q21	4Q22 vs 3Q22 comments
Salobo	3,644	2,343	1,992	Lower dilution of fixed costs.
Sossego	4,409	3,491	2,255	Higher material costs and lower dilution of fixed costs.

EBITDA break-even – copper operations[12]

US$/t	4Q22	3Q22	4Q21	2022	2021
COGS	6,264	5,170	4,559	6,304	4,059
By-product revenues	(2,372)	(2,390)	(2,454)	(2,644)	(2,638)
COGS after by-product revenues	**3,892**	**2,780**	**2,105**	**3,660**	**1,421**
Other expenses¹	1,201	952	415	970	436
Total costs	**5,093**	**3,732**	**2,520**	**4,630**	**1,857**
TC/RCs penalties, premiums and discounts	476	457	438	461	446
EBITDA breakeven	**5,569**	**4,189**	**2,958**	**5,091**	**2,303**
EBITDA breakeven ex-Hu'u	**4,938**	**3,643**	**2,773**	**4,502**	**2,035**

¹ Includes sales expenses, R&D, pre-operating and stoppage expenses and other expenses

The realized price to be compared to the EBITDA break-even should be the copper realized price before discounts (US$ 9,250/t), given that TC/RCs, penalties and other discounts are already part of the EBITDA break-even build-up.

[11] On December 31st, 2022, Vale had provisionally priced copper sales from Sossego and Salobo totaling 52,256 tons valued at an LME forward price of US$ 8,375/t, subject to final pricing over the following months.
[12] Considering only the cash effect of US$ 400/oz that Wheaton Precious Metals pays for 75% of Salobo's gold by-product, copper operations EBITDA break-even would increase to US$ 6,816/t and copper operations EBITDA break-even ex- Hu'u would increase to US$ 6,185/t.

WEBCAST INFORMATION

Vale will host a webcast on Friday, February 17, 2023, at 11:00 a.m. Brasilia time (9:00 a.m. New York time; 2:00 p.m. London time). Internet access to the webcast and presentation materials will be available on Vale's website at www.vale.com/investors. A webcast replay will be accessible at www.vale.com beginning shortly after the completion of the call. Interested parties may listen to the teleconference by dialing in:

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The Access Code for this call is VALE.

Further information on Vale can be found at: vale.com

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Except where otherwise indicated, the operational and financial information in this release is based on the consolidated figures in accordance with IFRS. Our quarterly financial statements are reviewed by the company's independent auditors. The main subsidiaries that are consolidated are the following: Companhia Portuária da Baía de Sepetiba, Vale Manganês S.A., Minerações Brasileiras Reunidas S.A., Salobo Metais S.A, Tecnored Desenvolvimento Tecnológico S.A., PT Vale Indonesia Tbk, Vale Holdings B.V, Vale Canada Limited, Vale International S.A., Vale Malaysia Minerals Sdn. Bhd., Vale Oman Pelletizing Company LLC e Vale Oman Distribution Center LLC.

This press release may include statements about Vale's current expectations about future events or results (forward-looking statements). Many of those forward-looking statements can be identified by the use of forward-looking words such as „anticipate," „believe," „could," „expect," „should," „plan," „intend," „estimate" "will" and „potential," among others. All forward-looking statements involve various risks and uncertainties. Vale cannot guarantee that these statements will prove correct. These risks and uncertainties include, among others, factors related to: (a) the countries where Vale operates, especially Brazil and Canada; (b) the global economy; (c) the capital markets; (d) the mining and metals prices and their dependence on global industrial production, which is cyclical by nature; and (e) global competition in the markets in which Vale operates. Vale cautions you that actual results may differ materially from the plans, objectives, expectations, estimates and intentions expressed in this presentation. Vale undertakes no obligation to publicly update or revise any forward-looking statement, whether as a result of new information or future events or for any other reason. To obtain further information on factors that may lead to results different from those forecast by Vale, please consult the reports that Vale files with the U.S. Securities and Exchange Commission (SEC), the Brazilian Comissão de Valores Mobiliários (CVM) and, in particular, the factors discussed under "Forward-Looking Statements" and "Risk Factors" in Vale's annual report on Form 20-F.

The information contained in this press release includes financial measures that are not prepared in accordance with IFRS. These non-IFRS measures differ from the most directly comparable measures determined under IFRS, but we have not presented a reconciliation to the most directly comparable IFRS measures, because the non-IFRS measures are forward-looking and a reconciliation cannot be prepared without unreasonable effort.

Annexes

Simplified financial statements

Income Statement

US$ million	4Q22	3Q22	4Q21	2022	2021
Net operating revenue	**11,941**	**9,929**	**13,105**	**43,839**	**54,502**
Cost of goods sold and services rendered	(7,155)	(6,301)	(6,494)	(24,028)	(21,729)
Gross profit	**4,786**	**3,628**	**6,611**	**19,811**	**32,773**
Gross margin (%)	40.1	36.5	50.4	45.2	60.1
Selling and administrative expenses	(148)	(119)	(131)	(515)	(481)
Research and development expenses	(218)	(170)	(177)	(660)	(549)
Pre-operating and operational stoppage	(125)	(89)	(147)	(479)	(648)
Other operational expenses, net	(624)	(387)	(2,394)	(1,722)	(2,976)
Impairment reversal (impairment and disposals) of non-current assets, net	(177)	(40)	(205)	773	(426)
Operating income	**3,494**	**2,823**	**3,557**	**17,208**	**27,693**
Financial income	92	141	113	520	337
Financial expenses	(291)	(221)	(398)	(1,179)	(1,249)
Other financial items, net	(459)	2,427	3,443	2,927	4,031
Equity results and other results in associates and joint ventures	72	78	(955)	305	(1,271)
Income before income taxes	**2,908**	**5,248**	**5,760**	**19,781**	**29,541**
Current tax	(72)	(514)	(483)	(2,020)	(5,663)
Deferred tax	907	(290)	130	(951)	966
Net income from continuing operations	**3,743**	**4,444**	**5,407**	**16,810**	**24,844**
Net income (loss) attributable to noncontrolling interests	19	(11)	55	82	108
Net income from continuing operations attributable to Vale's shareholders	**3,724**	**4,455**	**5,352**	**16,728**	**24,736**
Discontinued operations					
Net income (Loss) from discontinued operations	-	-	89	2,060	(2,376)
Net income from discontinued operations attributable to noncontrolling interests	-	-	14	-	(85)
Net income (Loss) from discontinued operations attributable to Vale's shareholders	**-**	**-**	**75**	**2,060**	**(2,291)**
Net income	**3,743**	**4,444**	**5,496**	**18,870**	**22,468**
Net income (Loss) attributable to Vale's to noncontrolling interests	19	(11)	69	82	23
Net income attributable to Vale's shareholders	**3,724**	**4,455**	**5,427**	**18,788**	**22,445**
Earnings per share (attributable to the Company's shareholders - US$):					
Basic and diluted earnings per share (attributable to the Company's shareholders - US$)	0.82	0.98	1.07	4.05	4.47

Equity income (loss) by business segment

US$ million	4Q22	%	3Q22	%	4Q21	%	2022	%	2021	%
Iron Solutions	65	90	80	92	36	19	213	87	166	34
Energy Transition Materials	-	-	-	-	1	1	3	1	1	0
Others	7	10	7	8	154	80	30	12	327	66
Total	**72**	**100**	**87**	**100**	**191**	**100**	**246**	**100**	**494**	**100**

Balance sheet

US$ million	12/31/2022	9/30/2022	12/31/2021
Assets			
Current assets	**15,526**	**13,922**	**22,360**
Cash and cash equivalents	4,736	5,182	11,721
Short term investments	61	42	184
Accounts receivable	4,319	2,150	3,914
Other financial assets	342	152	111
Inventories	4,482	5,268	4,377
Recoverable taxes	1,272	858	862
Others	314	270	215
Non-current assets held for sale	-	-	976
Non-current assets	**14,394**	**13,354**	**14,389**
Judicial deposits	1,215	1,289	1,220
Other financial assets	280	236	143
Recoverable taxes	1,110	1,114	935
Deferred income taxes	10,770	9,825	11,441
Others	1,019	890	650
Fixed assets	**56,974**	**53,335**	**52,693**
Total assets	**86,894**	**80,611**	**89,442**
Liabilities			
Current liabilities	**13,891**	**12,994**	**15,198**
Suppliers and contractors	4,461	4,735	3,475
Loans, borrowings and leases	489	447	1,204
Other financial liabilities	1,672	1,466	2,312
Taxes payable	470	303	2,177
Settlement program (REFIS)	371	351	324
Provisions	1,036	929	1,045
Liabilities related to associates and joint ventures	1,911	2,027	1,785
Liabilities related to Brumadinho	944	1,318	1,156
De-characterization of dams and asset retirement obligations	661	700	621
Dividends and interest on capital	1,383	-	-
Others	493	718	744
Liabilities associated with non-current assets held for sale	-	-	355
Non-current liabilities	**35,645**	**32,945**	**38,938**
Loans, borrowings and leases	12,223	11,757	12,578
Participative shareholders' debentures	2,725	2,659	3,419
Other financial liabilities	2,843	1,948	2,571
Settlement program (REFIS)	1,869	1,861	1,964
Deferred income taxes	1,413	1,608	1,881
Provisions	2,446	2,349	3,419
Liabilities related to associates and joint ventures	1,410	1,117	1,327
Liabilities related to Brumadinho	2,368	1,913	2,381
De-characterization of dams and asset retirement obligations	6,520	5,926	7,482
Streaming transactions	1,612	1,629	1,779
Others	216	178	137
Total liabilities	**49,536**	**45,939**	**54,136**
Shareholders' equity	**37,358**	**34,672**	**35,306**
Total liabilities and shareholders' equity	**86,894**	**80,611**	**89,442**

Cash flow

US$ million	4Q22	3Q22	4Q21	2022	2021
Cash flow from operations	**2,902**	**4,591**	**4,228**	**18,762**	**33,414**
Interest on loans and borrowings paid	(135)	(194)	(94)	(785)	(693)
Cash received (paid) on settlement of Derivatives, net	(65)	100	(80)	(83)	(197)
Payments related to Brumadinho event	(287)	(423)	(1,004)	(1,093)	(1,388)
Payments related to de-characterization of dams	(102)	(95)	(84)	(349)	(338)
Interest on participative shareholders debentures paid	(136)	-	(225)	(371)	(418)
Income taxes (including settlement program)	(265)	(582)	(951)	(4,637)	(4,385)
Net cash generated by operating activities from continuing operations	**1,912**	**3,397**	**1,790**	**11,444**	**25,995**
Net cash generated (used) in operating activities from discontinued operations	**-**	**-**	**90**	**41**	**(316)**
Net cash generated by operating activities	**1,912**	**3,397**	**1,880**	**11,485**	**25,679**
Cash flow from investing activities					
Short term investiment	39	118	331	260	582
Capital expenditures	(1,787)	(1,230)	(1,751)	(5,446)	(5,033)
Dividends received from joint ventures and associates	55	28	142	219	190
Proceeds from the sale of investments, net	-	140	1,259	586	714
Other investment activities, net	(171)	(70)	(276)	(202)	(594)
Net cash used in investing activities from continuing operations	**(1,864)**	**(1,014)**	**(295)**	**(4,583)**	**(4,141)**
Net cash used in investing activities from discontinued operations	**-**	**-**	**(81)**	**(103)**	**(2,469)**
Net cash used in investing actitivies	**(1,864)**	**(1,014)**	**(376)**	**(4,686)**	**(6,610)**
Cash flow from financing activities					
Loans and financing:					
Loans and borrowings from third parties	500	150	630	1,275	930
Payments of loans and borrowings from third parties	(24)	(448)	(404)	(2,300)	(1,927)
Payments of leasing	(78)	(48)	(63)	(224)	(215)
Payments to shareholders:					
Dividends and interest on capital paid to shareholders	-	(3,123)	-	(6,603)	(13,483)
Dividends and interest on capital paid to noncontrolling interest	(2)	(3)	(21)	(12)	(30)
Share buyback program	(966)	(686)	(701)	(6,036)	(5,546)
Net cash used in financing activities from continuing operations	**(570)**	**(4,158)**	**(559)**	**(13,900)**	**(20,271)**
Net cash used in financing activities from discontinued operations	**-**	**-**	**(3)**	**(11)**	**(13)**
Net cash used in financing activities	**(570)**	**(4,158)**	**(562)**	**(13,911)**	**(20,284)**
Increase (decrease) in cash and cash equivalents	**(522)**	**(1,775)**	**942**	**(7,112)**	**(1,215)**
Cash and cash equivalents in the beginning of the period	5,182	7,185	10,857	11,721	13,487
Effect of exchange rate changes on cash and cash equivalents	76	(228)	(78)	138	(551)
Cash and cash equivalents from subsidiaries sold, net	-	-	-	(11)	-
Cash and cash equivalents at the end of period	**4,736**	**5,182**	**11,721**	**4,736**	**11,721**
Non-cash transactions:					
Additions to property, plant and equipment - capitalized loans and borrowing costs	7	9	15	47	59
Cash flow from operating activities					
Income before income taxes	**2,908**	**5,248**	**5,760**	**19,781**	**29,541**
Adjusted for:					
Provisions related to Brumadinho	133	141	201	400	201
Provision for de-characterization of dams	-	35	1,725	72	1,725
Equity results and other results in associates and joint ventures	(72)	(78)	955	(305)	1,271
Impairment reversal (impairment and disposals) of non-current assets, net	177	40	205	(773)	426
Depreciation, depletion and amortization	900	775	822	3,171	3,034
Financial results, net	658	(2,347)	(3,158)	(2,268)	(3,119)
Change in assets and liabilities					
Accounts receivable	(2,107)	3	(3,142)	(325)	1,029
Inventories	940	(287)	423	45	(503)
Suppliers and contractors	(435)	1,169	(103)	495	251
Other assets and liabilities, net	(200)	(108)	540	(1,531)	(442)
Cash flow from operations	**2,902**	**4,591**	**4,228**	**18,762**	**33,414**

Reconciliation of IFRS and "non-GAAP" information

(a) Adjusted EBIT

US$ million	4Q22	3Q22	4Q21
Net operating revenues	11,941	9,929	13,105
COGS	(7,155)	(6,301)	(6,494)
Sales and administrative expenses	(148)	(119)	(131)
Research and development expenses	(218)	(170)	(177)
Pre-operating and stoppage expenses	(125)	(89)	(147)
Brumadinho event and dam de-characterization of dams	(375)	(336)	(2,115)
Other operational expenses, net	(249)	(51)	(279)
Dividends received and interests from associates and JVs	55	28	142
Adjusted EBIT from continuing operations	**3,726**	**2,891**	**3,904**

(b) Adjusted EBITDA

EBITDA defines profit or loss before interest, tax, depreciation, depletion and amortization. The definition of Adjusted EBITDA for the Company is the operating income or loss plus dividends received and interest from associates and joint ventures, and excluding the amounts charged as (i) depreciation, depletion and amortization and (ii) impairment reversal (impairmaint and disposals) of non-current assets. However, our adjusted EBITDA is not the measure defined as EBITDA under IFRS and may possibly not be comparable with indicators with the same name reported by other companies. Adjusted EBITDA should not be considered as a substitute for operational profit or as a better measure of liquidity than operational cash flow, which are calculated in accordance with IFRS. Vale provides its adjusted EBITDA to give additional information about its capacity to pay debt, carry out investments and cover working capital needs. The following tables shows the reconciliation between adjusted EBITDA and operational cash flow and adjusted EBITDA and net income, in accordance with its statement of changes in financial position.
The definition of Adjusted EBIT is Adjusted EBITDA plus depreciation, depletion and amortization.

Reconciliation between adjusted EBITDA and operational cash flow

US$ million	4Q22	3Q22	4Q21
Adjusted EBITDA from continuing operations	**4,626**	**3,666**	**4,726**
Working capital:			
Accounts receivable	(2,107)	3	(3,142)
Inventories	940	(287)	423
Suppliers and contractors	(435)	1,169	(103)
Provisions for Brumadinho	133	141	201
Provision for de-characterization of dams	-	35	1,725
Others	(255)	(136)	398
Cash flow from continuing operations	**2,902**	**4,591**	**4,228**
Income taxes paid - including settlement program	(265)	(582)	(951)
Interest on loans and borrowings paid	(135)	(194)	(94)
Payments related to Brumadinho event	(287)	(423)	(1,004)
Payments related to de-characterization of dams	(102)	(95)	(84)
Interest on participative shareholders' debentures paid	(136)	-	(225)
Cash received (paid) on settlement of Derivatives, net	(65)	100	(80)
Net cash generated from operating activities from continuing operations	**1,912**	**3,397**	**1,790**
Net cash generated (used) in operating activities from discontinued operations	**-**	**-**	**90**
Net cash generated from operating activities	**1,912**	**3,397**	**1,880**

Reconciliation between adjusted EBITDA and net income (loss)

US$ million	4Q22	3Q22	4Q21
Adjusted EBITDA from continuing operations	**4,626**	**3,666**	**4,726**
Depreciation, depletion and amortization	(901)	(775)	(820)
Dividends received and interest from associates and joint ventures	(55)	(28)	(142)
Impairment and disposals (impairment reversal) of non-current assets, net	(177)	(40)	(205)
Operating income	**3,493**	**2,823**	**3,559**
Financial results	(658)	2,347	3,158
Equity results and other results in associates and joint ventures	72	78	(955)
Income taxes	991	(804)	(353)
Net income from continuing operations	**3,898**	**4,444**	**5,409**
Net income (loss) attributable to noncontrolling interests	19	(11)	55
Net income attributable to Vale's shareholders	**3,879**	**4,455**	**5,354**

(c) Net debt

US$ million	4Q22	3Q22	4Q21
Gross debt	11,181	10,666	12,180
Leases	1,531	1,538	1,602
Cash and cash equivalents[1]	4,797	5,224	11,905
Net debt	**7,915**	**6,980**	**1,877**

[1] Including financial investments

(d) Gross debt / LTM Adjusted EBITDA

US$ million	4Q22	3Q22	4Q21
Gross debt and leases / LTM Adjusted EBITDA (x)	0.6	0.6	0.4
Gross debt and leases / LTM operational cash flow (x)	0.7	0.9	0.5

(e) LTM Adjusted EBITDA / LTM interest payments

US$ million	4Q22	3Q22	4Q21
Adjusted LTM EBITDA / LTM gross interest (x)	32.3	33.7	46.7
LTM adjusted EBITDA / LTM interest payments (x)	25.2	19.4	45.2

(f) US dollar exchange rates

R$/US$	4Q22	3Q22	4Q21
Average	5.2554	5.2462	5.5860
End of period	5.2177	5.4066	5.5805

Revenues and volumes

Net operating revenue by destination

US$ million	4Q22	%	3Q22	%	4Q21	%	2022	%	2021	%
North America	**613**	**5.1**	**562**	**5.7**	**464**	**3.5**	**2,239**	**5.1**	**1,910**	**3.5**
USA	433	3.6	423	4.3	366	2.8	1,643	3.7	1,543	2.8
Canada	180	1.5	139	1.4	98	0.7	596	1.4	367	0.7
South America	**913**	**7.6**	**1,086**	**10.9**	**1,101**	**8.4**	**4,740**	**10.8**	**6,080**	**11.2**
Brazil	829	6.9	958	9.6	919	7.0	4,137	9.4	5,164	9.5
Others	84	0.7	128	1.3	182	1.4	603	1.4	916	1.7
Asia	**8,484**	**71.0**	**6,282**	**63.3**	**9,607**	**73.3**	**28,857**	**65.8**	**37,627**	**69.0**
China	7,072	59.2	4,640	46.7	7,119	54.3	22,203	50.6	28,603	52.5
Japan	803	6.7	857	8.6	1,402	10.7	3,535	8.1	4,523	8.3
South Korea	310	2.6	387	3.9	518	4.0	1,311	2.9	1,744	3.2
Others	299	2.5	398	4.0	568	4.3	1,808	4.2	2,757	5.1
Europe	**1,109**	**9.3**	**1,360**	**13.7**	**1,286**	**9.8**	**5,357**	**12.2**	**6,730**	**12.3**
Germany	321	2.7	377	3.8	432	3.3	1,521	3.5	2,034	3.7
Italy	153	1.3	166	1.7	118	0.9	708	1.6	652	1.2
Others	635	5.3	817	8.2	736	5.6	3,128	7.1	4,044	7.4
Middle East	**317**	**2.7**	**334**	**3.4**	**322**	**2.5**	**1,241**	**2.8**	**960**	**1.8**
Rest of the World	**505**	**4.2**	**305**	**3.1**	**325**	**2.5**	**1,405**	**3.2**	**1,195**	**2.2**
Total	**11,941**	**100.0**	**9,929**	**100.0**	**13,105**	**100.0**	**43,839**	**100.0**	**54,502**	**100.0**

Volume sold by destination – Iron ore and pellets

'000 metric tons	4Q22	3Q22	4Q21	2022	2021
Americas	**9,659**	**11,495**	**8,373**	**39,200**	**32,979**
Brazil	8,904	10,334	7,165	35,550	27,711
Others	755	1,161	1,208	3,650	5,268
Asia	**74,370**	**59,353**	**77,249**	**232,587**	**244,175**
China	64,172	48,707	64,603	190,107	197,893
Japan	5,473	5,226	6,823	22,801	24,636
Others	4,725	5,420	5,823	19,679	21,646
Europe	**3,403**	**3,676**	**3,799**	**17,363**	**19,358**
Germany	698	789	949	3,220	3,957
France	587	669	706	3,313	3,653
Others	2,118	2,218	2,144	10,830	11,748
Middle East	**1,654**	**1,554**	**1,681**	**5,797**	**4,009**
Rest of the World	**2,868**	**1,491**	**1,604**	**7,095**	**4,772**
Total	**91,954**	**77,569**	**92,706**	**302,042**	**305,293**

Net operating revenue by business area

US$ million	4Q22	%	3Q22	%	4Q21	%	2022	%	2021	%
Iron Solutions	**9,330**	**78%**	**7,827**	**79%**	**10,769**	**82%**	**34,916**	**80%**	**45,925**	**84%**
Iron ore fines	7,767	65%	6,053	61%	8,764	67%	28,188	64%	38,324	70%
ROM	22	0%	29	0%	8	0%	103	0%	62	0%
Pellets	1,456	12%	1,656	17%	1,889	14%	6,256	14%	7,053	13%
Others	85	1%	89	1%	108	1%	369	1%	486	1%
Energy Transition Materials	**2,549**	**21%**	**2,043**	**21%**	**2,224**	**17%**	**8,398**	**19%**	**7,966**	**15%**
Nickel	1,422	12%	960	10%	851	6%	4,279	10%	3,273	6%
Copper	597	5%	457	5%	749	6%	1,917	4%	2,649	5%
PGMs	87	1%	129	1%	64	0%	390	1%	395	1%
Gold as by-product	123	1%	139	1%	138	1%	494	1%	601	1%
Silver as by-product	12	0%	6	0%	8	0%	34	0%	33	0%
Cobalt	42	0%	28	0%	31	0%	139	0%	105	0%
Others[1]	266	2%	324	3%	383	3%	1,145	3%	910	2%
Others	**62**	**1%**	**60**	**1%**	**112**	**1%**	**525**	**1%**	**611**	**1%**
Total of continuing operations	**11,941**	**100%**	**9,929**	**100%**	**13,105**	**100%**	**43,839**	**100%**	**54,502**	**100%**

[1] Includes marketing activities

Projects under evaluation and growth options

Copper		
Alemão	**Capacity: 60 ktpy**	**Stage: FEL3**
Carajás, Brazil	Growth project	Investment decision: 2023
Vale's ownership: 100%	Underground mine	115 kozpy Au as byproduct
South Hub extension	**Capacity: 60-80 ktpy**	**Stage: FEL3[1]**
Carajás, Brazil	Replacement project	Investment decision: 2023
Vale's ownership: 100%	Open pit	Development of mines to feed Sossego mill
Victor	**Capacity: 20 ktpy**	**Stage: FEL3**
Ontario, Canada	Replacement project	Investment decision: 2024
Vale's ownership: N/A	Underground mine	5 ktpy Ni as co-product; JV partnership under discussion
Hu'u	**Capacity: 300-350 ktpy**	**Stage: FEL2**
Dompu, Indonesia	Growth project	200 kozpy Au as byproduct
Vale's ownership: 80%	Underground block cave	
North Hub	**Capacity: 70-100 ktpy**	**Stage: FEL1**
Carajás, Brazil	Growth project	
Vale's ownership: 100%	Mines and processing plant	
Nickel		
Sorowako Limonites	**Capacity: 60 ktpy**	**Stage: FEL3**
Sorowako, Indonesia	Growth project	Investment decision: 2023
Vale's ownership: N/A[2]	HPAL plant	8 kpty Co as by-product
Pomalaa	**Capacity: 120 ktpy**	**Stage: Definitive feasibility study**
Kolaka, Indonesia	Growth project	Investment decision: 2023 (mine)
Vale's ownership: N/A[2]	Mine	15 ktpy Co as by-product
Creighton Ph. 5	**Capacity: 20-24 ktpy**	**Stage: FEL3**
Ontario, Canada	Replacement project	Investment decision: 2023-2024
Vale's ownership: 100%	Underground mine	17-20 ktpy Cu as by-product
CCM Pit	**Capacity: 12-15 ktpy**	**Stage: FEL3**
Ontario, Canada	Replacement project	Investment decision: 2023
Vale's ownership: 100%	Underground mine	7-9 ktpy Cu as by-product
CCM Ph. 3	**Capacity: 7 ktpy**	**Stage: FEL2**
Ontario, Canada	Replacement project	9 ktpy Cu as by-product
Vale's ownership: 100%	Underground mine	
CCM Ph. 4	**Capacity: 9 ktpy**	**Stage: FEL2**
Ontario, Canada	Replacement project	9 ktpy Cu as by-product
Vale's ownership: 100%	Underground mine	
Iron ore		
Dry concentration plant	**Capacity: 8 Mtpy DR pellet feed**	**Stage: FEL3**
Oman	Replacement project	Investment decision: 2023
Vale's ownership: N/A	Cleaner to produce DR pellet feed	
Green briquette plants	**Capacity: Under evaluation**	**Stage: FEL3 (two plants)**
Brazil and other regions	Growth project	Investment decision: 2023-2029
Vale's ownership: N/A	Cold agglomeration plant	8 plants under engineering stage, including co-located plants in clients' facilities
Serra Leste expansion	**Capacity: +4 Mtpy (10 Mtpy total)**	**Stage: FEL2**
Northern System (Brazil)	Growth project	
Vale's ownership: 100%	Open pit mine	
S11C	**Capacity: Under evaluation**	**Stage: FEL2**
Northern System (Brazil)	Growth project	
Vale's ownership: 100%	Open pit mine	

cont'd

Iron ore *(cont'd)*		
Serra Norte N1/N2[3]	**Capacity: Under evaluation**	**Stage: FEL2**
Northern System (Brazil)	Replacement project	
Vale's ownership: 100%	Open pit mine	
Mega Hubs	**Capacity: Under evaluation**	**Stage: Prefeasibility Study**
Middle East	Growth project	
Vale's ownership: N/A	Industrial complexes for iron ore concentration and agglomeration and production of direct reduction metallics	Vale signed three agreements with Middle East local authorities and clients to jointly study the development of Mega Hubs

[1] Refers to the most advanced projects (Bacaba and Cristalino).

[2] Indirect ownership through Vale's 44.34% equity in PTVI. PTVI will own 100% of the mine and has the option to acquire up to 30% of the plant as part of the JV agreement.

[3] Project scope is under review given permitting constraints.

Local Conference Call
Vale S/A(VALE3)
4Q22 Earnings Results
February 17th, 2023

Operator: Good morning, ladies, and gentlemen. Welcome to Vale's conference call to discuss fourth quarter 2022 results. At this time, all participants are in a listen-only mode. Later, we will conduct a question-and-answer session and instructions will be given at that time. This call is being simultaneously translated to Portuguese.

If you should require assistance during the call, please press the star followed by zero. As a reminder, this conference is being recorded and the recording will be available on the Company's website at: VALE.COM at the Investors link.

This conference call is accompanied by a slide presentation, also available at the Investors link at the Company's website and is transmitted via internet as well. The broadcasting via internet – both the audio and the slides changes – has a few seconds delay in relation to the audio transmitted via phone.

Before proceeding, let me mention that forward-looking statements are being made under the safe harbor of the Securities Litigation Reform Act of 1996. Actual performance could differ materially from that anticipated in any forward-looking comments as a result of macroeconomic conditions, market risks and other factors.

With us today are:

- Mr. Eduardo de Salles Bartolomeo – Chief Executive Officer;
- Mr. Gustavo Pimenta – Executive Vice-President of Finance and Investor Relations;
- Mr. Marcello Spinelli – Executive Vice-President of Iron Ore;
- Mr. Carlos Medeiros – Executive Vice-President of Operations;
- Ms. Deshnee Naidoo – Executive Vice-President of Energy Transition Materials;

First, Mr. Eduardo Bartolomeo will proceed to the presentation Vale's fourth quarter 2022 performance, and after that he will be available for Questions and Answers.

It is now my pleasure to turn the call over to Mr. Eduardo Bartolomeo. Sir, you may now begin.

Eduardo Bartolomeo: Thank you very much. Good morning, everyone, I hope you're all doing well.

In 2022 we substantially de-risked and reshaped Vale, we had strong deliveries in dam management and decommissioning, we advanced as expected with the

Brumadinho reparation, we created leverages for operational stability and flexibility, and we are simplifying our business portfolio, enabling a greater focus on our core businesses.

On top of that, we drew up a plan for the Vale of the future; a company that promotes sustainable mining, fosters low-carbon solutions, and remains capital disciplined.

Next slide. Before going to our performance in Q4, let me just reinforce that we just announced a new organization design for Vale's Executive Committee which will strengthen our core business, broaden technical excellence, and improve project execution. I will provide more details later on.

I'm also very happy to announce the appointment of Jerome Guillen as our first independent director for our energy transition materials business in line with the new management model that we had laid out during Vale Day. Jerome Guillen as our first independent director for energy transition materials business, in line with the new management model that we had laid out during Vale Day.

Jerome is a former president of Tesla Automotive and has played a key role in developing the EV market as we know today. He's a very normative and purpose-driven individual that will certainly add tremendous value to our energy transition materials strategy. As well, we continue to make substantial progress on the minority sale and expect to share additional details with you still in the first half of this year.

Moving on to our operations, in iron solutions we delivered strong results with fines sales up 24% combined with a strong price realization. Our all-in cost decreased benefited by lower freight rates. On the project side, the Gelado project is now under commissioning and that help us make us very confident about our production guidance. In our energy transition material business, our nickel production was steady with sales up 30% and production up by 6%, mainly due to the excellent performance of our Sudbury mines, which delivered the highest production rates since 2019. Also, Onça Puma had the best annual production in the last five years.

In copper, it was a quarter of important maintenance activities in Salobo and Sossego to ensure asset integrity, which is paving the way for a higher production rates in 2023. We successfully completed the startup of Salobo III, which will add 30 to 40 kilotons per year of copper at peak production capacity.

On product strategy, I would highlight Vale's long-term agreement with General Motors to supply battery grade nickel sulfate. This reinforces Vale's unique strategic position to be the supplier of choice to the EV industry. In our quest to become a leader in sustainable mining, we continued to deliver in many of our public commitments, such as in human rights, Amazon Forest protection, and the safety of our dams.

Finally, we walk the talk on cash return to our shareholders. We just announced a US$1.8 billion dividend for payment in March while remaining committed to our buyback program, about 43% completed.

Next slide, please. The redesign of our executive team is key to ensure a fit-for-purpose organization with greater focus on its core business and on delivering our strategic goals. We now have a dedicated structure led by Spinelli to accelerate the development of innovative products and solutions in iron ore and the improvement of our marketing strategy. Carlos Medeiros now has the challenge of accelerating the implementation of Vale’s management model, which will promote greater safety and reliability on Vale’s operations. Rafael Bittar was promoted to the executive team. He implemented with excellence our tailings and dams’ management model and now will lead our technical office, which incorporates safety and operational excellence, mineral exploration, and operational innovation. Alexandre Pereira will be entirely focused on implementing a state-of-the-art project planning execution from end to end to secure our long-term growth ambitions.

As you can see, we designed our organizational structure for efficient management of our operations and the development of innovative solutions for a carbon-neutral society.

Next slide, please. We are seeing unprecedented opportunities for segmentation and demand growth for high-quality products. Quality is key for the decarbonization of steelmaking and a game-changing transformation for the high-quality suppliers like Vale. There's no other company like Vale which combines volume and quality, innovative products, and supply chain to deliver the decarbonization solutions that the steel industry needs. Our iron solutions strategy is designed precisely for this purpose.

With those differentiators we are a partner of choice for our clients. We are establishing partnership with steel mills to find new solutions to decarbonize the industry. We have sign with clients representing almost 50% of our Scope 3 emissions. As you can see on the chart, we are projecting a higher average iron content in our iron ore portfolio starting in 2023, this would give us much higher quality premium on prices. It's a quality and a price game.

Just as a reference of how much value we can generate on quality, each one percentage point increase in average iron content corresponds to around US$550 million of incremental EBITDA. The commissioning of the plus 20 project in the S11D and the Gelato project, which I already mentioned, will help us achieve growth, higher quality and better prices. In the Southeastern and the Southern Systems, we are increasing concentration process to deliver high-quality feedstock with the 4 filtration plants in Itabira, Vargem Grande and Brucutu that we delivered recently. And concentration is key to a high-quality low-carbon supply, reason why we signed up for the development of mega hubs in the Middle East.

And finally, we are also about to start up our first green briquette plant. In the first half of 2023, we faced 6 million tons production capacity as originally planned.

Next slide, please. In our energy transition material business, we have the right assets in the right jurisdictions making us the ideal partner for delivering high-quality products to our customers. In 2022 we entered into strategic nickel supply agreements with Northvolt and with General Motors, in addition to an MOU for nickel processing between PTVI, Huayou and Ford Motor Company. We are developing a first-of-its kind plant in Canada and North America to produce nickel sulfate from high-purity, low-carbon nickel from our Canadian refineries. This project is a natural extension to our business offering diversified sales with a greater footprint in the North American EV market.

Nickel production increased 6% in 2022 mainly due to the stabilization of Sudbury operations and the consistent and strong performance at Onça Puma. Copper production declined by 15% to 253,000 tons in 2022 due to extended maintenance at the Sossego mill during the first half of the year and additional maintenance required at Sossego and Salobo. With the maintenance completion and the startup of Salobo III, our copper production should grow materially in 2023.

In short, we have the assets, we have the innovative technology, and we are building the client engagement and the supply chain. With that, we have the will and the conditions to take Vale to the leadership of a sustainable mining on the critical mineral´s world.

Next slide, please. Safety is the basis of our work and culture, and we are proud to have achieved historic results in 2022. We reduced more than 80% the number of high-potential recordable injuries since 2019 in key critical activities. Vale has now the lowest TRIFR rate in 15 years, we are also 40% completed in our goal to eliminate all our upstream dams.

The B3/B4 dam had its emergency level reduced from high to medium after successful safety improvements; an important milestone in the journey to eliminate critical safe conditions in dams by 2025. Vale is around 90% adherent to the requirements of the Global Industry Standard for Tailings Management, which gives us confidence that we will be 100% compliant by 2025, and we will continue to pursue the highest safety standards and operational excellence, making sure safety is incorporated into the company's culture.

Next slide, please. At Vale we are making sure that sustainable mining is at the core of all our actions. On our journey to reduce Scopes 1 and 2 emissions, we established a natural gas supply agreement for a pelletizing plant in São Luís. We are also testing biochar in our metallurgical and pelletizing processes while progressing with the conversion of 2 pelletizing plants to green briquettes in Tubarão, as mentioned before.

We have a voluntary commitment to protect and restore additional 500,000 hectares of forest by 2030, we protected and recovered 51,000 hectares in 2022 bringing the total to 172,000 hectares since 2019, or about 34.4% of the long-term goal. On human rights, 100% of Vale's operations in Brazil are covered by human rights due diligence. As you know we have a goal of taking 500,000 people out of extreme poverty by 2030. In 2022 we detailed our action plan. In 2023 we will start a pilot project to benefit 30,000 people from areas neighboring Vale's operation and in other locations.

In Brumadinho, we delivered 58% of the commitments set by the reparation agreement within stablished deadlines. In Mariana, the Renova Foundation provided 315 housing solutions in 2022, this means Renova provided a total of 441 housing solutions so far, or about 60% of the resettlement requirement.

In conclusion, we have materially de-risked Vale, and we are delivering on our commitments to a safer and more sustainable company. With that I am sure that we are building a better Vale.

Now I'll pass the floor to Gustavo, who will detail our financial results and I'll get back to the Q&A at the end. Thank you.

Gustavo Pimenta: Thanks Eduardo and good morning everyone. Let me start with our EBITDA performance for the quarter. As you can see, we delivered a solid US$5-billion EBITDA in Q4, US$1 billion higher than Q3 2022. This US$1-billion increase is mainly explained by our strong sales performance in the quarter with iron ore fines up by 15.8 million tons and nickel up by 13.9 kilotons. Price realization for iron ore fines also contributed to our better performance, and I'll provide more details about that on the next slide.

Bunker and oil cost was positively affected by US$250 million due to lower freight costs mainly as a result of lower bunker prices. In others, the main driver was the US$224 million one-off tax agreement in Pará, which I will cover later in my presentation. So, back to iron ore price realization, the average reference price for the quarter was US$ 99 per ton, our average premium was US$1.6 per ton, up US$1.00 versus Q3 as a result of better sales mix. The pricing mechanism effect had also a positive impact on our final realized prices. This is largely explained by the higher forward prices at the end of December. Around 31% of sales were booked at an average price of US$116.3 per ton. You can see this effect on provisional prices in current quarter, which contributed with US$5.3 per ton. Before the adjustments from moisture and FOB sales, price realization was about US$107.4 per ton, 8.5% above the benchmark price.

So, in summary, we delivered a realized price of US$95.6 per ton, up US$3 per ton versus Q3 despite a decrease in benchmark prices of US$3.3 per ton.

Now moving to iron ore all-in costs. As you can see at the bottom of the table, our EBITDA breakeven cost came down by US$2.8 per ton to US$48.5 per ton. This is explained by 3 main factors: first, the 18% decrease in sales from third-party purchases, which contributed to US$1.2 per ton in our C1; second, our freight performance which contributed with the cost reduction of US$3.6 per ton due to lower bunker prices and better freight rates; and US$1 per ton resulting from higher finance premium due to a better mix.

On royalties, Vale joined a program with the government of Pará in relation to the increase of TFRM, which is a fee to fund the government supervision of mineral production activities. This agreement, which covers the entire 2022 fiscal year, was fully recorded in Q4. Excluding this one-off event, the royalties' line in Q4 would have been US$2.7 per ton lower with all-in EBITDA breakeven of US$45.8 per ton versus the US$48.5 per ton recorded. For 2023, we forecast a decrease of US$2 per ton in the EBITDA breakeven due to higher average quality of our product portfolio and lower fuel costs.

Now turning to energy transition materials, our EBITDA more than doubled quarter on quarter, reaching US$775 million. This was mainly driven by better price realization for both nickel and copper, as well as a 30% growth in nickel sales and a decrease in nickel unit cost by 16% in the quarter.

Now looking at all-in costs, in nickel all-in unit costs dropped by 2.600 per ton mainly driven by lower cost of goods sold. As you may recall, in Q3 we had a carryover of high-cost inventories which was a one-off impact to our Q3 cost of sales. For 2023, we project nickel unit cost to be relatively flat as we don't expect to change our purchased-feed strategy in the short term despite higher expected productivity in Sudbury. In the mid-term, we expect a reduction in nickel cost as we ramp-up VBME.

Now moving on to copper. Copper all-in unit cost was up due to lower volumes from South Atlantic operations after maintenance at Salobo and Sossego plants. We expected unit costs to go down on the back of higher volumes associated with better operational performance at Salobo and Sossego and the ramp-up of Salobo III.

Now moving to cash generation. As you can see, free cash flow generation was largely impacted by working capital and Capex, which are usually higher in Q4. The working capital variation is largely explained by the US$2.1 billion increase in Accounts Receivable mainly due to higher accrual sales volume for iron ore, together with the positive effect of US$21 per ton on higher iron ore provisional prices. These invoices will be collected in Q1 this year and we expect the effect on working capital to revert in the following quarters.

We also repurchased around US$1 billion in Vale shares in Q4, which is aligned with our capital allocation strategy. So, let me talk more about our capital allocation strategy in the next slide.

Since April 2021, we bought back 683 million shares, or 13% of the initial number of outstanding shares. This means a 15% increase in concentration of earnings and dividends on a per share basis. Also, yesterday we announced US$1.8 billion in dividends to be paid in March 2023.

So, before opening up for questions, I'd like to reinforce the key takeaways from today's call. As Eduardo mentioned, Vale re-designed its Executive Committee to ensure a fit-for-purpose organization with greater focus on our operations and on delivering solutions for the global energy transition. In that sense, we are taking actions to serve a growing market demand for quality products leveraging on our unique mineral endowment and innovation capabilities. For example, the high-grade pellets and briquettes, the mega hubs initiatives and the low-carbon nickel products.

We also remain focused on delivering new projects to meet our production guidance and to make sure we sustain the unique competitive advantage of Vale.

And finally, we remain highly committed to a disciplined capital allocation process as evidenced by our highly accretive buyback program and dividend payout.

Now I would like to open the call for questions. Thank you.

Question and Answer Session

Operator: Thank you. Ladies and gentlemen, we will now begin the question-and-answer session. We advise that the question should be asked in English.

If you have a question, please press the star key followed by the one key on your touch tone phone now. If at any time you would like to remove yourself from the questioning queue, please press star 2. Please, restrict your questions to 2 at a time.

And our first question comes from Leonardo Correia, with BTG Pactual.

Leonardo Correia: Good morning everyone, thank you. Can you hear me well?

Eduardo Bartolomeo: Yes, yes, we can, Leo.

Leonardo Correia: OK, perfect. Thank you. So, my first question goes to Gustavo. On the notes of still of cash returns, Gustavo, you… I mean, Vale has been very active on the buybacks over the past quarters, and since you joined Vale, your message has been very clear on buybacks and the preference for buybacks, right. I think Vale has really stepped up the game on that front. Since the recent lows, Vale has rebounded like 40-50%, the stock has performed quite well over the past months. In this context, the stock has reweighted as well versus Australian peers, we see that rerating process probably complete, the multiple is now more aligned, which is fair. So, in this context, Gustavo, how do you see the balance of now sustaining this buyback in the context of, let's say, a higher priced share vis-à-vis paying that balance in extraordinary dividends?

So, I just want to see how you see the current trade off given where the share price is and the recent Vale.

And the second question on cost, I think we had a pretty reassuring number in terms of delivered costs into China. The number has declined from US$51 to about US$48 this fourth quarter, I mean, looking forward, given the deflationary pressures we're seeing, the oil prices still quite depressed, if you think of freight rates Brazil to [unintelligible] the number is US$16, still below the freight rate that you guys are booking and I understand that you have a good part of that which is long-term contracts, but just putting everything together can we see the delivered cost into China falling below US$45 by year-end? Or how are you seeing the evolution of those costs?

Thank you very much.

Gustavo Pimenta: Thanks, Leo. So, on the first one, as you know, we have a very attractive dividend policy, the 30% EBITDA less sustaining, which is somewhat close to a 50% payout, so we've been performing on that. And on the buyback, as you know, we've been walking the talk, delivering and executing on the buybacks, especially when prices are softer. Quite frankly, we continue to believe that even at the current levels this is probably one of the best (if not the best) investments that we have buying back shares and we will continue to do at those levels, we will continue to believe that these investments at the current level is highly accretive for our shareholders.

On the cost, I mean, the guidance that we have provided for 2023 is about 47, so US$2 lower than what we posted last year, so we'll have to see. I think a lot will depend on how bunker performs, certainly year-to-date freight rates are better, about US$3 altogether, so that could be an upside, but so far we're keeping the 47 as our guidance for 2023.

Operator: And our next question comes from Rafael Barcellos, with Banco Santander.

Rafael Barcellos: Hello, good morning and thanks for taking my question. My first question is about briquetting. I mean, how is the briquetting project evolving and how has been your commercial strategy on these as I think we are approaching the startup, and of course, how your costumers have been reacting to that?

And my second question is about the base metals division. Could you please elaborate on how are you seeing operations evolving now in the 1Q, not only on the cost side, but also on the production side? And which type of contribution to Vale we could expect from Tesla's former executive, who just joined the Board? Thank you.

Marcelo Spinelli: Thank you, Rafael, for your questions. It is Spinelli here. Talking about the briquette, the green briquette, so as you mentioned, we expect the startup this year for the first industrial plant in the first half/second half. So, this is the year for test, so industrial test in our clients. We've been developing the blast furnace briquette and we've been testing around Brazil in all the kind of size of blast furnace, so that would be another test, so we're going to explore the seaborne, all the impact in the vessels. So, that's a year for test. And also, direct reduction will be a possibility to foster and increase the speed to test in our clients.

So, for this year it's about test. All the commercial strategy is similar to the pellets and from next year we'll be evolving in our agenda to expand our production to the mega hubs and to our clients in all the parts of the world.

Eduardo Bartolomeo: Rafael, I'll lay the question for Deshnee to go over the performance, but I want to explore your second part of the question around Jerome. I think, as we've been continuously saying, we have unique assets and opportunity in what I say revolution energy of the world, and I think Jerome is part of this, he's is 10 years in Tesla, he's been through and made what we know what is the EV world today, so he will help us a lot on guiding us, on helping us and the Board together with me and other peers that we're going to construct to unblock the tremendous value that we have inside this business.

Absolutely, he is one profile that fits because he comes from OEM, we're looking for other profiles as well that will help us with underground mining for sure for with the base metals experience, so when we said “let's carve out the business, let's ring fence base metals is exactly to attract talent, top people and I think this is a good example, and again, I'm so glad that he took the challenge to come and extract this unperceived value of the base metals business at Vale.

And I think Deshnee can elaborate in your question around the performance, and I think we are doing good stride on that side as well, and still a lot of challenges as well. OK, Deshnee, please.

Deshnee Naidoo: Thank you for that, Eduardo, and thank you for the question, Rafael. So, if I look at nickel and as we guided at Vale Day, nickel will be very similar to the production levels that we achieved last year, but with 2 changes: we will take the Onça Puma furnace I down in Q4; and we will take the Creighton shaft down for overhaul in Q3. But despite that and because of the productivity gains that Eduardo mentioned in terms of Sudbury, we're still expecting to keep production largely flat in the rest of the business and outside of Sudbury and after completing the PTVI furnace for rebuild last year PTVI will give us a delta 10,000 tons in the year.

So, that's a nickel, but I think because of the seasonal impacts of P&P that we generally do in the first half, we'd have a similar year for nickel where you see the production back ended to the second-half including sales as well.

Coming to copper, so copper there's 3 changes that will happen this year: the first one is a North Atlantic, but we'll see about a delta 10,000 tons year-on-year and that's largely from the improved support that we did last year following some of the seismicity events we've had that we've since supported and was great to see not only, as you know, Eduardo mentioned, nickel had a great quarter last quarter, but so did copper for us out of Sudbury. The game that we need to win at this year is the backlog maintenance at both Salobo and Sossego.

And turning to Salobo quickly, we've now moved this into a very structured program where we've mapped out not only all of the risk based on loss profile, but the action that we need to follow to both catch up on some of the backlog maintenance, but as well as keep up to the maintenance schedule that we've had. And again, we have had a good January which tells us that we are on the right plan.

Now we all know that in order to be successful, what gets measured, gets done. So, we've actually put the Salobo operations into a PMO structure so that we now as a leadership team can see weekly all of the work that is happening. That will give us about a delta of 45,000 tons from last year's performance across both Salobo I and II plant, as well as the Sossego plant. But the real win for us this year is making sure that we can continue on the ramp up plan of Salobo III plant, which will give us about a delta 50,000 plus in the year. And again, Rafael, that will be back ended just because of the nature of the ramp up curve that we have, but we're very happy to report that as of today both lines are operating in Salobo III.

So, the way to look at the performance nickel similar to last year with some of the exceptions I mentioned, copper we are targeting the guidance and it will come from the delta that we're going to get in terms of the maintenance that we are doing, but because of the Salobo III ramp up back ended into the second-half of the year.

Operator: Our next question comes from Caio Ribeiro, with Bank of America.

Caio Ribeiro: Good morning, thank you for the opportunity. So, my first question is on the base metals division. If you could share some updates in regards to the process of potentially selling a 10% stake in the division that would be very helpful, especially in regards to the timing of concluding the transaction. First half 23 is still valid? What profile of investors you're in discussion with? And what do you plan to do with the potential sales proceeds?

And then secondly, if you could also provide an update in terms of discussions around the renegotiation of the Renova framework agreement, whether there is any timing, any definition of potential amounts already agreed that would be great too. Thank you.

Gustavo Pimenta: Thanks, Caio. This is Gustavo, so I'll cover both. On base metals, it's moving quite well, quite frankly we are expecting to have news in more details as we said before in the first half of 2023, we're discussing the opportunity with different parties, great parties that we think it's going to add a lot of value to this story. So, stay tuned. We should be using a larger portion of the proceeds to fund growth. This is a business that should be investing in new platforms going forward that I think it's going to be highly accretive, good level of returns and so on, so the idea is that a lot of the resources will be used for that.

On the TTAC renegotiation, Renova, we continue to evolve on the discussions, I think the new government has been vocal in the sense that they are also reinforcing a desire to settle, which we all think it's a good thing. So, our expectation is that we'll be able to find a resolution and settle the renegotiation this year in a format that works for everybody.

Operator: Our next question comes from Carlos de Alba, with Morgan Stanley.

Carlos de Alba: Thank you very much, good morning everyone. So, a couple of questions. Coming back to the base metal business, I don't know what else can you elaborate, but maybe how did you see the Vale rerating that a transaction in base metals can take place? Do you see more coming from a multiple rerating or do you think that is more ready the performance of the business that fortunately even though in the last few months it has improved, over the last several years it hasn't been stellar.

So, could you maybe articulate, Bartolomeo or Gustavo, on how do you see this playing out? Do you attribute this to multiple rerating, transparency, structure of the business, institutional structure and leadership structure or more to the performance going forward being better on a sustainable basis?

And then the other question, if I may, Gustavo, it has to do with the CSLL and recent decision by the STF, because the government would be able to get the money on tax disputes before the process or the dispute come to an end on an exhaust on the legal avenues and it could be in theory retroactive? How much Vale is exposed to that?

And also continuing with the tax situation, there was a proposal, a provisional measure that would change the transfer pricing practices in Brazil. How is Vale exposed to that provisional measure? Thank you very much.

Eduardo Bartolomeo: OK, Carlos, I'll let Gustavo go to the second one, but again, maybe all the above that you mentioned because let's be frank I think the name of the game here – I've been saying that for a long time – is execution. Why are we ring fencing the business? Because we believe that doing the right incentives, the right motivations will allow us to improve our performance. It's happening by the way, you noticed that and we're finishing this ring fencing, so Deshnee is going to have all her ex-co together with her directly focused, the governance that we are building together is around attracting people like I just mentioned, Jerome and others that you see in the next months as we evolve in the design of this governance.

But fundamentally, why bring somebody else to the table now? That's a good question, a fair question to answer, and I said that we would do anyway, right, so just be in mind that if eventually we don't have a right proposal because we want with this is an anchor to promote the acceleration of the execution, we spent already 16 years on that, we don't have another 16 years for that. So, if I'm able to bring somebody that shares the same perception of value like I mentioned that Jerome did as a Board Member and this guy is a partner, a financial partner, a strategic partner that can help us again accelerate the execution that would be the fundamental reasons why we carved out, ring fenced and sold a minor participation.

We don't want to put a lipstick on the peak, we want to make this business really, really excel. And I'm sure the rerating is key here, it's not only because Vale has rerated, as I think Leo mentioned, I think the whole industry is underrated, the whole industry is ridiculous underrated, and I'm not talking about the mining industry. We cannot be in the basis of the energy revolution and being taking multiples as we speak. And evidently if I move the green metals, copper, nickel, cobalt to a separate entity that makes it easier to people understand the criticality and the growth that's coming.

That's the next reason why we're doing that because if you understand the needs of cash for this business, we're talking huge amount of money, we're talking about US$20 billion, and I think Vale's iron solutions' shareholder eventually wouldn't like that as well. So, why not have this option in the near future if you are executing well?

So, sorry for the long answer, Carlos, but it's all and above, and I have zero doubts that we are in the right path, I have zero doubt that we're going to execute much better than we have been executing, I have zero doubt that we're going to have rerating and a rerating much more above, and I think mining industry has to be rerated. It's unacceptable to be rerated like rated everybody, I'm not talking about Vale, I'm talking about the mining industry. So, we are so critical to the world – and you know exactly what I'm talking about valuations.

So, long answer, sorry, but that's a fundamental thing for us, this is the most important strategic matter in our portfolio today, and we will have time to talk about iron ore, by the way. I never saw a call with so many questions about base metals. I think that shows the interest.

Thanks, Carlos, for the question again. I will ask Gustavo to go over the…

Gustavo Pimenta: So, Carlos, just to complement quickly here on the tax, the CSLL we've booked 100% of the potential impact on Vale in Q4, which was US$150 million, so that's fully provisioned including the interest and penalties, so you probably heard there has been discussions around giving some relief on penalties which we are following closely, but at this point it's fully resumed, US$150 million of impact in Q4.

On the transfer pricing, we saw it very positively actually, because I think the view here is that the regulation will follow the OECD principles, which is what Vale already follows. So, I think to a certain extent it gives transparency and clarity on the regulation that Vale has been already following, so for us was a positive move.

Operator: Our next question comes from Vanessa Queiroga, with Credit Suisse.

Vanessa Queiroga: Hi, thank you for taking my question. I have a couple. The first one is if you can discuss how you see the current demand for higher grade iron ore and agglomerates. I mean, in the very short term we are well aware of the fundamentals for that medium and long term, but just wondering what is your sense of the current market conditions for those products.

And the second one just to add on the questions about base metals, we've seen and we've heard that potential partner could be either a player in the automotive sector or a financial partner. So, can you discuss a bit further on what are the different virtues that you see in either profile for the potential strategic partner? Thank you.

Marcelo Spinelli: Thank you, Vanessa, for your questions, it's Spinelli here. Well, let me talk about the short-term and mid-term. So, short term in pellet business, the agglomerate business now is pellet, so we're moving to green briquette so far, but actually blast furnace pellet in the last quarter we had some adjustment in the demand because of all the problems in the energy in Europe, so Europe is an important client, but so far so good, they didn't have that huge impact that we were expecting, so the demand is strong for this quarter and next quarter.

Direct reduction is really with a good demand in the Middle East, so Middle East and the US today are the main users for direct production route. So, so far, they have some adjustment in their price, but the demand is there, and you see the demand and the production in the level that we announced in our guidance.

But I have some news in mid-term, I just came from China, actually I was the first major in presence in China so far after COVID, and one thing is they are… and it's funny because I expected that the Europeans would come in the first moment for the mega hubs, all the strategies that we have to improve the production for pellet, and they're really interested on that. We believe in that trend of growing the use of scraps in China, but they are struggling to speed up that supply of scrap and they will need the pellets for that, so they are aiming to join us in this mega hubs project.

And also, our team was in Japan and Korea, and so far, they are already investing in some places where we have [unintelligible] that is in Oman, also Ras Al-Kahir in Saudi Arabia. So again, it is happening and for the mid-term carbon price will make a real important difference, and so far, the clients are coming. So, we are excited to keep our strategy and we are sticking on that.

Gustavo Pimenta: Vanessa, Gustavo here. Just on the on your second question, look, we are keeping this certainly close to us in terms of details of potential interested parties. What I can say at this point is we are looking at potential partners that believe on the energy transition, believe on what Eduardo highlighted early in terms of electrification of everything, EV transition, that sees the long-term value of base metals and is willing to support our strategy. So, that's the type of profile that we are looking at, so we'll make sure we share those details later once we finalize those conversations.

Operator: Our next question comes from her Rodolfo Angele, with Banco JP Morgan.

Rodolfo Angele: Thank you. I have 2 questions. My first is (I think) a hard one, but I would like to hear your thoughts. What I'm hearing from this call is there is a big change happening at Vale and you're positioning the company to be a key player in a world that's going to be very different, and indeed the company has very unique assets, both in the base metals and in the iron ore space to kind of deliver that. But we still feel… I don't know, there's a gap of time until we get there, and in the meantime, we're of course looking at what's happening, we’ve discussed costs, we’ve discussed a number of things here.

So, my question to you is when or what are the key kind of first indicators that will make clear that for investors that we're getting to a point where profitability is increasing because of the profile of products the company has, because of the changes that are being implemented and if you think that will happen before a rerating of the sector or not? So, that's more of a concept question.

And the other question is, I'm sorry, it's going to be a bit more boring, I just wanted to know if you can provide us on the base metals cost guidance assumption what your assumptions are embedded there for by-product credit. So, that's it for me, thanks.

Eduardo Bartolomeo: Well, Rodolfo, as you said, hard question, but excellent question. I'll try to be brief because it's around everything that we've been talking about, right. If you look at this iron solutions business, there's a fundamental shift that we're trying to push on everybody's mind and ourselves’ by the way, that's why we redesigned the organization taking Spinelli completely focused on the marketing and the strategy, bringing Medeiros to face the most immediate challenge that you mentioned.

How can you perceive that? It's the increase of production of pellet feeds and feed of quality in the northern system that will bring exactly that percentage point that I mentioned to the model that you model because, of course, we have to be on the lowest quartile, we have the better assets, some cost pressures, but you do it with final cost, and if we dilute for 340 as you model, obviously we will help. But fundamentally, it's a percentage of iron ore quality that is the iron solutions that where we segment the market, where we play the high yield.

Remember the slide on the presentation that we showed that this year we improved like 0.7 percentage point but we want to improve like 2 points percentage? I know if you remember Vale Day, we put Carajás, we’ve been able to concentrate to 67, that's where you're going to start seeing the true premium and we're going to do a webinar about that by the way, it’s not a place to announce this kind of thing, but we are doing a webinar to give even more details about that for you because people are not factoring that. We mentioned that in Vale Day and we're going to talk a little bit more. So, that's one part of the equation.

Second one, I'll try not to repeat my whole speech about base metal, but that's ridiculous undervalued, everybody not only us. The kind of demand that's coming over us on nickel, on copper, on cobalt and everything, on lithium, etcetera is not priced, and we need to be able to deliver the projects. So, I think if you ask me where the key points are, delivering the guidance, delivering the effectiveness of our current operations because we still have great assets that could perform better – I would say underperform, but they could perform better – they are getting better performance, like in copper, as Deshnee mentioned on nickel and the growth because there's the growth. Like Salobo III, we're very excited with Salobo III, Salobo III started up very well, those kind of assets are the ones that are going to bring growth to the market and people are going to start appreciating that.

And when you look at the percentage of the participation of base metals in our in our cash generation, and again going back to your model, redo it because you're underestimating the size of cash generation that we're going to be able to bring if we execute the projects. So, that's why again we focus our organization on that sense.

So, conceptually speaking, it's that, I think it's a bit of not only time, I think I'm not trying to buy time here, we're doing, we're executing, we are buying back Vale – that's another extremely high avenue of growth and you do much more better calculations than I do –, we increased 15% the bases, we're going to buy more 7%, we're going to renew our buyback program.

So, I think it's a long-term game, I always said that, this kind of business is not a sprint, it's a marathon and people that believe in the marathon is going to make a lot of money, as we are doing already, right. So, let's be honest, I think Vale has been really accretive and it has a lot much to do, and I think your questions are the truth was that investors should really think about, and people that jump in the bus now would be very happy in the medium term.

Thanks for the question.

Gustavo Pimenta: Eduardo, just complementing on Rodolfo's question on the second one, on the cost. So, Rodolfo, we are taking certainly the benefit of by-products based on market prices, this is the numbers we are currently using. For 2023, we have guided copper at 3.200, it's better than last year as we're bringing Salobo online, resuming capacity at Salobo I and II and bringing Salobo III online. And in nickel, we are at 13,000. So, similarly to last year, as volumes are somewhat flat as Deshnee has highlighted.

Operator: Our next question comes from Daniel Sasson, with Itaú BBA.

Daniel Sasson: Hi everyone, thanks for taking my questions. My first question is on the TFRM in Pará. If I´m not wrong, basically Pará was trying to triple the taxes that they charged, and you actually reported higher royalties or higher expenses with royalties in your iron ore business this quarter and you explicitly mentioned a US$2.7 per ton cost increase because of an agreement with the Pará state. If you could just give us more details on how or by how much the final taxes really increased that would be great.

And just a quick follow-up on the iron ore cash cost. You mentioned that you're comfortable with your US$47 per ton guidance for the year, but if you could comment a bit on the marginal cost that you're seeing in the industry right now after the very strong cost inflation that we saw during 2022, but then again we are now seeing lower bunker prices as you mentioned, lower freight rates.

So, if you could give us a sense on where you see the marginal production cost standing right now that would be great. Thank you.

Gustavo Pimenta: Thank you, Daniel. I'll let Spinelli cover the marginal cost of the system. On the TFRM, the increase is in reais actually, it's around R$8, so in dollar is about 1.6 per ton from the north. So, this was a long dispute we had with the state of Pará and we decided to settle, part of the increase will be dedicated for local investments that we're planning to do social-related and others, so that's the impact you're going to see from now on.

As I mentioned in my prep remarks, we booked everything in Q4, that's why you saw that large variation in our Q4 performance.

Marcelo Spinelli: Hi, Daniel, Spinelli here. So, you're right, there's a movement that for us is better than our competitors actually, we are more exposed to the freight, and what we need today our long-term the price is the 70 that used to be in the past, now is 90 despite all those ups and downs in terms of cost, that's a long-term price in average.

And again, it's important to say we were the benchmark last year in terms of all-in costs because of our high-grade ores, so the premiums are playing an important role and that mid to long-term strategy that we see, the premiums will play a very important role to make Vale in the first quartile of the cost curve.

Operator: Our next question comes from Amos Fletcher, with Barclays.

Amos Fletcher: Yeah, good morning everybody. So, I just had one question on base metals. I just wanted to play devil's advocate here and ask why does it make sense to bring an OEM onto the shareholder register and the Board of the base metals business? I'm just concerned I guess around potential for conflict of interest as in [unintelligible] low nickel and copper prices that Vale shareholders won high prices? So, I guess my question is why can't OEM be in as a shareholder when you can sign offtake volumes as you've already been doing with Tesla and GM, etcetera? Thanks.

Eduardo Bartolomeo: OK, Amos. I'll ask Gustavo, Gustavo is leading the process. Just to be clear, Jerome is a former guy, right, so I think you are asking about the partnership. Go ahead.

Gustavo Pimenta: Yeah, so Jerome is no longer with Tesla, right, so what we are after is his innovation capability, his understanding about the EV market, we think it's going to add a lot of value to the Board.

Regarding your reference to GM, we haven't commented on any potential candidates, so I won't comment on that.

Operator: That does conclude today's question and answer session. Mr. Eduardo Bartolomeo, at this time you may proceed with your closing statements.

Eduardo Bartolomeo: OK, thank you. I think very exciting moments, right, I think a different call, good to have a different call once in a while, I don't know, nobody asked about China, China is doing fine, China is going to improve, but anyhow, I think we are in a good start, I'm going to push on the Gustavo's remarks in the end, the organization after the reshaping as we exempted all the assets that were draining cash inside Vale, we were able to repurpose our people, we have a great team here at Vale to execute the strategy, we are taking the actions, as was asked by Rodolfo, we need to put quality truly on the market with volumes, our volumes are coming back with quality, we're not going to put anything else besides quality, and we're going to have to make iron solutions be real.

In base metals, energy transition now we need to educate ourselves as energy transition materials, the opportunities are huge, as we discussed during the call and execution of the project and the operations are key.

And finally, we will remain capital disciplined. I think our checkbox list is we've been very critical to assign value to our shareholders and to our stakeholders, society, as we discussed before, has to perceive Vale as desired – and not only Vale, I mean, mining, we´re not in this game alone –, it's an effort to supply the critical minerals that are needed for society, that's a collective effort, society has to recognize that, and when that does happen I would truly believe that not only Vale but the whole sector will be rerated.

So, with that I would like to thank you for your attention, your questions and hope you all keep safe and hope to see you in the next call. Have a good day.

Operator: That does conclude Vale’s conference call for today. Thank you very much for your participation. You may now disconnect.

Vale's production and sales in 4Q22 and 2022

Rio de Janeiro, January 31st, 2023

- Vale's Q4 performance was marked by strong iron ore fines and nickel sales, up 24% and 30% q/q respectively, converting into sales the inventories formed in the previous quarter.
- Iron ore production totaled 308 Mt in 2022, 2% lower y/y, mainly due to (i) licensing delays at Serra Norte; and (ii) jaspilite waste processing and operational performance at S11D. This was partially offset by (i) continued production ramp-up at Vargem Grande; (ii) higher dry processing production at Brucutu; and (iii) higher third-party purchase.
- Pellets production totaled 32 Mt in 2022, up 1% y/y, with an improved mix of direct reduction pellets (49% of total production vs. 41% in 2021), leveraging on the higher-quality feed and taking advantage of better market premiums.
- Nickel production grew 6% in 2022 to 179 kt, largely due to the stabilization of Sudbury operations after the labor strike in 2021, as well as consistent and strong performance at Onça Puma. This was partially offset by lower feed availability owing to PTVI furnace rebuild and the later ramp-up of VBME.
- Copper production decreased 15%, totaling 253 kt in 2022, due to extended maintenance at Sossego mill during the first half of the year, and additional maintenance required at both Sossego and Salobo. This was partially offset by higher production in Canada owing to the stabilization of Sudbury mines and the recovery of copper from copper precipitates in Thompson, reducing waste as part of our approach to circular mining.

Production summary

000' metric tons	4Q22	3Q22	4Q21	2022	2021	% change 4Q22/3Q22	% change 4Q22/4Q21	% change 2022/2021	2022 guidance	2023 guidance
Iron ore[1]	80,852	89,701	81,678	307,793	312,901	-9.9%	-1.0%	-1.6%	~310 Mt	310-320 Mt
Pellets	8,261	8,256	9,073	32,111	31,708	0.1%	-8.9%	1.3%	~33 Mt	36-40 Mt[2]
Nickel	47.4	51.8	48.0	179.1	168.3	-8.5%	-1.3%	6.4%	~180 kt	160-175 kt
Copper	66.3	74.3	77.5	253.1	296.8	-10.8%	-14.5%	-14.7%	~260 kt	335-370 kt

[1] Including third-party purchases, run-of-mine and feed for pelletizing plants. Excluding Midwestern System volumes.
[2] Iron ore agglomerates guidance, including iron ore pellets and briquettes.

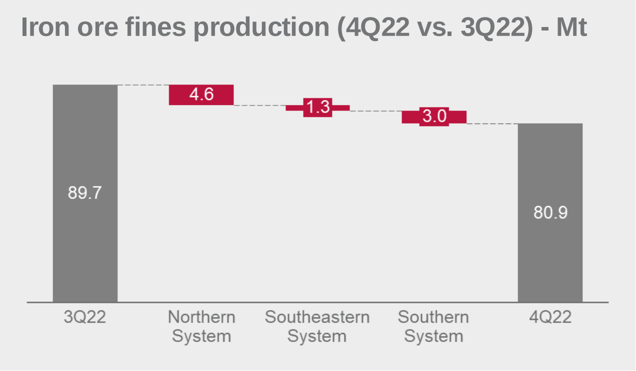
Sales summary

000' metric tons	4Q22	3Q22	4Q21	2022	2021	% change 4Q22/3Q22	% change 4Q22/4Q21	% change 2022/2021
Iron ore fines[1]	81,202	65,381	81,749	260,663	270,885	24.2%	-0.7%	-3.8%
Iron ore pellets	8,789	8,521	10,351	33,164	32,306	3.1%	-15.1%	2.7%
Iron ore ROM	1,963	3,668	607	8,216	2,052	-46.5%	223.4%	300.4%
Nickel	58.2	44.3	44.7	180.8	181.7	31.4%	30.2%	-0.5%
Copper	71.6	70.5	73.7	243.9	284.5	1.6%	-2.8%	-14.3%

[1] Including third-party purchases. Excluding Midwestern System volumes.

Businesses' highlights in 4Q22

Iron Ore and Pellets operations



- **Iron ore fines and pellets sales increased 22% q/q**, totaling 90 Mt, boosted by the drawdown of in-transit inventories formed in Q3. **All-in premium totaled US$ 5.4/t** [1] (vs. US$ 6.6/t in 3Q22), mainly due to lower contractual pellet premiums, after record premiums in Q3.

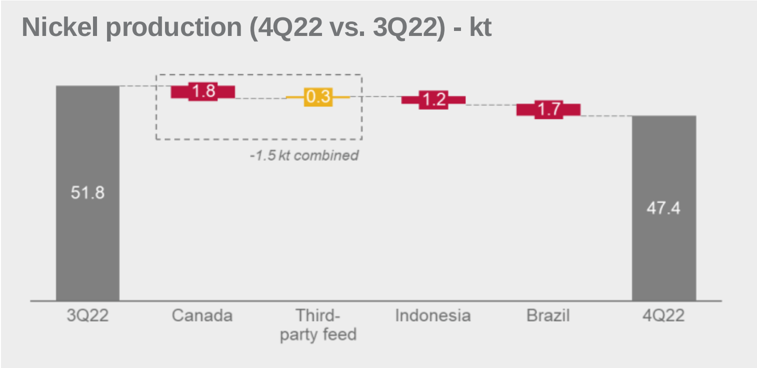
- **Northern System production decrease q/q** is largely explained by seasonally higher rainfall level[2] and Serra Norte's performance, impacted by (i) lower ROM availability as a result of slower licensing processes; and (ii) processing plants' conveyor belts maintenance in October and November.

- **Southeastern System and Southern Systems' production decreased q/q,** impacted by seasonally higher rainfall level[3] in Minas Gerais region. Additionally, Southeastern performance was affected by a planned maintenance carried out in Alegria's mining equipment, while Southern System results were impacted by lower third-party purchase.

- **Pellet production was flat q/q**, driven by the higher pellet feed availability for Tubarão plants and the resumption of Plant #5, increasing Tubarão pellet production, which was offset by a maintenance carried out at Plant #7 in Tubarão complex and São Luis plant.

[1] Iron ore premium of US$ 1.6/t and weighted average contribution of pellets of US$ 3.8/t.
[2] Rainfall level: 472 mm at Serra Norte in 4Q22 (vs. 31 mm in 3Q22) and 421 mm at S11D in 4Q22 (vs. 36 mm in 3Q22).
[3] Rainfall level: 577 mm at Mariana Complex in Southeastern System in 4Q22 (vs. 35 mm in 3Q22) and 716 mm at Vargem Grande Complex in Southern System 4Q22 (vs.44 mm in 3Q22).

Nickel operations



- **Nickel sales were 31% higher q/q and 23% greater than the quarterly production**, as expected, following the inventory buildup in Q3 to meet sales commitments during planned maintenance at Long Harbour and Matsusaka in Q4.

- **Finished nickel production from Sudbury-sourced ore decreased 9% q/q**, as mine and mill maintenance activities in Q3 limited finished production in Q4. During Q4, Sudbury mines achieved the highest quarterly production rates since 2Q19, which is expected to be translated into better finished nickel production in 1H23.

- **Finished nickel production from Thompson-sourced ore declined 11% q/q** attributed to scheduled maintenance at the Long Harbour Refinery during the quarter.

- **Finished nickel production from Voisey's Bay-sourced ore was 10% lower q/q**, partially reflecting scheduled maintenance at the Long Harbour Refinery during the quarter, in addition to the production gap created by the depletion of Ovoid mine and the ramp-up of the Voisey's Bay underground project.

- **Finished nickel production from third parties increased 5% q/q**, which was planned to offset lower production from Voisey's Bay ore in the quarter. Consumption of third-party feed is expected to remain higher than in recent years, aiming to maximize the utilization and performance of our downstream operations.

- **Finished nickel production from Indonesia-sourced material was 6% lower q/q**, reflecting lower nickel-in-matte production due to furnace corrective maintenance. Nickel in matte production was 16.2 kt in the quarter, 8% lower q/q.

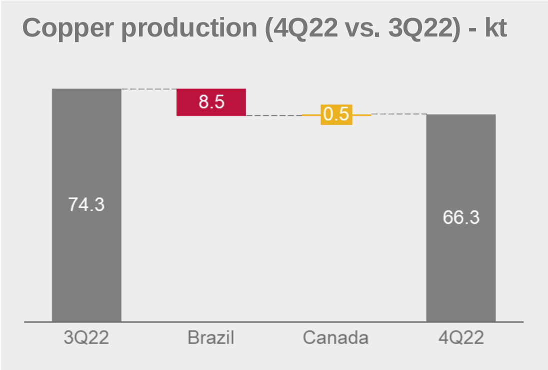
- **Nickel production at Onça Puma decreased 25% q/q** as the kiln underwent a planned maintenance, which impacted 18 days in the quarter.

Copper operations

- **Copper sales[4] were in line q/q,** despite lower production mainly due to the sale of inventories of Thompson copper precipitate and Voisey's Bay concentrate, in-line with sales commitments.

- **Sossego copper production decreased 18% q/q**, impacted by planned and corrective maintenance work conducted during the quarter, primarily related to crushing activities.

- **Salobo copper production decreased 15% q/q**, due to planned and corrective maintenance, impacting plant availability.



- **Salobo III project successful started-up in the end of 2022 on time and on budget**. The project will add 30-40 ktpy in additional copper production and it will achieve full capacity in 4Q24.

- **Copper production in Canada increased 2% q/q**. Sudbury mines improved performance following scheduled maintenance in 3Q22. This was offset by a decrease in Thompson copper production, reflecting the winter season stoppage of copper precipitate recovery, and ongoing ramp-up of the underground mine at Voisey's Bay.

[4] Sales volumes are lower compared to production volumes due to payable copper vs. contained copper: part of the copper contained in the concentrates is lost in the smelting and refining process, hence payable quantities of copper are approximately 3.5% lower than contained volumes.

ANNEX – Production and sales summary

Iron ore

000' metric tons	4Q22	3Q22	4Q21	2022	2021	% change 4Q22/3Q22	4Q22/4Q21	2022/2021
Northern System	**45,097**	**49,652**	**50,021**	**171,555**	**188,835**	**-9.2%**	**-9.8%**	**-9.2%**
Serra Norte and Serra Leste	26,486	30,678	30,958	102,298	115,135	-13.7%	-14.4%	-11.1%
S11D	18,611	18,974	19,062	69,257	73,699	-1.9%	-2.4%	-6.0%
Southeastern System	**18,405**	**19,725**	**18,659**	**72,644**	**69,780**	**-6.7%**	**-1.4%**	**4.1%**
Itabira (Cauê, Conceição and others)	7,007	7,017	7,987	27,283	28,696	-0.1%	-12.3%	-4.9%
Minas Centrais (Brucutu and others)	5,395	5,845	4,664	20,759	19,306	-7.7%	15.7%	7.5%
Mariana (Alegria, Timbopeba and others)	6,003	6,864	6,008	24,602	21,778	-12.5%	-0.1%	13.0%
Southern System	**17,350**	**20,324**	**12,999**	**63,594**	**54,285**	**-14.6%**	**33.5%**	**17.1%**
Paraopeba (Mutuca, Fábrica and others)	8,403	10,725	4,892	30,106	22,975	-21.7%	71.8%	31.0%
Vargem Grande (Vargem Grande, Pico and others)	8,947	9,599	8,106	33,488	31,310	-6.8%	10.4%	7.0%
IRON ORE PRODUCTION[1]	**80,852**	**89,701**	**81,678**	**307,793**	**312,901**	**-9.9%**	**-1.0%**	**-1.6%**
IRON ORE SALES[2]	**91,954**	**77,569**	**92,706**	**302,042**	**305,293**	**18.5%**	**-0.8%**	**-1.1%**
FINES AND PELLETS SALES	**89,991**	**73,902**	**92,099**	**293,827**	**303,241**	**21.8%**	**-2.3%**	**-3.1%**
FINES SALES[3]	**81,202**	**65,381**	**81,749**	**260,663**	**270,935**	**24.2%**	**-0.7%**	**-3.8%**
PELLETS SALES	**8,789**	**8,521**	**10,351**	**33,164**	**32,306**	**3.1%**	**-15.1%**	**2.7%**
ROM SALES	**1,963**	**3,668**	**607**	**8,216**	**2,052**	**-46.5%**	**223.4%**	**300.4%**

[1] Including third party purchases, run-of-mine and feed for pelletizing plants. Excluding Midwestern System volumes. Vale's product portfolio Fe content reached 62.0%, alumina 1.3% and silica 6.7% in 4Q22.
[2] Including sales of iron ore fines, pellets, run-of-mine and third-party purchase.
[3] Including third-party purchases. Excluding Midwestern System volumes.

Pellets

000' metric tons	4Q22	3Q22	4Q21	2022	2021	% change 4Q22/3Q22	4Q22/4Q21	2022/2021
Northern System	**739**	**899**	**895**	**3,212**	**3,624**	**-17.8%**	**-17.4%**	**-11.4%**
São Luis	739	899	895	3,212	3,624	-17.8%	-17.4%	-11.4%
Southeastern System	**3,616**	**3,284**	**4,807**	**14,677**	**16,736**	**10.1%**	**-24.8%**	**-12.3%**
Itabrasco (Tubarão 3)	960	525	1,089	2,725	3,389	82.9%	-11.8%	-19.6%
Hispanobras (Tubarão 4)	-	-	-	-	169	-	-	-100.0%
Nibrasco (Tubarão 5 and 6)	1,131	349	1,052	3,465	3,794	224.1%	7.5%	-8.7%
Kobrasco (Tubarão 7)	178	924	989	3,034	3,225	-80.7%	-82.0%	-5.9%
Tubarão 8	1,347	1,485	1,677	5,451	6,162	-9.3%	-19.7%	-11.5%
Southern System	**1,222**	**1,268**	**745**	**4,305**	**3,179**	**-3.6%**	**64.0%**	**35.4%**
Fábrica	-	-	-	-	-	-	-	-
Vargem Grande	1,222	1,268	745	4,305	3,179	-3.6%	64.0%	35.4%
Oman	**2,684**	**2,805**	**2,625**	**9,919**	**8,169**	**-4.3%**	**2.2%**	**21.4%**
PELLETS PRODUCTION	**8,261**	**8,256**	**9,073**	**32,111**	**31,708**	**0.1%**	**-8.9%**	**1.3%**
PELLETS SALES	**8,789**	**8,521**	**10,351**	**33,164**	**32,306**	**3.1%**	**-15.1%**	**2.7%**

Nickel – Finished production by source

000' metric tons	4Q22	3Q22	4Q21	2022	2021	% change 4Q22/3Q22	4Q22/4Q21	2022/2021
Canada	**18.2**	**20.0**	**18.3**	**73.3**	**76.4**	**-9.0%**	**-0.5%**	**-4.1%**
Sudbury	11.1	12.2	8.8	39.0	32.2	-9.0%	26.1%	21.1%
Thompson	2.4	2.7	1.2	9.9	6.0	-11.1%	100.0%	65.0%
Voisey's Bay	4.6	5.1	8.4	24.4	38.2	-9.8%	-45.2%	-36.1%
Indonesia	**18.0**	**19.2**	**21.7**	**63.9**	**66.7**	**-6.3%**	**-17.1%**	**-4.2%**
Brazil	**5.1**	**6.8**	**5.4**	**23.6**	**19.1**	**-25.0%**	**-5.6%**	**23.6%**
Feed from third-parties[1]	**6.1**	**5.8**	**2.6**	**18.3**	**6.1**	**5.2%**	**134.6%**	**200.0%**
NICKEL PRODUCTION	**47.4**	**51.8**	**48.0**	**179.1**	**168.3**	**-8.5%**	**-1.3%**	**6.4%**
NICKEL SALES	**58.2**	**44.3**	**44.7**	**180.8**	**181.7**	**31.4%**	**30.2%**	**-0.5%**

[1] External feed purchased from third parties and processed into finished nickel in our Canadian operations.

Copper – Finished production by source

000' metric tons	4Q22	3Q22	4Q21	2022	2021	% change 4Q22/3Q22	4Q22/4Q21	2022/2021
Brazil	**44.9**	**53.4**	**57.7**	**171.0**	**226.4**	**-15.9%**	**-22.2%**	**-24.5%**
Salobo	29.6	34.7	33.8	127.8	144.6	-14.7%	-12.4%	-11.6%
Sossego	15.3	18.7	24.0	43.2	81.8	-18.2%	-36.3%	-47.2%
Canada	**21.4**	**20.9**	**19.7**	**82.1**	**70.4**	**2.4%**	**8.6%**	**16.1%**
Sudbury	16.1	12.3	12.9	59.2	46.2	30.9%	24.8%	28.1%
Thompson	1.2	3.6	0.2	5.3	0.4	-66.7%	500.0%	1,225.0%
Voisey's Bay	1.9	3.3	5.1	10.8	20.2	-42.4%	-62.7%	-46.8%
Feed from third parties	2.2	1.7	1.6	6.8	3.6	29.4%	37.5%	88.9%
COPPER PRODUCTION	**66.3**	**74.3**	**77.5**	**253.1**	**296.8**	**-10.8%**	**-14.5%**	**-14.7%**
COPPER SALES	**71.6**	**70.5**	**73.7**	**243.9**	**284.5**	**1.6%**	**-2.8%**	**-14.3%**
Copper Sales Brazil	44.7	52.9	52.7	166.3	216.2	-15.5%	-15.2%	-23.1%
Copper Sales Canada	26.9	17.6	21.0	77.5	68.3	52.8%	28.1%	13.5%

Base Metals by-products – Finished production

	4Q22	3Q22	4Q21	2022	2021	% change 4Q22/3Q22	4Q22/4Q21	2022/2021
COBALT (000' metric tons)	529	609	603	2,434	2,521	-13.1%	-12.3%	-3.5%
PLATINUM (000' oz troy)	25	32	17	102	79	-21.9%	47.1%	29.1%
PALLADIUM (000' oz troy)	33	37	19	127	98	-10.8%	73.7%	29.6%
GOLD (000' oz troy)[1]	74	84	89	289	364	-11.9%	-16.9%	-20.6%
TOTAL BY-PRODUCTS (000' metric tons Cu eq.)[2 3]	**34**	**41**	**29**	**134**	**137**	**-17.1%**	**17.2%**	**-2.2%**

1 Includes gold from Copper and Nickel operations.
2 Includes iridium, rhodium, ruthenium and silver.
3 Copper equivalent tons calculated using average market metal prices for each quarter. Market reference prices: for copper, cobalt, gold and silver: LME spot; for Platinum and Palladium: NYMEX spot; for other PGMs: Johnson Matthey.

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