



Fernandinho dam decharacterization works concluded in July 2021

VALE'S PERFORMANCE IN 2Q21



www.vale.com
vale.ri@vale.com

Investor Relations Department

Ivan Fadel
André Werner
Mariana Rocha
Samir Bassil

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Brazil: (55 11) 3181-8565 or 4210-1803

USA: (1 412) 717-9627 or toll free (1 844) 204-8942

U.K.: (44 20) 3795-9972

Access code: VALE

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, Mineração Corumbaense Reunida S.A., Minerações Brasileiras Reunidas S.A. PT Vale Indonesia Tbk, Salobo Metais S.A., Vale Holdings B.V., Vale Canada Limited, Vale International S.A., Vale Manganês S.A., Vale Malaysia Minerals Sdn. Bhd., Vale Moçambique S.A., Vale Nouvelle-Calédonie SAS, Vale Oman Pelletizing Company LLC and 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.

Cautionary Note to U.S. Investors - The SEC permits mining companies, in their filings with the SEC, to disclose only those mineral deposits that a company can economically and legally extract or produce. We present certain information in this presentation, including 'measured resources,' 'indicated resources,' 'inferred resources,' 'geologic resources', which would not be permitted in an SEC filing. These materials are not proven or probable reserves, as defined by the SEC, and we cannot assure you that these materials will be converted into proven or probable reserves, as defined by the SEC. U.S. Investors should consider closely the disclosure in our Annual Report on Form 20-K, which may be obtained from us, from our website or at <http://us.sec.gov/edgar.shtml>.

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.

Vale's 2Q21 performance

Rio de Janeiro, July 28th, 2021 – “Safety, People and Reparation continue to guide us and permeate Vale's main achievements. As we proceed with the resumption of our iron ore capacity, we also eliminated six upstream dams and advanced consistently on our ESG agenda. We believe in safe production and operational excellence, which is why we have maintained a high guard on the prevention of COVID-19 in all countries where we operate. With elevated confidence, Vale remains on track in its de-risking, reshaping and re-rating strategy”, commented Eduardo Bartolomeo, Chief Executive Officer.

Reparation of Brumadinho

We are advancing with the compensation and remediation commitments established since 2019 and with those provided for in the Integral Reparation Agreement, signed in February 2021.

- The agreement provides for the Income Transfer Program, to be managed by the authorities, which will replace the Emergency Aid program managed by Vale since March 2019. While the Income Transfer Program is still under structuring, Vale has continued to pay emergency aid to more than 101,000 people in Brumadinho and the region along the Paraopeba river, summing up over R\$ 2.2 billion paid since 2019¹;
- We are finishing the commissioning of a new 11-kilometer pipeline and water catchment system at an unimpacted point on the Paraopeba River in Brumadinho. The new facility will be responsible for supplying about half of the water demand for the Belo Horizonte Metropolitan Region in the future. Monitored operations – will be started with the oversight of Vale and water concessionaire Copasa – will be started with a flow of 1,000 liters per second. The volume will gradually increase to 5,000 liters per second, the same flow rate as the currently suspended intake;
- We completed a new nursery for the Palhano community, in Brumadinho (MG), with a total area of 700 m², and the reform of the Community Association of Cachoeira do Choro, in Curvelo (MG). In healthcare, over 1,300 new equipment were delivered to 76 Basic Healthcare Units of 8 municipalities. In the environmental front, Vale have handled 3.5 million m³ of tailings for removal, approximately 36% out of the 9 million m³ volume leaked.

The compensation and reparation of individual damage also advanced, reaching over 10,700 people with indemnification agreements, a total of R\$ 2.63 billion committed². For further details on the Reparation progress, an overview of ongoing works and projects, and the terms of the Integral Reparation Agreement, please visit www.vale.com/esg.

¹ As of July, 22th, 2021.

² Includes agreements signed by affected people, including those pending court verifications, and paid and payable amounts as of July 22th, 2021.

Samarco and the reparation of Mariana

Despite Samarco filing for judicial protection under Brazilian bankruptcy law, reparation works and indemnification accelerated in 2Q21:

- Fundação Renova now expects to have completed or delivered by December 2021: (i) at Bento Rodrigues, a total of 79 houses and 15 plots of land at the resettlement; (ii) at Paracatu de Baixo, 9 plots of land at the resettlement, in addition to family resettlement with 9 houses and 2 plots of lands; and (iii) at Gesteira, 4 processes of credit letter (similar to a family resettlement). All infrastructure works (school, square, health center, sports court, oratory, service station, public lighting, paved roads and sewage treatment plant) at the Bento Rodrigues settlement have been completed;
- In 2Q21, 5,300 people entered into compensation agreements for individual damage through the Simplified Indemnity System, with over 17,000 people in total since the system's implementation in August 2020. Over R\$ 1.6 billion has been paid to individual reparation until the end of the quarter.

Due to overruns in the resettlement works, especially due to COVID-related delays, and due to new communities and categories (tourism entrepreneurs, informal hotels, inns, bars and restaurants; informal sand and clay traders, among others) being included in the indemnification program, Vale recorded an additional provision of US\$ 560 million related to expected disbursements to support Samarco and Renova Foundation. As of June 30, 2021, R\$ 14.5 billion have been disbursed by the Renova foundation in the reparation of Mariana, being R\$ 4.7 billion supported by Samarco and R\$ 9.8 billion supported by Vale and BHP in equal parts.

Clauses 94 and 95 of the TAC-GOV provide for a review of the 42 programs of the Renova Foundation within two years of signing. The review process has started and a "letter of principles" committing Samarco, Vale, BHP and several Brazilian authorities was signed in June 2021. The document establishes the object of negotiation as the "final definition of the scope, current object (considering measures already performed and expenses already incurred), specific objectives and delivery milestones for the reparation programs" conducted by the Renova Foundation.

According to §2 of clause 232 of the TTAC, the compensation amount for the non-repairable damage caused by the Fundão dam collapse has already been stipulated and is not subject to renegotiation.

Improvements in dams' safety

We continue to advance with improvement works for dam safety and with our Decharacterization Program for Upstream Dams. In 2Q21:

- We achieved better safety conditions for Doutor and Sul Inferior dams, allowing the reduction of their emergency level to protocol 1;
- We completed the decharacterization of the Fernandinho dam in Nova Lima (MG)³ - the structure no longer has the characteristics of a tailing storage facility. Six out of 30 structures within Vale have already been decharacterized;

³ Pending evaluation by the competent Brazilian bodies.

- We initiated tailings removal activities at B3/B4 dam in Nova Lima (MG) and Sul Superior dam in Barão de Cocais (MG), two of the three dams currently at emergency level 3. These preliminary works use remotely operated equipment and will enable the advancement of decharacterization projects for both dams;
- In support of the decharacterization program, we concluded the construction of the containment structure downstream the Forquilhas I, II, III, IV and Grupo dams, near the Fábrica Mine, with the capacity to retain tailings in a hypothetical scenario of simultaneous collapse;
- We assigned an Independent Tailings Review Board (ITRB) to each Operating System in the Iron Ore business. The ITRB role is another important practice, in line with the requirements of the Global Industry Standard for Tailings Management (GISTM) and other international industry references. The ITRB provides independent technical review of the design, construction, operation, closure and management of tailings facilities. Each corridor ITRB held its first meeting in 1H21;
- We continue to advance with an in-depth assessment of processes and practices to ensure the enhancement of our Tailings & Dams Management System and progress towards our compliance with the GISTM requirements.

Vale maintains its commitment to have no tailings dams in unsatisfactory critical safety conditions by 2025 and to de-characterize the remaining 24 upstream tailings storage facilities. For further information on Vale's dam safety management, please visit www.vale.com/esg.

Advancements in ESG practices

In 2Q21, to advance with our Climate Agenda and support our leading journey towards a low-carbon mining, we announced investments of US\$ 4-6 billion for greenhouse gas emission reduction by 2030 (which includes the previously announced US\$ 2 billion to reach renewable energy self-sufficiency). Such capital allocation will ensure our commitment to reducing 33% of our scopes 1 & 2 emissions by 2030 and the achievement of carbon neutrality by 2050.

In the quarter, we also had the start of operation of vessels equipped with rotor sails. That is part of Vale's portfolio of initiatives in shipping, which will contribute to achieving our commitment to reduce 15% of net Scope 3 emissions by 2035.

In our Social Agenda, we defined a structured due diligence process on Human Rights, which will be rolled out within 3 to 5 years to all our operations and critical projects. The assessments' results will be integrated into the company's corrective actions, with due monitoring and communication of treatment effectiveness.

In Governance, the 2021 Annual General Meeting of Shareholders in April led to major advances in the Board of Directors independence: (i) Vale's Board is now majorly comprised of independent members (8 out of the 13 Board members are independent); and (ii) the Chairman elected is also independent. For further information on those and other ESG initiatives and practices, please visit www.vale.com/esg.

Resumption of iron ore production

In 2Q21, we reached a capacity of 330 Mtpy.

- In the Northern System, Serra Leste achieved full capacity at 6 Mtpy;
- To guarantee the operational stability of the Timbopeba site and comply with the restrictions of workers' access to the flood zone of Xingu dam, we implemented an unmanned train operation covering a 16 km stretch to expedite Timbopeba site production, which is working well;
- We concluded the maintenance of ship loader 6 (CN6) at the Ponta da Madeira Maritime Terminal as scheduled, causing no impact on this year's expected shipments;
- We increased the high-silica sinter feed production by dry processing in Brucutu, taking advantage of a favorable market environment;
- Maravilhas III (Phase I) dam operations started in July following the issuance of a positive Stability Condition Declaration ("DCE"). As previously announced, together with Vargem Grande's tailings filtration plant, which started its operation in March, it adds 4 Mtpy of production capacity to Vargem Grande complex as well as allow an improvement in the average quality of Vale's product portfolio and operational flexibility;
- We advanced with the three filtration plants under construction in Itabira and Brucutu, all with more than 70% physical progress.

For additional information, please see our [2Q21 Production and Sales Report](#).

Base Metals projects

We achieved significant milestones for the portfolio of projects in the Base Metals business.

In June, Reid Brook deposit at the Voisey's Bay Mine Expansion Project in Northern Labrador produced its first ore. The project involves developing two underground mines – Reid Brook and Eastern Deeps – and will reach an annual production rate of 40,000 tons of nickel in concentrate by 2025, with about 20,000 tons of copper and 2,600 tons of cobalt as by-products. The project is 66% complete, with executed capital expenditures of US\$ 1,323 million and Eastern Deeps start-up expected for 2022.

We also signed a Project Cooperation Framework Agreement (PCFA) for the Bahodopi Nickel Processing Facility in Indonesia with TISCO and Xinhai⁴. The parties will conclude the technical and financial requirements needed for the final investment decision to develop the 73,000-ton ferronickel facility in the next six months.

Finally, we approved the investment of US\$ 150 million to extend current mine activities in Thompson, Manitoba by ten years. With an extensive drilling program, mining can extend past 2040. This step is the first of a two-phase project, including critical infrastructure such as new ventilation raises and fans, increased backfill capacity and additional power distribution, which are forecast to improve current production by 30%.

⁴ Parties to the PCFA: PT Vale Indonesia Tbk ("PTVI"), Taiyuan Iron & Steel (Group) Co., Ltd ("TISCO") and Shandong Xinhai Technology Co., Ltd ("Xinhai")

Update on Coal business

In April, we concluded Moatize mine and plants maintenance, two months past the original schedule, with production now ramping-up in line with the plan to reach the annual production rate of 15Mtpy during the second semester of 2021.

In June, following the Nacala Logistics Corridor Project Finance prepayment, Vale acquired Mitsui's stake in the coal mine and the corridor operations. Therefore, starting 3Q21, Vale is consolidating mine to port operations in its financial statements, and a substantial improvement in Coal EBITDA in 3Q21 will derive from the removal of the financial burden of the Project Finance on the operating costs of the business through the railway tariff.

Following our Coal Business divestment plan, Vale is evaluating the alternatives presented up to this moment, ruled by the sense of a responsible divestment and the operational continuity of Moatize mine and Nacala Logistics Corridor.

Sharing value creation

In June, we distributed a dividend of approximately US\$ 2.2 billion. In addition to the dividends paid, we proceeded with the buyback program announced in April, which was around 45% complete by the date of publishing of this report, with a total spend of US\$ 2.6 billion to repurchase circa 122 million shares⁵.

Considering March distribution of US\$ 3.9 billion, Vale returned a total of US\$ 8.1 billion to shareholders in the first half of 2021.

Following our Shareholder Remuneration Policy, a minimum of US\$ 5.3 billion will be distributed in September based on the results for the first half of the year, with the final amount to be discussed and approved by the Board of Directors in due time.

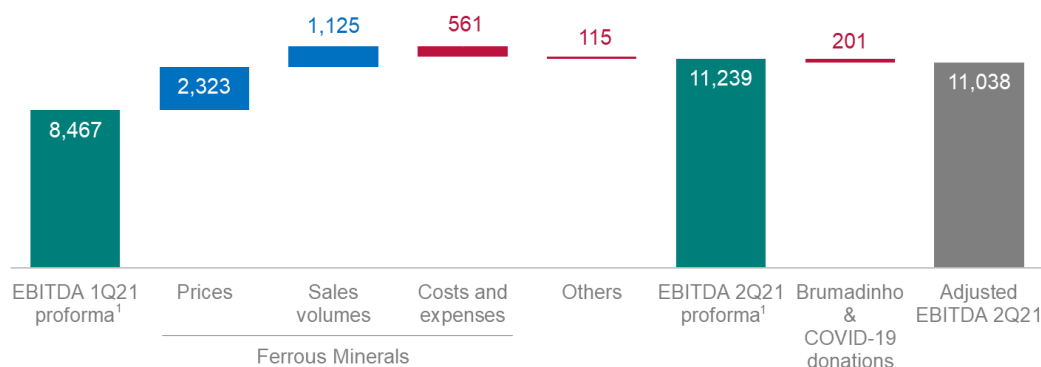
Vale's Performance in 2Q21

In 2Q21, Vale reported a record proforma adjusted EBITDA of US\$ 11.239 billion, mainly driven by the higher iron ore and pellets realized prices and sales volumes, partially offset by certain costs and expenses that are linked to the iron ore price, such as purchases from third-parties and royalties, elevated freight costs and higher maintenance and services costs.

⁵ As reflected in our 2Q21 Interim Financial Statement, until June 30, 2021, the Company had bought-back approximately 93 million ordinary shares in the total amount of US\$2.0 billion, approximately 34% of the April announced buyback program.

Proforma EBITDA 2Q21 vs. 1Q21

US\$ million



¹ Net of Brumadinho expenses and COVID-19 donations

The main drivers of our 2Q21 performance were:

- Ferrous Minerals EBITDA was US\$ 10.679 billion, US\$ 2.868 billion higher than 1Q21, mainly due to higher realized sales prices (US\$ 2.323 billion) and higher volumes (US\$ 1.125 billion), partially offset by an increase in costs and expenses, including C1 and freight costs (US\$ 561 million);
- Base Metals EBITDA was US\$ 866 million, US\$ 145 million lower than 1Q21. Nickel operations EBITDA was US\$ 430 million, US\$ 212 million lower than 1Q21, mainly due to stoppage expenses related to Sudbury labor disruptions and a decrease in by-products revenues. Copper operations EBITDA improved by US\$ 67 million to US\$ 436 million, primarily driven by higher sales volumes reflecting the operational improvements in Salobo and the carryover of concentrate shipments from 1Q21 to 2Q21;
- Coal EBITDA was negative US\$ 164 million, US\$ 5 million lower than 1Q21. The positive effects of the revamp conclusion, with the higher revenues and fixed costs dilution balanced the lack of the interest received from Nacala Logistics Corridor in 1Q21. The expected EBITDA benefits of the logistics corridor integration should start to be perceived with the full consolidation in 3Q21.

Selected financial indicators

US\$ million	2Q21	1Q21	2Q20
Net operating revenues	16,675	12,645	7,518
Total costs and other expenses	6,344	4,989	4,901
Expenses related to Brumadinho	185	115	130
Adjusted EBIT	10,189	7,619	2,564
Adjusted EBIT margin (%)	61%	60%	34%
Adjusted EBITDA	11,038	8,350	3,371
Adjusted EBITDA margin (%)	66%	66%	45%
Proforma adjusted EBITDA ¹	11,239	8,467	3,586
Iron ore - 62% Fe reference price	200.0	166.9	93.3
Net income	7,586	5,546	995
Net debt ²	(738)	(505)	6,349
Capital expenditures ³	1,139	1,009	967

¹ Excluding expenses related to Brumadinho and COVID-19.

² Including leases (IFRS 16).

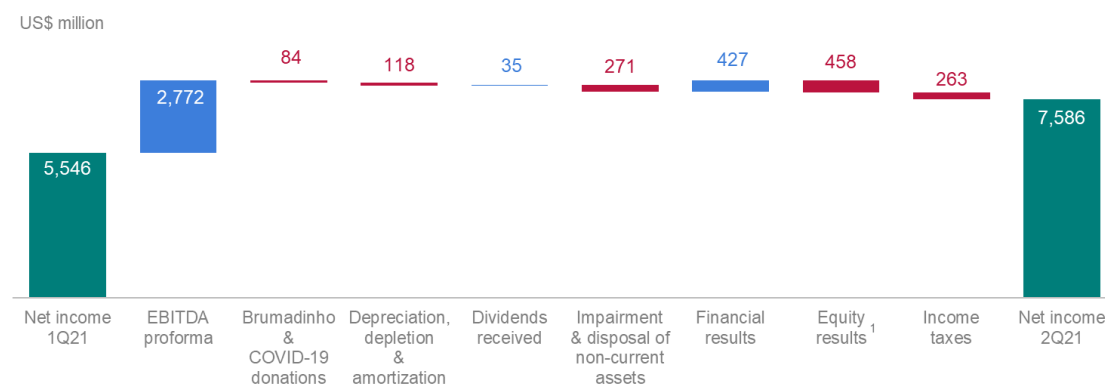
³ Does not include Boston Metal investment of US\$ 6 million in 1Q21

US\$ million	1H21	1H20	%
Net operating revenues	29,320	14,487	102%
Total costs and other expenses	11,333	9,719	17%
Expenses related to Brumadinho	300	289	4%
Adjusted EBIT	17,808	4,631	285%
Adjusted EBIT margin (%)	61%	32%	29%
Adjusted EBITDA	19,388	6,253	210%
Adjusted EBITDA margin (%)	66%	43%	23%
Proforma adjusted EBITDA ¹	19,706	6,627	197%
Net income (loss)	13,132	1,234	964%
Capital expenditures ²	2,148	2,091	3%

¹ Excluding expenses related to Brumadinho and COVID-19.

² Does not includes Boston Metal investment of US\$ 6 million in 1H21

Net income 2Q21 vs. 1Q21



¹ Includes net income (loss) attributable to noncontrolling interests.

Net income was US\$ 7.586 billion in 2Q21, US\$ 2.040 billion higher than 1Q21, primarily due to higher proforma EBITDA and higher financial results. Charges related to the Coal Business asset impairment and the lower equity results following additional provision charges related to the Renova foundation partially offset the positive impacts.

Total CAPEX for 2Q21 amounted to US\$ 1.139 billion, US\$ 130 million higher than in 1Q21, explained by acceleration of investments in Voisey's Bay Mine Extension, Sol do Cerrado solar power plant and Serra Sul 120 Mtpy projects.

We generated US\$ 6.527 billion in Free Cash Flow from Operations in 2Q21, US\$ 680 million higher than in 1Q21, driven by the solid proforma EBITDA for the quarter, partially offset by the increase in working capital needs and higher cash income tax. The cash generated from operations enabled us to distribute US\$ 2.208 billion in dividends to shareholders in June, proceed with our buyback program acquiring US\$ 2.004 billion of our shares and prepay Nacala Logistics Corridor's Project Finance of US\$ 2.517 billion.

We ended the quarter with gross debt at US\$ 12.154 billion, in line with 1Q21. Net debt⁶ totaled negative US\$ 738 million in the same period, with expanded net debt at US\$ 11.448 billion.

⁶ Starting 2Q21, we will report leases obligations as part of net debt, in line with IFRS16. We adjusted previously reported figures accordingly.

Performance of business segments in 2Q21

Ferrous Minerals EBITDA of US\$ 10.679 billion in 2Q21

- Ferrous Minerals record EBITDA, mainly driven by higher iron ore fines and pellets realized prices, 18% and 32% respectively, and higher iron ore fines and pellets sales volumes, 13% and 22%;
- Vale's average CFR reference price was US\$ 202.0/t, an increase of US\$ 30.9/t compared with 1Q21. The impact of the higher 62% Fe reference price was partially offset by the lower average premiums and quality adjustments due to the greater share of sales of high silica products;
- Iron ore fines and pellets EBITDA breakeven cost was US\$ 44.5/t, US\$ 8.3/t higher than 1Q21. The higher breakeven was mainly a result of (i) US\$ 4.7/t higher C1 costs, mainly due to higher 3rd party purchases, inflation and demurrage costs, and (ii) US\$ 1.9/t higher freight costs. We now expect C1 costs ex-third-party purchases for 4Q21 (vs. 2Q21) to decrease around US\$ 1.5/t, mainly due to higher dilution of fixed costs and normalization of demurrage costs.

Base Metals EBITDA was US\$ 866 million in 2Q21, US\$ 145 million lower than 1Q21

- Nickel business EBITDA was US\$ 430 million in 2Q21, US\$ 212 million lower than 1Q21, mainly due to labor disruptions in Sudbury, resulting in higher stoppage expenses (US\$ 59 million), and lower by-products revenues (US\$ 69 million);
- Copper business EBITDA was US\$ 436 million in 2Q21, US\$ 67 million higher than 1Q21, mainly due to higher copper sales volumes, as a result of operating performance improvements in Salobo, sales carryover from 1Q21 and higher by-products revenues. The positive effect was partially offset by higher maintenance costs of the fleet in Salobo and the mills in Sossego.

Market overview

Iron Ore

Iron ore 62% Fe reference price averaged US\$ 200.0/dmt in 2Q21, 20% higher than in 1Q21. Iron ore prices had a second round of increases in the end of 1Q21 and the maintenance of constrained iron ore supply, together with very strong economic activity from China and the demand recovery from ex-China, kept the market under supplied, lifting prices above US\$ 200/t. Going forward on the year, on the supply side, volumes shall increase compared to 1H21 while iron ore demand might be impacted by production cuts due to environmental restrictions in China.

MB65% index averaged US\$ 232.9/dmt in 2Q21, 22% higher than 1Q21. Together with the hike of prices for medium grade ores, high grade ores were even further supported by steel prices, moving to record levels in all main steel producing regions. The current price spread between 65% and 62% grades stayed above US\$ 30/t level during the entire 2Q21 reaching new historical highs. Even with higher input costs, steel margins kept at healthy territory showing correction signs only when China's government adopted measurements against price speculation on the financial market. The potential of further restrictions over steel production in China due to environmental measures, while still under a highly demanded environment for steel shall keep its prices and margins at very high levels. Meanwhile, the environmental restrictions in China shall also affect coal mines in China, limiting its supply and supporting higher prices within the country. Ex-China, the increase of steel production shall also increase coal demand, and the combination of high steel margins and higher coke prices shall provide a very strong support for iron ore premiums along 2H21.

China's crude steel production totaled 560.2 Mt in 1H21, 11% higher than in 1H20. Steel production declined in June to 93.9 Mt (versus 99.5 Mt in May), with disruption of July of 100th-anniversary celebrations of the Chinese Communist Party and the comeback of regional production cut discussion. GDP growth recorded 7.9% YoY in 2Q21, with CAGR of GDP between 2Q21 and 2Q19 improving to 5.5% p.a. from 5% in 1Q, reflecting continued economic recovery during 2Q. Industrial activities remained the major driving force for 2Q21 GDP. Construction activities GDP slowed unexpectedly in 2Q21, which might be due to continued restrictions on property sectors and lagging infrastructure activities due to slow local bond issuance in 1H21. June macro data showed similar picture of Chinese economy, as industrial activities stayed in good shape, consumption continued recovering, yet property and infra activities were weaker than expected. Producer price index emerged since April and shot to 9% in May and may be closed to the peak according to historical experience. High raw materials prices have squeezed Chinese mills margins. Manufacturing PMI edged down to 50.9% in June, slightly down from 51.0% in May, indicating that the sector has continued to expand steadily though the growth slowed.

Ex-China, steel sector operating conditions continue to improve with all the major markets already recovered to pre-pandemic levels (avg. Jan-Feb 2020). Steel demand is strong, although constrained supply chains is creating long lead times (in the US reaching 14 weeks) and limited availability for imports have contributed to record high steel prices. HRC prices reached US\$ 1,400/t in Europe/Brazil and US\$ 1,900/t in the US. Steel producers have recently indicated that this growth encouraged them to take on additional capacity (~7Mt in the US). The automotive sector faces semiconductor supply challenges, but on the positive side, it is only postponing short-term demand. A point to be noted is the resurgence of COVID-19 cases due to the Delta variant.

Crude steel production in EU27 and UK increased 18% in 1H21 (versus 1H20), totaling 81.6 Mt, although still below 84.4 Mt in 1H19. In Europe, the steel-using sectors suffered severely from the first lockdown measures in 2020 but experienced a stronger than expected post-lockdown rebound in manufacturing activities due to depleted stocks, supportive government measures and recovering demand. EU's automotive sector is still 19% below pre-pandemic levels. Market sentiment has been very positive with manufacturing PMI's around 60 points as well as leading indicators for the construction sector. Consumption indicators have been steadily improving for the past months as the vaccines are rolled out followed by easing of lockdowns.

In US, crude steel production totaled 42.0 Mt in 1H21, 15% higher than in 1H20, but below 44.5 Mt recorded in 1H19. After the closures of steel capacity in 2020, the quick rebound of demand translated into that steel prices soar and, as result, steel capacity utilization nationwide reached 83% (beginning of July), similar to pre-pandemic, and way above the 68% at the same time last year. June's US manufacturing PMI rose to 62.1 as production output and new orders continued to strengthen, despite supply chain disruptions. Vehicle sales are up 2% relative to pre-pandemic levels. Construction sector is showing mixed sentiment and slowed down 8% MoM in May, which is reflecting the high prices of houses. Despite inflation has accelerated, Fed has not yet indicated whether it will push the breaks by increasing policy rate.

In JKT, crude steel production totaled 94.6 Mt in 1H21, 11% higher than in 1H20, but still below 98.5 Mt recorded in 1H19, being boosted by robust demand from industries such as automobile and machinery and, in Japan, by expanding public works.

As for developing economies, steel demand has been recovering fast since 2H20 and steel output has been steadily growing, with some countries (e.g. Brazil, Iran, India and Southeast Asia) already producing above pre-pandemic in 1H21 (versus 1H19). Construction sector has been strong and driving steel demand, especially in Brazil and Turkey.

Coal

Coking coal: The FOB Australia premium low vol (PLV) index averaged US\$ 136.5/t in 2Q21, up from the previous quarter's US\$ 128.0/t. The index was mostly stable at US\$ 110/t from April until mid-May before escalating to US\$ 194.0/t in the second half of May. Price increased due to the tightening supply of spot cargoes from Australia. Meanwhile, the CFR China index steadily increased throughout the quarter, rising from US\$ 218.1/t to US\$ 258.2/t. China continued to step up purchases of Canada, USA and Russia origin coking coals to replace the absent Australia volumes, but tonnages of non-Australian coals remained limited. Safety inspections at China domestic mines and closures of Mongolia export borders due to the COVID-19 situation further amplified the shortage situation in China. The high CFR China price incentivized some traders to swap their US and Canada contracted coals with Australia coals, helping lift the FOB PLV index.

Supply from Australia should improve by the end of 3Q21 with the production resumption of some suspended mines and completion of maintenance programs. There are no signals that China will start accepting Australian coal soon; however, PLV prices can remain supported as trade flows have somewhat rebalanced from the embargo and on solid ex-China demand. China's domestic coal output should increase post the 100th-anniversary celebrations of the Chinese Communist Party in July. Mongolian imports should also return steadily as COVID-19 cases decline, helping alleviate the tight supply situation in China. We expect prices to remain well-supported in 3Q21 unless we see significant steel production cuts.

Thermal coal: Richards Bay 6000 kcal NAR price averaged US\$ 104.7/t in 2Q21, 15% higher than the previous quarter. High-CV prices rallied to long-term highs in June, such as Richards Bay 6000 kcal NAR price that hit US\$ 118.9/t. Insufficient global supply to meet summer restocking demand, including extended rains in Indonesia and Atlantic miners' infrastructure constraints, fueled the price spike. Gas prices were also at multi-year highs, which led to gas-to-coal switching. In contrast, Australian mid-CV coal prices remained relatively subdued without Chinese buyers; the spread between the mid-CV and high-CV grades remained wide at 43% by the end of the quarter. The coal shortage intensified in China, with the production suspended at many mines ahead of the 100th-anniversary celebrations.

The thermal coal market should stay elevated in 3Q21 on northern summer demand and fragile supply. Forecasts of a hotter-than-normal summer in NE Asia, a recovering industrial activity and high gas prices should keep thermal coal demand solid. Adding to the upside, China may again ease import quota restrictions, which would generally help sustain seaborne prices.

Nickel

LME nickel prices averaged US\$ 17,359/t in 2Q21, 1% lower quarter over quarter and 42% higher than 2Q20.

Total exchange inventories (LME and SHFE) decreased, closing at 238.6 kt at the end of 2Q21, down 12% in the quarter and 9% year over year. LME inventories stood at 232.5 kt at the end of 2Q21, a decrease of 27.8 kt in the quarter and 1.4 kt year over year. SHFE inventories decreased by 4.6 kt in the quarter and 22.9 kt year over year.

Demand/Supply

Global sales of electric vehicles (EV) are on track to increase by over 185% from 2Q20, led by robust growth in China and Europe and with North America expected to achieve the highest growth rate quarter over quarter. EV sales continue to gain market share, with the penetration rate up nearly 5% from 2Q20 and 2% quarter over quarter. 2Q21 sales on the total automotive market is on track to increase 26% year over year and 5% quarter over quarter, boosted by solid numbers in the US as traveling resumed after a comprehensive vaccine rollout nationwide. The spread of the COVID-19 Delta variant and a stalling vaccine rollout threaten a reversion back to global lockdowns with Australia, albeit only 9% vaccinated, and Japan implementing restrictions, among others.

Global stainless-steel production increased 29% from 2Q20 as the second quarter last year was plagued with COVID-19 related impacts. Quarter over quarter, global production increased 2% as a continued surge in Indonesia stainless steel production and a recovery in Europe was offset by decreases in Japan and the US. Nickel consumption in stainless increased 11% in the quarter and 35% year over year. As China and Indonesia captured market share from the established European market, scrap usage decreased. Visible Chinese stainless-steel inventories fell 28% from 2Q20 and 7% from 1Q21 as the global economy recovers from the pandemic.

The aerospace industry is beginning to recover with aircraft deliveries from Boeing and Airbus up 167% from 2Q20 and 25% quarter over quarter. US traveler throughput surpassed 2019 levels in July as people reunited with families and friends for the national holiday. Commercial flights globally are now 75% of pre-COVID levels.

The oil and gas industry has begun to recover as energy prices approach three-year highs. Global rig counts have increased 2% in the quarter and are relatively flat to 2Q20. Rig counts typically lag price adjustments by three to six months, with rig counts expected to rebound in the second half of 2021.

2Q21 nickel production increased 8% from 2Q20 and 5% from 1Q21 as operations recovered from pandemic-related closures. Booming Indonesian supply was slightly offset by production losses in the rest of the world with an accident at Nornickel, a closure in Myanmar and the ongoing strike at Vale's Sudbury operations. Chinese NPI production declined 15% in 2Q21, compared to 2Q20, while Indonesian NPI production increased 69% over the same period. Quarter over quarter Chinese NPI production was down 6%, while Indonesia NPI production increased 10%. Indonesia's first HPAL project, set to produce 36 ktpy for the battery market, started in April.

Outlook

While demand continues to recover and regional supply issues persist, we continue to see the market in a marginal surplus in 2021. Demand for nickel faces the impacts of global anti-inflationary measures, as the COVID-19 Delta variant lingers, and resilient stainless-steel production in China and Indonesia adapts to changing supply fundamentals. Growth in stainless steel production and a shift towards the electrification of the world economies will improve demand in the medium term. Strong government incentives and penalty programs continue to drive EV adoption rates as countries commit to low emission targets. This growth potential should favor high nickel content batteries chemistry due to its lower cost structure and higher energy density. The North American supply chain is particularly dependent on this market dynamic, as the commitment to green initiatives, including the development of the EV supply chain, has been inconsistent with governmental policy. Additions to both NPI and HPAL supply planned in Indonesia in the medium term may supply a large portion of the growth requirements for stainless steel and batteries. However, environmental concerns around the CO2 intensity of NPI and push for geographical diversification of the battery supply chains could cause volatility in the longer term. The most significant risk to lowering the CO2 emissions, in this case, is the lack of a viable alternative supply source from North America if the previously mentioned shortcomings are not resolved.

Our long-term outlook for nickel remains very positive, driven by strong demand in the EV sector with the cost of ownership near or at parity with ICE vehicles and prevalence of nickel rich batteries. Additionally, as countries continue to set aggressive decarbonization goals, growth in EVs and the infrastructure needed to support them is crucial. Strength in markets previously heavily impacted by the pandemic, such as aerospace and energy, is improving accordingly with the success of the global COVID-19 vaccine rollout. The global pursuit of net-zero emission should positively impact the stainless steel, aerospace and energy markets in the long term.

Copper

The LME copper prices posted substantial gains in 2Q21, averaging US\$ 9,700/t compared to US\$ 8,504/t in 1Q21, a 14%, or nearly US\$ 1,200/t, quarter over quarter increase.

LME copper inventories at the end of 2Q21 stood at 211.5 kt, an increase of 67 kt from the end of the last quarter. SHFE inventories, including deliverable stocks, decreased by 34.6 kt to 153.8 kt at the end of 2Q21. COMEX copper inventories fell by 19.7 kt, ending 2Q21 at 45.1 kt. Overall, copper exchange inventory increased by 12.8 kt, ending the quarter at 410.4 kt.

Demand/Supply

Global refined copper demand increased 2.2% in 2Q21 compared to 2Q20, with concentrate demand rising 3.4% over the same period. The US and European demand growth contributed most to the quarterly increase, offsetting weak Chinese demand. 2Q21 consumptions levels in Europe are now in line with those registered in 2019, pre-COVID. Manufacturing and construction activity remained robust in supporting copper consumption with Purchasing Manager Indexes showing all major regions are well in the expansion territory.

Supply-chain disruptions and logistical bottlenecks seem to be easing on the production side, with global refined copper production increased 1.5% in 2Q21 vs. 2Q20. Nevertheless, concerns remain, particularly in Latin America, as union contract negotiations have not closed at important mines and other mines are still to start negotiations in the region. Furthermore, changing regulation and fiscal policies, such as tax increases on metal production, could impact mining investment in important producing countries.

Outlook

For 2021, we see the refined market in a deficit as demand strength is expected to continue through 2H21, with continued strength in US and Europe end-use markets. Reflecting these strong market fundamentals, copper cash prices spent most of May above \$10,000/t. The concentrate market showed significant tightness in 1Q21, which resulted in spot treatments and refining charges (TCRCs) hitting multi-year lows. In 2Q21, TCRCs began to rebound slightly as more material became available and Chinese smelters limited purchases. Despite that, spot TCRCs ended 2Q nearly 40% below the 2021 benchmark of US\$59.5/t (TR) and US\$ 5.95 cents/lb (RC). Additional support is coming from fiscal and monetary stimulus, mounting ESG pressures, and the accelerated transition towards sustainable energy, all of which is copper intensive.

Our long-term outlook for copper remains very positive. Copper has a strong long-term growth profile, driven by industrialization, construction and electrical network infrastructure. Governments globally have set ambitious decarbonization targets, and coupled with falling costs of renewables, and stimulus investments in the green economy, long-term growth forecasts have been revised higher. This acceleration will lead to a pivot towards even more copper-intensive uses in renewable energy and transportation projects related to electric vehicles. On the supply side, growth continues to struggle given declining ore grades and the lack of major discoveries. While in the short term there are enough quality assets being developed to meet demand, significantly more quality assets will be required in the medium to long-term to replace existing operations ramping down or closing. Additionally, proposed increases to taxes and royalties in Chile and Peru are unlikely to impact existing production, but uncertainty and higher costs could defer investment, and we see some risk to longer-dated supply growth from key greenfield projects.

Adjusted EBITDA

Adjusted EBITDA

US\$ million	2Q21	1Q21	2Q20
Net operating revenues	16,675	12,645	7,518
COGS	(5,805)	(4,627)	(4,212)
SG&A	(133)	(105)	(124)
Research and development	(141)	(100)	(90)
Pre-operating and stoppage expenses	(191)	(145)	(238)
Expenses related to Brumadinho	(185)	(115)	(130)
Expenses related to COVID-19 donations	(16)	(2)	(85)
Other operational expenses	(58)	(10)	(152)
Dividends and interests on associates and JVs	43	78	77
Adjusted EBIT	10,189	7,619	2,564
Depreciation, amortization & depletion	849	731	807
Adjusted EBITDA	11,038	8,350	3,371
Proforma adjusted EBITDA¹	11,239	8,467	3,586

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

Adjusted EBITDA by business area

US\$ million	2Q21	1Q21	2Q20
Ferrous Minerals	10,679	7,811	3,502
Base Metals	866	1,011	611
Coal	(164)	(159)	(269)
Others	(142)	(196)	(258)
Brumadinho expenses	(185)	(115)	(130)
Expenses related to COVID-19 donations	(16)	(2)	(85)
Total	11,038	8,350	3,371

Net operating revenue by business area

US\$ million	2Q21	%	1Q21	%	2Q20	%
Ferrous Minerals	14,297	85.7	10,505	83.1	5,895	78.4
Iron ore fines	12,200	73.2	9,154	72.4	4,852	64.5
ROM	14	0.1	24	0.2	3	0.0
Pellets	1,947	11.7	1,208	9.6	900	12.0
Manganese ore	29	0.2	28	0.2	58	0.8
Ferroalloys	23	0.1	18	0.1	10	0.1
Others	84	0.5	73	0.6	72	1.0
Base Metals	2,180	13.1	1,988	15.7	1,414	18.8
Nickel	815	4.9	846	6.7	542	7.2
Copper	711	4.3	670	5.3	491	6.5
PGMs	169	1.0	183	1.4	120	1.6
Gold as by-product	163	1.0	135	1.1	191	2.5
Silver as by-product	13	0.1	8	0.1	7	0.1
Cobalt	24	0.1	19	0.2	19	0.3
Others ¹	285	1.7	127	1.0	44	0.6
Coal²	161	1.0	92	0.7	94	1.3
Metallurgical coal	99	0.6	58	0.5	52	0.7
Thermal coal	60	0.4	34	0.3	42	0.6
Others	37	0.2	60	0.5	58	0.8
Total	16,675	100.0	12,645	100.0	7,518	100.0

¹ Includes marketing activities

² Includes US\$ 2 million of general cargo in 2Q21

COGS by business segment

US\$ million	2Q21	%	1Q21	%	2Q20	%
Ferrous Minerals	3,879	66.8	2,922	63.2	2,632	62.5
Base Metals	1,459	25.1	1,188	25.7	952	22.6
Coal	340	5.9	329	7.1	361	8.6
Others	127	2.2	188	4.1	267	6.3
Total COGS¹	5,805	100.0	4,627	100.0	4,212	100.0
Depreciation	800		688		734	
COGS, ex-depreciation	5,005		3,939		3,478	

¹ COGS currency exposure in 2Q21 was as follows: 55.8% USD, 38.4% BRL, 5.6% CAD and 0.2% Other currencies.

Operating expenses

US\$ million	2Q21	1Q21	2Q20
SG&A ex-depreciation	123	96	110
SG&A	133	105	124
Administrative	108	87	104
Personnel	52	47	40
Services	22	17	33
Depreciation	10	9	14
Others	24	14	17
Selling	25	18	20
R&D	141	100	90
Pre-operating and stoppage expenses	191	145	238
Depreciation	39	34	59
Expenses related to Brumadinho	185	115	130
Provisions	-	-	21
Incurred expenses	185	115	109
Expenses related to COVID-19 donations	16	2	85
Other operating expenses	58	10	152
Total operating expenses	724	477	819
Depreciation	49	43	73
Operating expenses ex-depreciation	675	434	746

SG&A increased mainly due to the increase in expenses for communication, services and consulting.

Pre-operating and stoppage expenses increased in 2Q21, owing mainly to the labour interruption in Ontario operations, partially compensated by the decrease of Minas Centrais stoppage expenses. Please, see the "Pre-operating and stoppage expenses breakdown" table below for details.

Other operating expenses increased in 2Q21 due to provisions related to long-term incentive plans remuneration.

Impact of Brumadinho provisions and expenses in 2Q21 – in USD

US\$ million	Provisions balance 31mar21	EBITDA impact	Payments	FX and other adjustments ¹	Provisions balance 30jun21
Decharacterization	1,962	-	(79)	272	2,155
Integral Reparation Agreement	3,541	-	(215)	695	4,021
Other reparation ²	473	-	(9)	6	470
Total Provisions	5,976	-	(303)	973	6,646
Incurred expenses		(185)	(185)		
Total		(185)	(488)		

¹ Includes foreign exchange, present value and other adjustments

² Includes individual, labor and emergency indemnifications and tailing removal and containment works

In 2Q21, Vale paid US\$ 303 million related to Brumadinho, including the Integral Reparation Agreement (US\$ 215 million), decharacterization program (US\$ 79 million), other required reparation (US\$ 9 million) and incurred expenses (US\$ 185 million). The aggregate amount of the provisions in dollar increased to US\$ 6.6 billion, mainly due to the impact of Brazilian real appreciation, which was partially offset by payments during the quarter in the amount of US\$ 303 million.

In Brazilian reais, the provision decreased from R\$ 34.0 billion in 1Q21 to R\$ 33.2 billion in 2Q21, mainly as a result of payments related to: (i) Integral Reparation Agreement (R\$ 1,165 million) (ii) decharacterization program (R\$ 414 million), (iii) other required reparation (R\$ 45 million).

Payments related to the Integral Reparation Agreement for Brumadinho started in 2Q21. Vale expects to disburse US\$ 1.6 billion in 2H21 concerning the agreement.

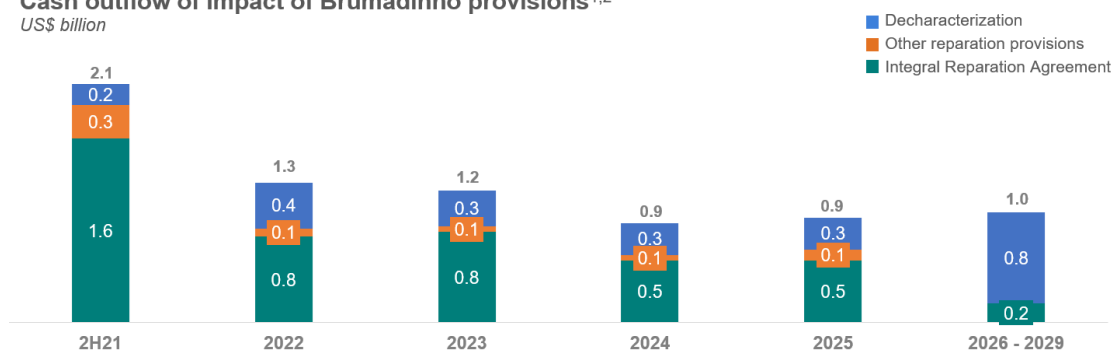
Impact of Brumadinho provisions and expenses since 2019

US\$ million	EBITDA impact by 2020	Payments By 2020	FX and other adjustments	Provisions balance 31dec20	EBITDA impact in 1H21	Payments 1H21	FX and other adjustments 1H21	Provisions balance 30jun21
Decharacterization	3,241	(451)	(501)	2,289	-	(163)	29	2,155
Agreements & donations ¹	8,056	(2,660)	(821)	4,575	-	(294)	210	4,491
Total Provisions	11,297	(3,111)	(1,322)	6,864	-	(457)	239	6,646
Incurred expenses	1,240	(1,240)			(300)	(300)		
Others	122	-						
Total	12,569	(4,351)			(300)	(757)	126	

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

Cash outflow of Impact of Brumadinho provisions^{1,2}

US\$ billion



¹ Estimate cash outflow for 2021 - 2029 period, given BRL-USD exchange rates of 5.06 (July 2021 - December 2021) , 5.25 (2022) and 5.06 (2023-2029)

² Amounts stated without adjustment for inflation or discount to present value

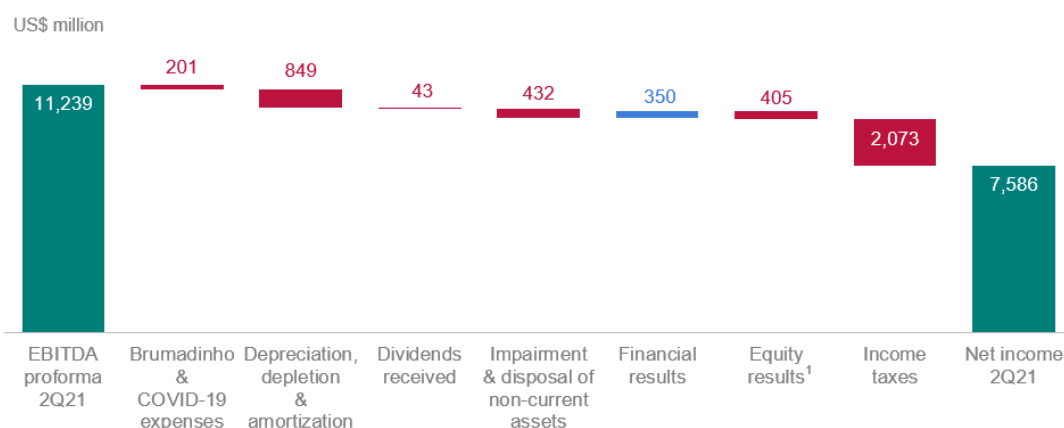
Pre-operating and stoppage expenses breakdown

US\$ million	2Q21	1Q21	2Q20
Pre-operating and stoppage expenses	191	145	238
Depreciation	39	34	59
Pre-operating and stoppage expenses, ex-depreciation	152	111	179
Brumadinho - stoppage expenses	66	85	104
Minas Centrais Complex (Brucutu and others)	6	22	19
Mariana Complex (Alegria, Timbopeba and others)	0	3	7
Paraopeba Complex (Mutuca, Fábrica ¹ and others)	32	35	44
Vargem Grande Complex (Vargem Grande ¹ , Pico and others)	28	25	34
Tubarão pellet plants	7	7	17
Ontario	59	0	0
Onça Puma	0	0	0
Voisey's Bay	0	0	29
Others	20	19	29

¹ Including pelletizing plants.

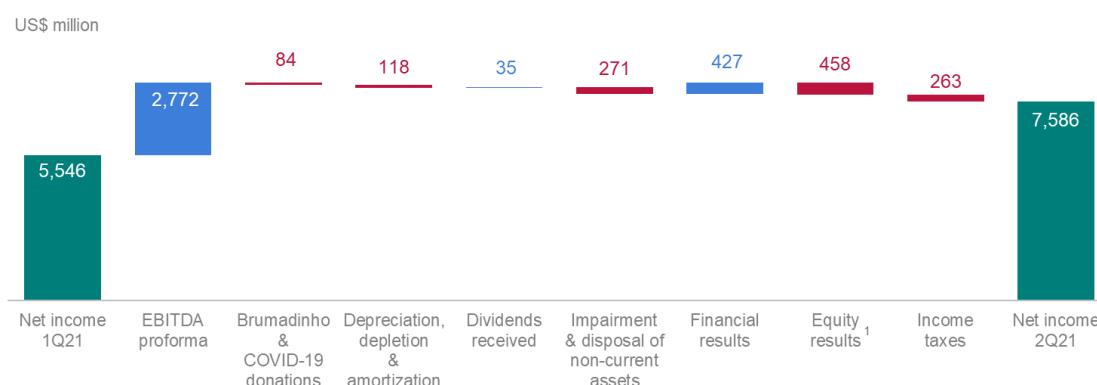
Net income (loss)

2Q21 EBITDA proforma to Net income reconciliation



¹ Includes net income (loss) attributable to noncontrolling interests

Net income 2Q21 vs. 1Q21



¹ Includes net income (loss) attributable to noncontrolling interests.

In 2Q21 net income reached US\$ 7.586 billion, US\$ 2.040 billion higher than 1Q21, mainly due to:

- Higher proforma EBITDA in 2Q21;
- Higher financial results mainly from the impact of the stronger BRL on currency and interest rate hedges and the effect of shareholders debentures mark-to-market in 1Q21.

The positive effects were partially offset by:

- Lower equity results, following the update of the assumptions used to estimate the costs related to Renova Foundation's 42 repair and compensation programs. This periodic review resulted in an additional provision of US\$ 560 million, which corresponds to Vale's proportional responsibility with Renova Foundation.

- The net effect, after the completion of the acquisition of the coal assets from Mitsui, of (i) the reassessment of the loan receivables Vale has from Nacala Logistics Corridor, considering lower long-term price assumption for metallurgical and thermal coal as well as a reduction in the expected production of the coal business, and (ii) reclassification of the accumulated translation adjustments related to Coal business assets. Both effects were presented in “Impairment and disposals of non-current assets” line.

Financial results

US\$ million	2Q21	1Q21	2Q20
Financial expenses	(177)	(1,386)	(585)
Gross interest	(176)	(207)	(193)
Capitalization of interest	14	16	12
Shareholder debentures ¹	(278)	(983)	(231)
Others	273	(205)	(161)
Financial expenses (REFIS)	(10)	(7)	(12)
Financial income	86	74	135
Derivatives²	856	(439)	(86)
Currency and interest rate swaps	788	(482)	(230)
Others (commodities, etc)	68	43	144
Foreign Exchange	(390)	1,452	107
Net foreign exchange gain (losses)	(390)	320	107
Reclassification of cumulative translation adjustment on VNC sale	-	1,132	-
Monetary variation	(25)	222	(56)
Financial result, net	350	(77)	(485)

¹ In 2Q21, there remuneration on shareholder debentures was US\$ 193 million.

² The cash effect of the derivatives was a gain of US\$ 60 million in 2Q21 and a loss of US\$ 199 million in 1Q21.

CAPEX

Investments in 2Q21 totaled US\$ 1.139 billion, comprising US\$ 929 million in the maintenance of operations and US\$ 210 million in project execution. Investments were 12.8% higher than in 1Q21, mainly due to (i) higher investments in Voisey's Bay Mine Expansion and Serra Sul 120 Mtpy; (ii) Sol do Cerrado solar project; and (iii) seasonally higher sustaining investments.

Project Execution and Sustaining by business area

US\$ million	2Q21	%	1Q21	%	2Q20	%
Ferrous Minerals	648	56.9	608	60.3	541	55.9
Base Metals	426	37.4	359	35.6	358	37.0
Coal	36	3.2	29	2.9	31	3.2
Energy and others	29	2.5	13	1.3	37	3.8
Total	1,139	100.0	1,009	100.0	967	100.0

Project execution

Investments in project execution totaled US\$ 210 million in 2Q21, US\$ 58 million higher than 1Q21, mainly due to higher investments in (i) Serra Sul 120 Mtpy project with the progress of procurement phase; and (ii) Sol do Cerrado solar project with acquisition of photovoltaic panels and procurement activities.

Project execution by business area

US\$ million	2Q21	%	1Q21	%	2Q20	%
Ferrous Minerals	113	53.8	82	53.9	59	47.6
Base Metals	69	32.9	68	44.7	63	50.8
Energy and others	28	13.3	2	1.3	2	1.6
Total	210	100.0	152	100.0	124	100.0

The Northern System 240 Mtpy Project started the construction of loading silos and products stockyard earthworks. The Serra Sul 120 Mtpy and Capanema projects progressed on equipment and services procurement activities and engineering plan improvements. Salobo III Project advanced on the construction of milling installations.

Serra Sul 120 Mtpy and Salobo III start-ups were delayed to 2H24 and end of 2H22, respectively. The iron ore project update is due to a new estimate for the installation license issuance. The copper project review was necessary, as delays in civil works mainly related to COVID-19 restrictions, required the re-planning of contractors' performance. As result, Salobo III total investment is expected to increase to US\$ 1.056 billion (vs. US\$ 816 million), but still below the original US\$ 1.128 billion approval in 2018.

Capital projects progress indicator⁷

Projects	Capacity (per year)	Estimated start-up ¹	Executed capex (US\$ million)		Estimated capex (US\$ million)		Physical progress (%)
			2Q21	Total	2021	Total	
Ferrous Minerals Project							
Northern System 240 Mtpy	10 Mt	2H22	56	292	229	772	80% ¹
Capanema	18 Mt ²	2H23	1	1	47	495	1%
Serra Sul 120 Mtpy ³	20 Mt	2H24	22	26	168	1,502	1%
Base Metals Project							
Salobo III	30-40 kt	2H22	61	471	329	1,056	77%

¹ Considering mine-plant project front physical progress.

² Capanema project adds 14 Mtpy capacity in Timbopeba site expedition in its first years.

³ The project consists of increasing the S11D mine-plant capacity by 20 Mtpy.

Sustaining CAPEX

Investments in the maintenance of operations totaled US\$ 929 million in 2Q21, US\$ 72 million higher than in 1Q21, mainly due to (i) higher investments in Voisey's Bay Mine Expansion; (ii) higher expenditures Moatize revamp; and (iii) seasonally higher sustaining investments.

Sustaining capex by business area

US\$ million	2Q21	%	1Q21	%	2Q20	%
Ferrous Minerals	535	57.6	526	61.4	482	57.2
Base Metals	357	38.4	291	34.0	295	35.0
Nickel	325	35.0	266	31.0	255	30.2
Copper	32	3.4	25	2.9	40	4.7
Coal	36	3.9	29	3.4	31	3.7
Energy and others	1	0.1	11	1.3	35	4.2
Total	929	100.0	857	100.0	843	100.0

Sustaining capex by type - 2Q21

US\$ million	Ferrous Minerals	Base Metals	Coal	Energy and others	TOTAL
Enhancement of operations	228	165	28	1	422
Replacement projects	33	149	-	-	182
Filtration and dry stacking projects	138	-	-	-	138
Dam management	6	4	-	-	10
Other investments in dams and waste dumps	32	2	1	-	35
Health and Safety	42	27	4	-	73
Social investments and environmental protection	22	3	1	-	26
Administrative & Others	34	7	2	-	43
Total	535	357	36	1	929

⁷ Pre-operating expenses were not included in the estimated capex for the year, although included in the total estimated capex column, in line with Vale's Board of Directors approvals. Estimated capex for the year is only reviewed once a year.

In June, we achieved the first ore production of Reid Brook deposit at the Voisey's Bay Mine Extension, the first of two underground mines to be developed in the project. The start-up of the second deposit, Eastern Deeps, is expected by 2H22. On the Gelado project, we started the assembly of the pumping tanks. Gelado project start-up was postponed to 2H22 (from 1H22) as a result of civil works delays related to COVID-19 restrictions

Replacement projects progress indicator

Projects	Capacity (per year)	Estimated start-up	Executed capex (US\$ million)		Estimated capex (US\$ million)		Physical progress (%)
			2Q21	Total	2021	Total	
Gelado	9.7 Mt	2H22	23	223	100	428	81%
Voisey's Bay Mine Extension	45 kt	1H21	140	1,155 ¹	449	1,694	66%

¹ Total expenditure on accrual basis as of June 30, 2021 was US\$ 1.323 billion

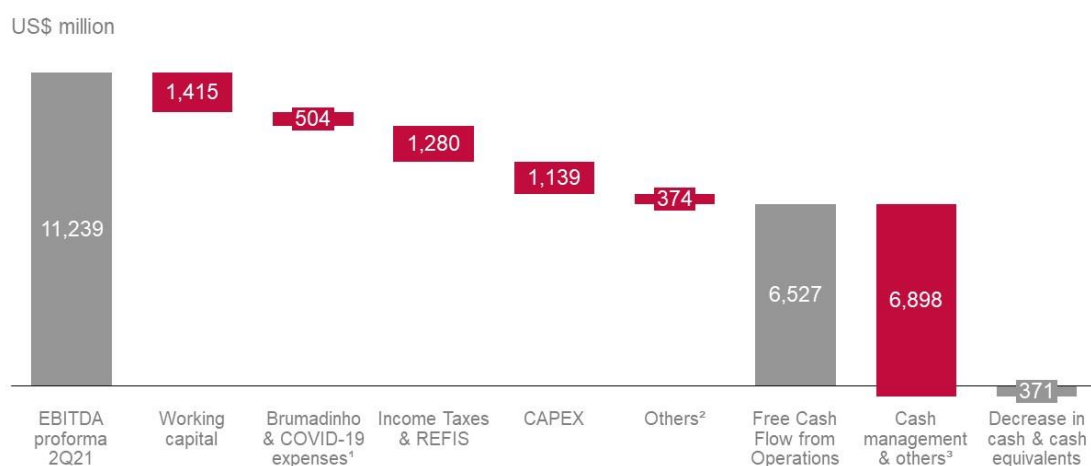
Free cash flow

Vale generated US\$ 6.527 billion in Free Cash Flow from Operations in 2Q21, US\$ 680 million higher than in 1Q21. The improvement followed the higher proforma EBITDA, partially offset by (i) the increase of working capital, mainly due to the increase in accounts receivables, and (ii) the higher income taxes, resulting from higher quarterly results.

The increase in account receivables is attributed to the combined effect of a higher volume of accrual sales and higher iron ore prices.

The solid operational cash flow generation enabled Vale to distribute US\$ 4.212 billion to shareholders via dividends and share buybacks and prepay the US\$ 2.517 billion Nacala Logistics Corridor Project Finance.

Free Cash Flow 2Q21



¹ Includes US\$ 303 million of disbursement of Brumadinho provisioned expenses, US\$ 185 million of Brumadinho incurred expenses and US\$ 16 million of COVID-19 expenses.

² Includes derivatives, interest on loans, payments to Samarco, leasing, dividends, interest on capital paid to noncontrolling interest, and others.

³ Includes US\$ 2.517 billion related to the prepayment of project finance, US\$ 2.208 billion of dividends, US\$ 2.004 billion of share buyback, US\$ 169 million of net debt repayment.

Debt

Gross debt totaled US\$ 12.154 billion as of June 30th, 2021, in line with March 31st, 2021. Net debt position⁸ slightly improved to negative US\$ 738 million in the same period, US\$ 233 million lower than 1Q21, as cash generated in the quarter funded the buyback program, the payment dividends in June and the Nacala Logistics Corridor Project Finance prepayment.

Expanded Net debt increased to US\$ 11.448 billion as of June 30th, 2021, mainly as a result of (i) the impact from BRL appreciation of 12% on the BRL-denominated commitments and (ii) the additional provision recorded for Samarco and Renova Foundation obligations, following the update of the assumptions used to estimate the costs related to the repair and compensation programs.

Average debt maturity was 8.9 years on June 30th, 2021, and the average cost of debt, after currency and interest rate swaps, was 4.59% per annum, both in line with 1Q21.

Debt indicators

US\$ million	2Q21	1Q21	2Q20
Gross debt ¹	12,154	12,176	16,903
Lease (IFRS 16)	1,708	1,631	1,652
Gross debt and leases	13,862	13,807	18,555
Cash, cash equivalents and short-term investments	14,600	14,312	12,206
Net debt	(738)	(505)	6,349
Currency swaps ²	357	1,077	1,133
Refis	2,692	2,432	2,749
Brumadinho provisions	6,646	5,976	3,409
Samarco & Renova Foundation provisions	2,491	1,732	1,669
Expanded net debt	11,448	10,712	15,309
Total debt / adjusted LTM EBITDA (x)	0.5	0.6	1.3
Net debt / adjusted LTM EBITDA (x)	(0.02)	(0.02)	0.44
Adjusted LTM EBITDA / LTM gross interest (x)	37.4	27.2	16.5

¹ Does not include leases (IFRS 16).

² Includes interest rate swaps.

⁸ Starting 2Q21, we will report leases obligations as part of net debt, in line with IFRS16. We adjusted previously reported figures accordingly.

Performance of the business segments

Segment information — 2Q21, as per footnote of financial statements

US\$ million	Net operating revenues	Cost ¹	Expenses			Dividends and interest received from associates and JVs	Adjusted EBITDA
			SG&A and others ¹	R&D ¹	Pre operating & stoppage ¹		
Ferrous Minerals	14,297	(3,446)	(59)	(44)	(91)	22	10,679
Iron ore fines	12,200	(2,816)	(61)	(43)	(74)	-	9,206
Pellets	1,947	(520)	2	-	(13)	22	1,438
Others ferrous	98	(71)	1	(1)	-	-	27
Mn & Alloys	52	(39)	(1)	-	(4)	-	8
Base Metals	2,180	(1,188)	(26)	(39)	(61)	-	866
Nickel ²	1,492	(959)	(25)	(18)	(60)	-	430
Copper ³	688	(229)	(1)	(21)	(1)	-	436
Coal	161	(323)	-	(2)	-	-	(164)
Others	37	(48)	(96)	(56)	-	21	(142)
Subtotal	16,675	(5,005)	(181)	(141)	(152)	43	11,239
Brumadinho impact	-	-	(185)	-	-	-	(185)
COVID-19 donations	-	-	(16)	-	-	-	(16)
Total	16,675	(5,005)	(382)	(141)	(152)	43	11,038

¹ Excluding depreciation, depletion and amortization.

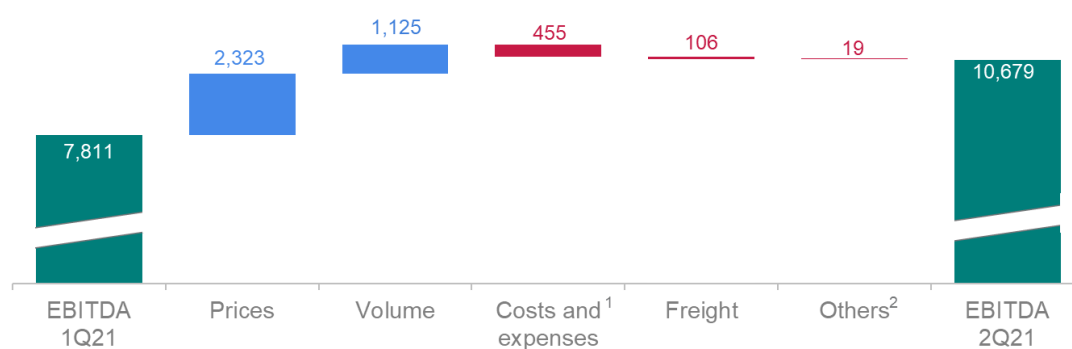
² Including copper, by-products from our nickel operations and marketing activities.

³ Including by-products from our copper operations.

Ferrous Minerals

Ferrous Minerals adjusted EBITDA totaled a record US\$ 10.679 billion, driven by price increase and higher volumes. The adjusted EBITDA per ton for Ferrous Minerals, excluding Manganese and Ferroalloys, totaled US\$ 142.5/t, an increase of US\$ 23.6/t when compared to 1Q21.

Ferrous Minerals EBITDA variation – US\$ million (2Q21 x 1Q21)



¹ Excluding FX and volume effect.

² Including the positive effect of higher dividends (US\$ 22 million) and the negative FX effect (-US\$ 41 million).

The share of premium products⁹ in total sales was 82% in 2Q21, lower than in 1Q21, resulting from the production increase of high-silica products taking advantage of record prices. Iron ore fines and pellets quality premiums totaled US\$ 8.4/t in 2Q21, in line with 1Q21, as pellets, IOCJ and BRBF premiums were offset by a higher share of high-silica products.

Iron ore fines and pellets quality premium

US\$/t	2Q21	1Q21	2Q20
Iron ore fines quality premium	3.0	6.9	5.3
Pellets weighted average contribution	5.4	1.5	2.2
Iron ore fines and pellets total quality premium	8.4	8.3	7.5
Share of premium products¹ (%)	82%	89%	83%

¹ Composed of pellets, Carajás (IOCJ), Brazilian Blend Fines (BRBF) and pellet feed.

Volume sold

'000 metric tons	2Q21	1Q21	2Q20
Iron ore fines	66,740	58,872	54,569
ROM	479	426	46
Pellets	7,647	6,271	6,950
Manganese ore	169	258	270
Ferroalloys	15	14	10

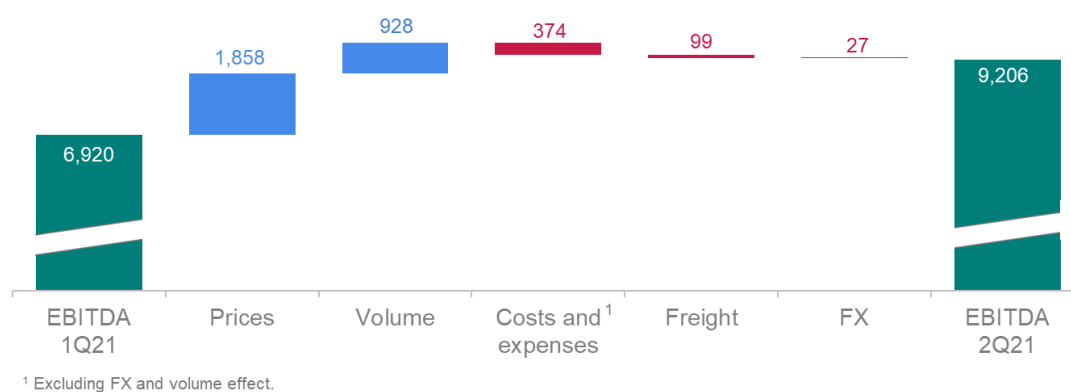
⁹ Pellets, Carajás (IOCJ), Brazilian Blend Fines (BRBF) and pellet feed.

Net operating revenue by product

US\$ million	2Q21	1Q21	2Q20
Iron ore fines	12,200	9,154	4,852
ROM	14	24	3
Pellets	1,947	1,208	900
Manganese & Ferroalloys	52	46	68
Others	84	73	72
Total	14,297	10,505	5,895

Iron ore fines (excluding Pellets and ROM)

Iron ore fines EBITDA variation – US\$ million (2Q21 x 1Q21)

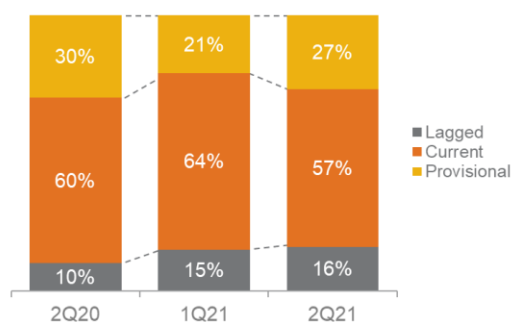


REVENUES AND SALES VOLUMES

Iron ore fines' net revenues, excluding pellets and run of mine (ROM), increased to US\$ 12.200 billion in 2Q21 vs. US\$ 9.154 billion in 1Q21, as a result of 18% higher realized prices (US\$ 1.858 billion) and 13% increase in sales volumes (US\$ 1.188 billion).

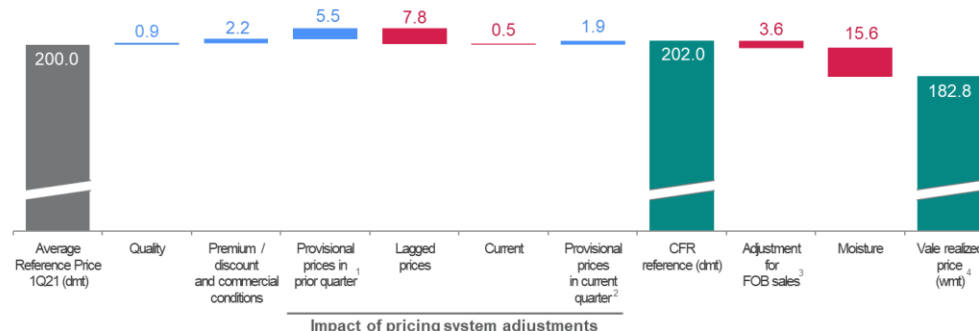
Sales volumes of iron ore fines totaled 66.7 Mt in 2Q21, in line with production. CFR sales were 52.3 Mt in 2Q21, representing 78% of total sales.

Pricing system breakdown (%)



Vale's realized price CFR/FOB totaled US\$ 182.8/t, an increase of US\$ 27.3/t compared with 1Q21. The higher market prices (US\$ 33.1/t) were partially offset by (i) lower premiums and quality adjustments (US\$ 3.9/t), as the higher share of sales of high-silica products more than offset the wider spread to 62% Fe benchmark index; and (ii) negative impact of products moisture, due to higher prices (US\$ 2.9/t).

Price realization iron ore fines – US\$/t, 2Q21



¹ Adjustment as a result of provisional prices booked in 1Q21 at US\$ 159.9/t.

² Difference between the weighted average of the prices provisionally set at the end of 2Q21 at US\$ 206.9/t based on forward curves and US\$ 200.0/t from the 2Q21 62% Fe reference price.

³ Includes freight pricing mechanisms of CFR sales freight recognition.

⁴ Vale's price is net of taxes.

Average prices

US\$/ metric ton	2Q21	1Q21	2Q20
Iron ore - Metal Bulletin 65% index	232.9	191.2	108.5
Iron ore - Metal Bulletin 62% low alumina index	202.1	167.9	95.9
Iron ore - 62% Fe reference price	200.0	166.9	93.3
Provisional price at the end of the quarter	206.9	159.9	94.3
Iron ore fines Vale CFR reference (dmt)	202.0	171.1	100.4
Iron ore fines Vale CFR/FOB realized price	182.8	155.5	88.9
Pellets CFR/FOB (wmt)	254.7	192.6	129.4
Manganese ore	171.8	109.7	214.3
Ferroalloys	1,508.1	1,158.6	1,005.9

COSTS

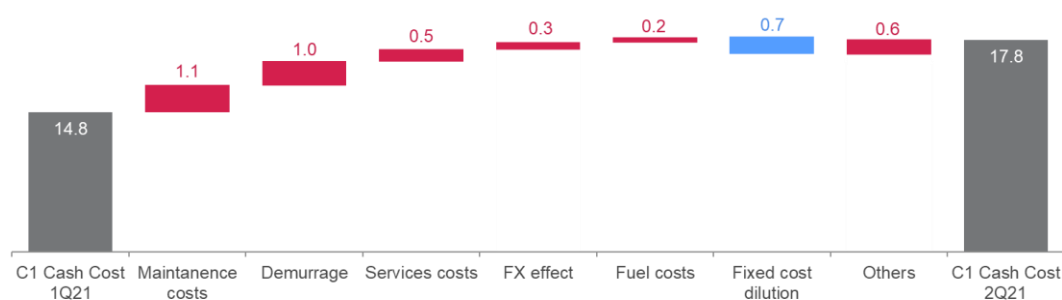
IRON ORE COGS - 1Q21 x 2Q21

US\$ million	1Q21	Variance drivers				2Q21
		Volume	Exchange rate	Others	Total variation	
C1 cash costs	1,029	139	22	289	450	1,479
Freight	747	79	-	99	178	925
Distribution costs	76	10	-	(6)	4	80
Royalties & others	235	31	-	66	97	332
Total costs before depreciation and amortization	2,087	259	22	448	729	2,816
Depreciation	255	33	9	15	57	312
Total	2,342	292	31	463	786	3,128

Vale's C1 cash cost ex-third-party purchases increased to US\$ 17.8/t in 2Q21 from US\$ 14.8/t in 1Q21, resulting mainly from (i) higher demurrage costs (US\$ 1.0/t), as the accident with Ponta da Madeira shiploader CN6 in January caused a longer queue of vessels; (ii) higher maintenance costs (US\$ 1.1/t) and service costs (US\$ 0.5/t), with more scheduled interventions in plants and railways, but also with significant increases in input prices and contractors' rates, (iii) negative impact of the exchange rate (US\$ 0.3/t); and (iv) higher diesel costs (US\$ 0.2/t); which were partially offset by higher fixed cost dilution on higher production volumes (US\$ 0.7/t).

Vale expects C1 costs ex-third-party purchases for 4Q21 (vs. 2Q21) to decrease around US\$ 1.5/t, mainly due to higher dilution of fixed costs and normalization of demurrage costs.

C1 cash cost variation (excluding 3rd party purchases) – US\$/t (2Q21 x 1Q21)



Vale's unit maritime freight cost was US\$ 17.7/t in 2Q21, US\$ 1.9/t higher than 1Q21. The relevant share of long-term freight agreements limited the impact of the US\$ 8.2/t higher average freight spot rates¹⁰ to US\$ 1.4/t, with an additional higher bunker oil costs effect of US\$ 0.8/t. Lower insurance costs and others offset US\$ 0.2/t of increase.

¹⁰ Tubarão/Qingdao (C3) index.

Iron ore fines cash cost and freight

	2Q21	1Q21	2Q20
Costs (US\$ million)			
Vale's iron ore fines C1 cash cost (A)	1,479	1,029	933
Third-party purchase costs ¹ (B)	378	198	139
Vale's C1 cash cost ex-third-party volumes (C = A – B)	1,102	832	793
Sales volumes (Mt)			
Volume sold (ex-ROM) (D)	66.7	58.9	54.6
Volume sold from third-party purchases (E)	4.8	2.8	3.1
Volume sold from own operations (F = D – E)	61.9	56.1	51.5
Iron ore fines cash cost (ex-ROM, ex-royalties), FOB (US\$ /t)			
Vale's C1 cash cost ex-third-party purchase cost (C/F)	17.8	14.8	15.4
Average third-party purchase C1 cash cost (B/E)	78.6	70.8	45.5
Vale's iron ore cash cost (A/D)	22.2	17.5	17.1
Freight			
Maritime freight costs (G)	925	747	597
% of CFR sales (H)	78%	80%	81%
Volume CFR (Mt) (I = D x H)	52.3	47.3	44.2
Vale's iron ore unit freight cost (US\$/t) (G/I)	17.7	15.8	13.5

¹ Includes logistics costs related to third-party purchases.

EXPENSES

Iron ore fines expenses, net of depreciation, amounted to US\$ 179 million in 2Q21, US\$ 32 million higher than 1Q21, mainly as a result of (i) absence of the positive effect in 1Q21 of iron ore sales contractual fines (US\$ 14 million); (ii) non-recurring expense of MBR incorporation (US\$ 11 million); (iii) higher R&D expenses (US\$ 9 million); (iv) higher selling expenses (US\$ 7 million); and (v) higher expenditures in social projects and donations (US\$ 3 million), which were partially offset by lower Brumadinho stoppage expenses (US\$ 17 million) as a result of lower expenses in Brucutu.

Expenses - iron ore fines

US\$ millions	2Q21	1Q21	2Q20
Selling	17	11	13
R&D	43	33	25
Pre-operating and stoppage expenses	74	92	122
Brumadinho stoppage expenses	61	78	97
Others	13	14	25
Other expenses	44	11	46
Total expenses	178	147	206

Iron ore pellets

Adjusted EBITDA for pellets was US\$ 1.438 billion in 2Q21, 71% higher than in 1Q21, mainly as a result of higher realized prices (US\$ 431 million) and higher sales volumes (US\$ 207 million).

Realized prices in 2Q21 averaged US\$ 254.7/t, increasing US\$ 62.0/t vs. 1Q21, largely attributed to higher 65% Fe price index and greater contractual pellet premiums, but partially compensated by the negative effect of lagged prices.

FOB pellets sales of 5.0 Mt in 2Q21 represented 65% of total pellets sales. CFR pellets sales amounted to 2.7 Mt in 2Q21. The increase in the share of CFR is a result of higher sales to the Middle East region.

Costs totaled US\$ 520 million (or US\$ 613 million with depreciation charges) in 2Q21. Excluding the impact of higher sales volumes (US\$ 101 million), costs increased by US\$ 36 million when compared with 1Q21, mainly due to higher leasing costs, as a result of higher premiums, and the negative effect of foreign exchange movements.

Pellets - EBITDA

	2Q21		1Q21	
	US\$ million	US\$/wmt	US\$ million	US\$/wmt
Net revenues / Realized price	1,947	254.7	1,208	192.6
Dividends received (Leased pelletizing plants)	22	2.9	-	-
Cash costs (Iron ore, leasing, freight, overhead, energy and other)	(520)	(68.0)	(383)	(61.1)
Pre-operational & stoppage expenses	(13)	(1.7)	(13)	(2.1)
Expenses (Selling, R&D and other)	2	0.3	28	4.5
EBITDA	1,438	188.0	840	134.0

Iron ore fines and pellets cash break-even¹¹

Iron ore and pellets cash break-even landed in China¹

US\$/t	2Q21	1Q21	2Q20
Vale's C1 cash cost ex-third-party purchase cost	17.8	14.8	15.4
Third party purchases cost adjustments	4.4	2.7	1.7
Vale's iron ore cash cost (ex-ROM, ex-royalties), FOB (US\$/t)	22.2	17.5	17.1
Iron ore fines freight cost (ex-bunker oil hedge)	17.7	15.8	13.5
Iron ore fines distribution cost	1.2	1.3	0.9
Iron ore fines stoppage expenses ² related to Brumadinho	0.9	1.3	1.8
Iron ore fines expenses ² & royalties	6.7	5.2	4.9
Iron ore fines moisture adjustment	4.2	3.5	3.4
Iron ore fines quality adjustment	(3.0)	(6.9)	(5.3)
Iron ore fines EBITDA break-even (US\$/dmt)	49.9	37.7	36.3
Iron ore fines pellet adjustment	(5.4)	(1.5)	(2.2)
Iron ore fines and pellets EBITDA break-even (US\$/dmt)	44.5	36.2	34.1
Iron ore fines sustaining investments	7.5	8.4	8.1
Iron ore fines and pellets cash break-even landed in China (US\$/dmt)	52.0	44.6	42.2

¹ Measured by unit cost + expenses + sustaining investment adjusted for quality

² Net of depreciation and includes dividends received

¹¹ Does not include the impact from the iron ore fines and pellets pricing system mechanism.

Volume sold by destination – Iron ore and pellets

'000 metric tons	2Q21	1Q21	2Q20
Americas	9,939	9,261	4,937
Brazil	7,633	7,099	4,459
Others	2,306	2,162	478
Asia	56,381	50,525	51,011
China	45,142	40,798	43,144
Japan	6,054	4,422	3,428
Others	5,185	5,305	4,439
Europe	6,215	4,622	3,629
Germany	825	1,087	720
France	1,539	783	114
Others	3,851	2,572	2,795
Middle East	1,566	276	1,139
Rest of the World	765	885	849
Total	74,866	65,569	61,565

Selected financial indicators - Ferrous Minerals

US\$ million	2Q21	1Q21	2Q20
Net Revenues	14,297	10,505	5,895
Costs ¹	(3,446)	(2,559)	(2,214)
Expenses ¹	(59)	8	(56)
Pre-operating and stoppage expenses ¹	(91)	(109)	(149)
R&D expenses	(44)	(34)	(27)
Dividends and interests on associates and JVs	22	-	53
Adjusted EBITDA	10,679	7,811	3,502
Depreciation and amortization	(455)	(397)	(478)
Adjusted EBIT	10,224	7,414	3,024
Adjusted EBIT margin (%)	71.5	70.6	51.3

¹ Net of depreciation and amortization

Selected financial indicators - Iron ore fines

US\$ million	2Q21	1Q21	2Q20
Adjusted EBITDA (US\$ million)	9,206	6,920	2,907
Volume Sold (Mt)	66.7	58.9	54.6
Adjusted EBITDA (US\$/t)	138	118	53.0

Selected financial indicators - Pellets

US\$ million	2Q21	1Q21	2Q20
Adjusted EBITDA (US\$ million)	1,438	840	560
Volume Sold (Mt)	7.6	6.3	7.0
Adjusted EBITDA (US\$/t)	188	134	81

Selected financial indicators - Ferrous ex Manganese and Ferroalloys

US\$ million	2Q21	1Q21	2Q20
Adjusted EBITDA (US\$ million)	10,671	7,793	3,487
Volume Sold (Mt) ¹	74.9	65.6	61.6
Adjusted EBITDA (US\$/t)	143	119	57

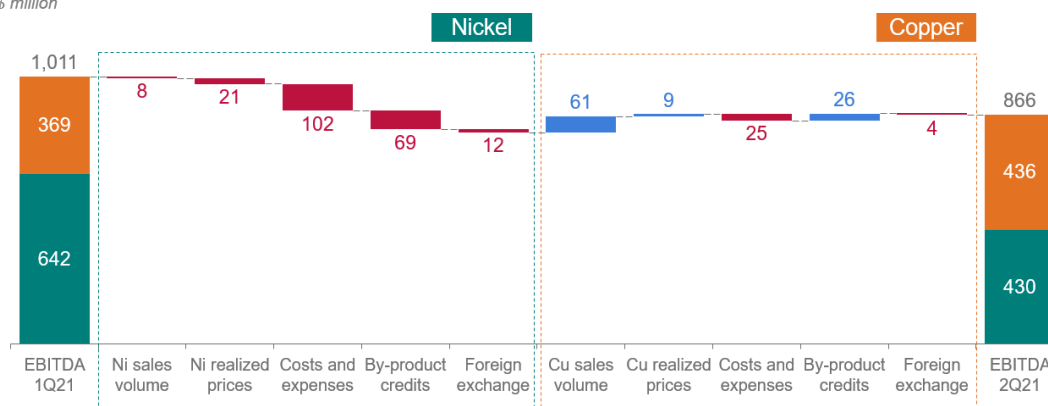
¹ Volume including iron ore fines, pellets and ROM.

Base Metals

Base Metals adjusted EBITDA¹² was US\$ 866 million in 2Q21, US\$ 145 million lower than 1Q21.

Base Metals - EBITDA 2Q21 vs. 1Q21

US\$ million



The lower EBITDA in the quarter was mainly due to:

- Higher stoppage expenses in Sudbury operations as a result of the labor disruption;
- Lower nickel by-products credits, mainly due to lower copper volumes and lower rhodium realized prices;
- Higher copper costs due to backlog of maintenance activities as well as cost escalation for maintenance and operational services and supplies.

These effects were partially offset by:

- Higher copper sales, due to solid production and higher copper realized prices in the quarter;
- Higher copper by-product credits, mainly due to higher precious metals volume.

Base Metals EBITDA overview – 2Q21

US\$ million	North Atlantic	PTVI Site	Onça Puma	Sossego	Salobo	Others	Subtotal Base Metals	Marketing activities	Total Base Metals
Net Revenues	1,003	208	80	195	493	(63)	1,916	264	2,180
Costs	(600)	(135)	(42)	(87)	(142)	81	(925)	(263)	(1,188)
Selling and other expenses	(12)	-	(3)	(2)	1	(10)	(26)	-	(26)
Pre-operating and stoppage expenses	(59)	-	-	-	(1)	(1)	(61)	-	(61)
R&D	(15)	(1)	-	(6)	-	(17)	(39)	-	(39)
EBITDA	317	72	35	100	351	(10)	865	1	866

¹² VNC site results are not reported as part of Base Metals results. Previous Base Metals results were restated to reflect this change. Results from VNC site are being accounted for as "Other" in the Segment Information.

Average prices

US\$/ metric ton	2Q21	1Q21	2Q20
Nickel - LME	17,359	17,570	12,215
Copper - LME	9,700	8,504	5,356
Nickel - realized prices	17,183	17,630	14,436
Copper - realized prices ¹	9,653	9,493	5,994
Gold (US\$/oz)	1,708	1,781	1,743
Silver (US\$/oz)	25.05	24.58	18.09
Cobalt (US\$/t)	43,039	44,834	36,009

¹Considers Salobo and Sossego operations.

Nickel operations

Nickel operations, excluding marketing activities – EBITDA by operation

US\$ million	2Q21	1Q21	2Q20
North Atlantic operation ¹	317	509	195
PTVI	72	89	59
Onça Puma	35	53	8
Others ²	5	(9)	29
Total	429	642	291

¹ Includes the operations in Canada and in the United Kingdom.

² Includes the PTVI, intercompany sales eliminations, purchase of finished nickel. Hedge results have been relocated to each nickel business operation.

North Atlantic operations' EBITDA was lower in 2Q21 due to (i) higher stoppage expenses as a result of labor disruption in Sudbury, (ii) lower by-products credits and (iii) lower nickel sales volumes and realized prices.

PTVI's EBITDA was lower in 2Q21 due to (i) higher costs related to higher fuel prices and (ii) lower nickel realized prices.

Onça Puma's EBITDA was lower in 2Q21 mainly due to lower nickel sales volumes and realized prices.

Nickel Revenue and Realized Price

Net operating revenue by product - Nickel operations, excluding marketing activities

US\$ million	2Q21	1Q21	2Q20
Nickel	815	846	542
Copper	173	239	133
Gold as by-product	18	16	28
Silver as by-product	8	4	5
PGMs	169	183	120
Cobalt	24	19	19
Others	21	6	6
Total	1,228	1,313	853

Volume sold - Nickel operations

'000 metric tons	2Q21	1Q21	2Q20
Nickel ¹	47	48	38
Upper Class I	26	25	18
Lower Class I nickel	8	8	3
Class II nickel	10	12	13
Intermediates	3	3	5
VNC eliminations ²	-	-	(1)
Copper	18	26	24
Gold as by-product ('000 oz)	11	10	16
Silver as by-product ('000 oz)	334	163	232
PGMs ('000 oz)	69	60	91
Cobalt (metric ton)	568	428	540

¹ Nickel sales volumes were adjusted in the financial report to reflect VNC divestment.

² Volumes associated with revenues from VNC that are accounted for as Other in segment information.

Nickel realized price

US\$/t	2Q21	1Q21	2Q20
LME average nickel price	17,359	17,570	12,215
Average nickel realized price	17,183	17,630	14,436
Contribution to the NRP by category:			
Nickel average aggregate premium	0	(10)	90
Other timing and pricing adjustments contribution	(176)	70	2,131

Nickel realized price in 2Q21 decreased 2.5% from 1Q21 mainly due to 1.2% lower LME nickel average price and the negative impact of timing and pricing adjustments.

Premiums / discount by nickel product

US\$/t	2Q21	1Q21	2Q20
Upper Class I nickel	820	820	1,130
Lower Class I nickel	170	140	300
Class II nickel	(760)	(750)	(280)
Intermediates	(4,040)	(3,860)	(2,560)

Product type by operation

% of source sales	North Atlantic	PTVI	Onça Puma	Total 2Q21	Total 1Q21
Upper Class I	74%	0%	0%	54%	52%
Lower Class I	23%	0%	0%	17%	17%
Class II	2%	55%	100%	21%	25%
Intermediates	1%	45%	0%	8%	6%

Other timing and pricing adjustments had an aggregate negative impact of US\$ 176/t in 2Q21, due to (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 an impact of negative US\$ 176/t¹³, (ii) fixed-price sales, with an impact of negative US\$ 59/t (iii) the effect of the hedging on Vale's nickel price realization, with a positive impact of US\$ 21/t in the quarter and (iv) other effects, of positive US\$ 38/t.

¹³ In October 2020, Vale decided to execute new hedge operations, continuing the Nickel Revenue Hedging Program to provide stable cash generation during a period of significant investments. As of June 30th, 2021, the average strike price for the collar position was US\$ 15,000/t for the put options and US\$ 17,618/t for the call options.

Nickel Costs and Expenses, excluding marketing activities

Nickel COGS - 1Q21 x 2Q21

US\$ million	Variance drivers					2Q21
	1Q21	Volume	Exchange rate	Others	Total variation	
Nickel operations	650	(1)	12	35	46	696
Depreciation	220	(7)	5	12	10	230
Total	870	(8)	17	47	56	926

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

US\$/t	2Q21	1Q21	2Q20
North Atlantic operations ¹	5,840	3,774	4,183
PTVI	8,492	7,836	6,401
Onça Puma	8,248	7,763	9,532

¹ North Atlantic figures include Clydach refining costs.

North Atlantic operations' unit cash cost after by-products increased in 2Q21 mainly due to lower dilution of fixed-costs alongside lower by-product credits.

PTVI's unit cash cost was negatively affected in 2Q21 by higher maintenance costs and higher fuel prices.

Onça Puma's higher unit cash cost reflects lower cost dilution due to lower production level versus the previous quarter.

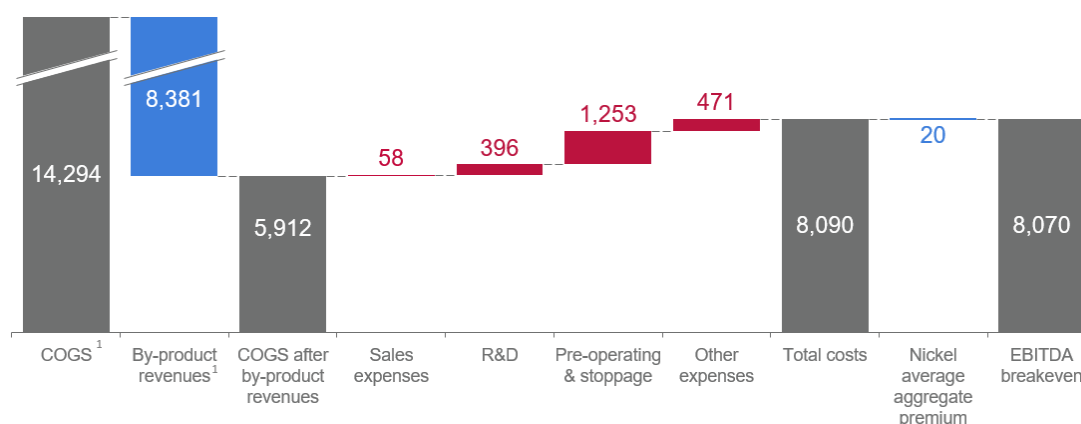
Selling expenses and other expenses totaled US\$ 25 million in 2Q21, including mines under care and maintenance in North Atlantic (US\$ 11 million).

Pre-operating and stoppage expenses totaled US\$ 60 million, mainly due to the labor disruption at our Sudbury operations (US\$ 59 million).

R&D expenses were US\$ 18 million in 2Q21, higher than 1Q21. These expenses encompass R&D initiatives for further operational improvements in North Atlantic.

EBITDA break-even – nickel operations¹⁴

US\$/t, 2Q21



¹ Excluding marketing activities

Selected financial indicators - Nickel operations, excluding marketing activities

US\$ million	2Q21	1Q21	2Q20
Net Revenues	1,228	1,313	853
Costs ¹	696	650	(508)
Expenses ¹	(25)	(10)	(16)
Pre-operating and stoppage expenses ¹	(60)	-	(29)
R&D expenses	(18)	(11)	(9)
Adjusted EBITDA	429	642	291
Depreciation and amortization	(230)	(220)	(193)
Adjusted EBIT	199	422	98
Adjusted EBIT margin (%)	16.2	32.1	11.5

¹ Net of depreciation and amortization

Copper operations – Salobo and Sossego

Copper – EBITDA by operation

US\$ million	2Q21	1Q21	2Q20
Salobo	351	284	259
Sossego	100	101	74
Others Copper ¹	(15)	(16)	(13)
Total	436	369	320

¹ Includes research expenses related to the Hu'u project.

Salobo's EBITDA increased in 2Q21 mainly due to higher copper and gold sales and production volumes, following operations performance improvements, primarily due to the continued ramp up of Salobo mine maintenance workshops after a broader review in 1Q21. These positive effects were partially offset by higher costs, mainly due to backlog of maintenance activities.

¹⁴ 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\$ 8,277/t.

Sossego's EBITDA in 2Q21 was relatively flat compared to 1Q21. Results were impacted mainly by higher costs related to repairs in the SAG¹⁵ and ball mill and general maintenance activities, which were offset by higher copper and gold sales volumes.

Copper revenue and realized price

Net operating revenue by product - Copper operations

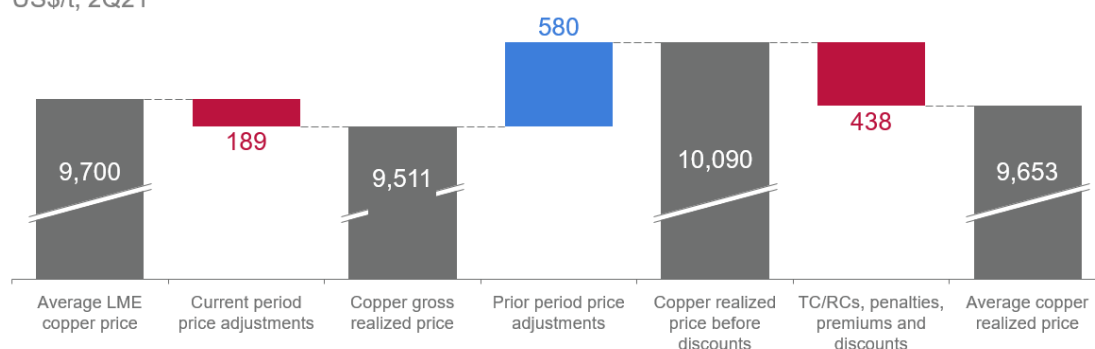
US\$ million	2Q21	1Q21	2Q20
Copper	538	431	358
Gold as by-product	145	119	163
Silver as by-product	5	4	2
Total	688	554	523

Volume sold - Copper operations

'000 metric tons	2Q21	1Q21	2Q20
Copper	56	45	60
Gold as by-product ('000 oz)	84	66	93
Silver as by-product ('000 oz)	188	152	181

Price realization – copper operations

US\$/t, 2Q21



Vale's copper products are sold on a provisional pricing basis¹⁶ during the quarter, with final prices determined in a future period, generally one to four months forward.

- Current period price adjustments: at the end of the quarter, mark-to-market of open invoices based on the copper price forward curve¹⁷;
- 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;
- TC/RCs, penalties, premiums, and discounts for intermediate products.

The effect of current period price adjustments of negative US\$ 189/t was mainly due to the forward price lower than the 2Q21 LME prices, while the positive effect of prior period price adjustments of US\$ 580/t was mainly due to higher LME prices in comparison with the original provisional pricing period.

¹⁵ Semi Autogenous Grinding mill

¹⁶ On June 30th, 2021, Vale had provisionally priced copper sales from Sossego and Salobo totaling 46,594 tons valued at an LME forward price of US\$ 9,373/t, subject to final pricing over the following months.

¹⁷ Includes a small number of final invoices that were provisionally priced and settled within the quarter.

Copper costs and expenses

Copper operations were impacted by higher costs mainly due to (i) backlog of maintenance activities at Salobo and (ii) repairs of the SAG and ball mills and general maintenance activities at Sossego, despite the positive effect of higher production and sales on fixed cost dilution in both sites. Consequently, **Salobo** unit cash costs after by-products have continued at positive levels, while **Sossego** surpassed the US\$ 3,000/t unit cash cost.

Overall, maintenance costs were negatively affected by price escalation on materials and services.

Copper COGS - 1Q21 x 2Q21

US\$ million	Variance drivers					2Q21
	1Q21	Volume	Exchange rate	Others	Total variation	
Copper operations	166	37	4	22	63	229
Depreciation	31	22	-	(12)	10	41
Total	197	59	4	10	73	270

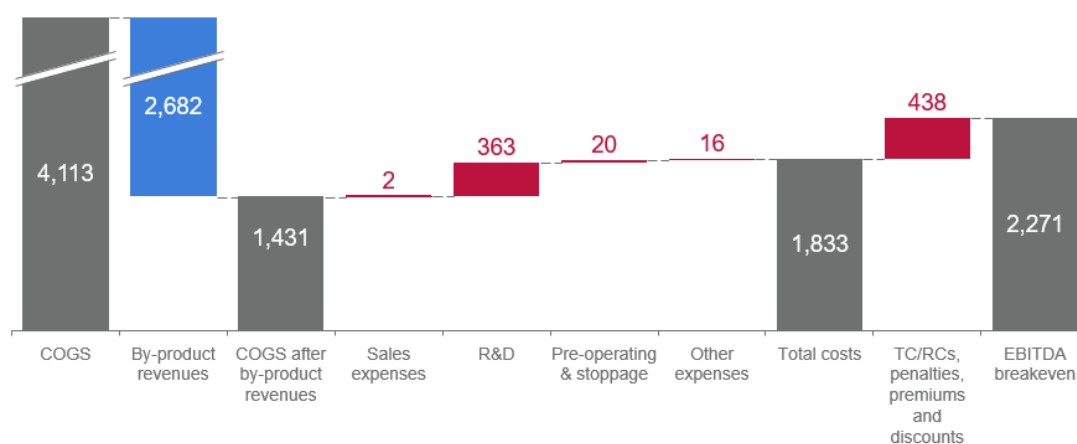
Copper operations – unit cash cost of sales, net of by-product credits

US\$/t	2Q21	1Q21	2Q20
Salobo	422	106	(431)
Sossego	3,623	2,711	2,055

Selling and other expenses were US\$ 1 million. Pre-operational and stoppage expenses totaled US\$ 1 million in 2Q21. Research and development expenses were US\$ 21 million in 2Q21, with Hu'u-related expenditures amounting to US\$ 15 million, Sossego-related expenses amounting to US\$ 5 million and other developments in the Carajás region amounting to US\$ 1 million in the quarter.

EBITDA break-even – copper operations¹⁸

US\$/t, 2Q21



¹⁸ 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\$ 3,728/t.

The realized price to be compared to the EBITDA break-even should be the copper realized price before discounts (US\$ 10,090/t), given that TC/RCs, penalties and other discounts are already part of the EBITDA break-even build-up.

Selected financial indicators - Copper operations, excluding marketing activities

US\$ million	2Q21	1Q21	2Q20
Net Revenues	688	554	523
Costs ¹	(229)	(166)	(185)
Expenses ¹	(1)	-	(3)
Pre-operating and stoppage expenses ¹	(1)	(1)	-
R&D expenses	(21)	(18)	(15)
Adjusted EBITDA	436	369	320
Depreciation and amortization	(41)	(31)	(33)
Adjusted EBIT	395	338	287
Adjusted EBIT margin (%)	57.4	61.0	54.9

¹ Net of depreciation and amortization

Coal

Coal adjusted EBITDA was negative US\$ 164 million in 2Q21, in line with 1Q21 EBITDA given the higher sales volumes but negatively impacted by the absence of the interest from Nacala recorded in 1Q21.

In June, following the Nacala Corridor Project Finance prepayment, Vale acquired Mitsui's stake in the Moatize coal mine and the Nacala Logistics Corridor. Therefore, starting in 3Q21, Vale is consolidating the mine and the logistics corridor in its financial statements. Accordingly, Coal adjusted EBITDA will stop recording costs previously financed through the Nacala Logistics Corridor's tariff, such as those related to debt service and investment in operations maintenance, which Vale will execute directly as sustaining capital.

Revenue and price realization

The higher net revenues on 2Q21 were due to the higher sales volumes (US\$ 47 million), with the continuing ramp-up of Moatize, and higher prices (US\$ 22 million).

Volume sold

'000 metric tons	2Q21	1Q21	2Q20
Metallurgical coal	713	474	516
Thermal coal	831	541	869
Total	1,544	1,015	1,385

Net operating revenue by product

US\$ million	2Q21	1Q21	2Q20
Metallurgical coal	99	58	52
Thermal coal	60	34	42
Total¹	161	92	94

¹ It includes US\$ 2 million of general cargo.

Coal prices

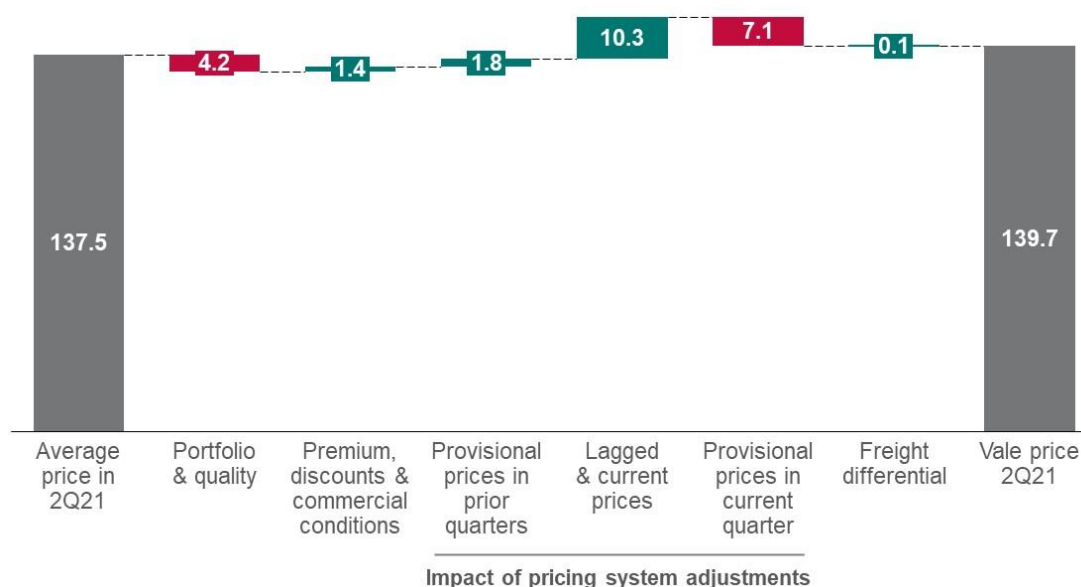
US\$/ metric ton	2Q21	1Q21	2Q20
Metallurgical coal index price ¹	137.5	127.1	118.3
Vale's metallurgical coal realized price	139.7	122.1	100.9
Thermal coal index price ²	104.7	90.8	54.8
Vale's thermal coal realized price	72.4	62.7	48.1
Vale's average realized price	103.5	90.4	67.7

¹ Reference price Premium Low Vol Hard Coking Coal FOB Australia.

² McCloskey FOB Richards Bay.

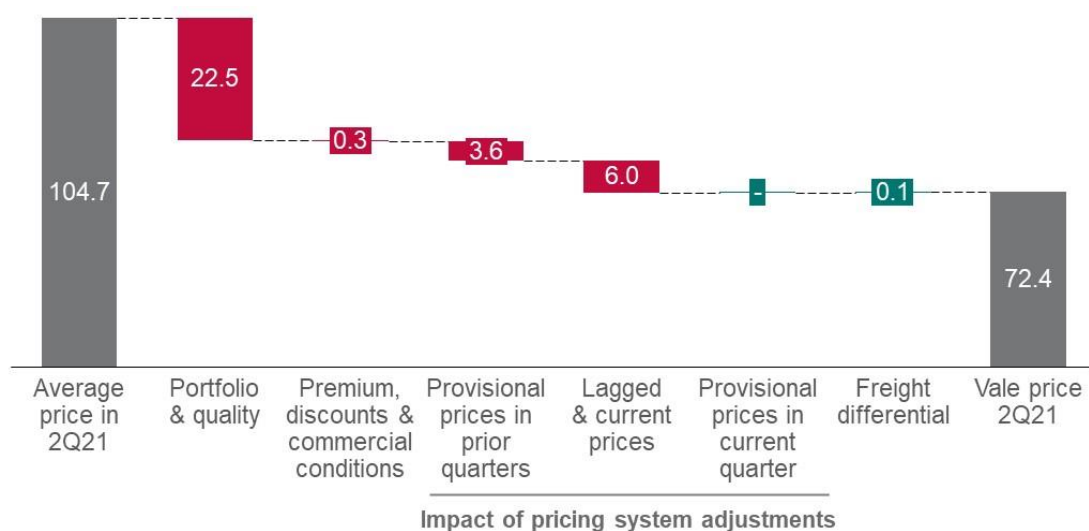
Price realization – Metallurgical coal

US\$/t 2Q21



Price realization – Thermal coal

US\$/t 2Q21



Costs and expenses

Costs totaled US\$ 323 million in 2Q21, in line with 1Q21, considering the higher variable cost resulting from higher sales volumes. Pro-forma C1 cash cost totaled US\$ 146.7/t, an increase compared to 1Q21 mainly due to the absence of the interest received from Nacala Logistic Corridor related to its debt service to Vale.

From 3Q21 onwards, Pro-forma C1 cash cost will no longer recognize both the burden from the project financing and interest received from Nacala Logistics Corridor, as Vale will consolidate it in its financial statements.

Pro-forma cash cost

US\$/ metric ton	2Q21	1Q21	2Q20
Pro-forma operational costs ¹ (A)	103.2	99.4	133.8
Nacala non-operational tariff ² (B)	34.8	29.9	56.7
Other costs (C) ³	8.7	(10.4)	(0.7)
Cost at Nacala Port (D = A+B+C)	146.7	118.9	189.8
NLC's debt service to Vale (E)	-	77.1	-
Pro-forma C1 cash cost (F = D-E)	146.7	41.8	189.8
Idle capacity	62.8	205.1	70.6
Total	209.5	246.9	260.4

¹ Includes the inferred NLC tariff components related to fixed and variable costs and excludes royalties.

² Includes the inferred NLC tariff components related to sustaining capex, working capital, taxes and other financial items.

³ Average costs of inventories are monthly tested vs. the expected sales prices leading to positive or negative variations, depending on previous provisions recorded.

Selected financial indicators - Coal

US\$ million	2Q21	1Q21	2Q20
Net Revenues	161	92	94
Costs ^{1 2}	(323)	(329)	(361)
Expenses ¹	-	2	3
R&D expenses	(2)	(2)	(5)
Dividends and interests on associates and JVs	-	78	-
Adjusted EBITDA	(164)	(159)	(269)
Depreciation and amortization	(17)	-	-
Adjusted EBIT	(181)	(159)	(269)
Adjusted EBIT margin (%)	(112)	(173)	(286)

¹ Net of depreciation and amortization

² Including idle capacity

ANNEXES

SIMPLIFIED FINANCIAL STATEMENTS

Income Statement

US\$ million	2Q21	1Q21	2Q20
Net operating revenue	16,675	12,645	7,518
Cost of goods sold and services rendered	(5,805)	(4,627)	(4,212)
Gross profit	10,870	8,018	3,306
Gross margin (%)	65.2	63.4	44.0
Selling and administrative expenses	(133)	(105)	(124)
Research and evaluation expenses	(141)	(100)	(90)
Pre-operating and operational stoppage	(191)	(145)	(238)
Brumadinho event	(185)	(115)	(130)
Other operational expenses, net	(74)	(12)	(237)
Impairment and disposal of non-current assets	(432)	(161)	(403)
Operating income	9,714	7,380	2,084
Financial income	86	74	135
Financial expenses	(177)	(1,386)	(585)
Other financial items, net	441	1,235	(35)
Equity results and other results in associates and joint ventures	(454)	(16)	(535)
Income (loss) before income taxes	9,610	7,287	1,064
Current tax	(1,201)	(1,515)	(326)
Deferred tax	(872)	(295)	181
Net income	7,537	5,477	919
Loss attributable to noncontrolling interests	(49)	(69)	(76)
Net income attributable to Vale's stockholders	7,586	5,546	995
Earnings per share (attributable to the Company's stockholders - US\$):			
Basic and diluted earnings per share (attributable to the Company's stockholders - US\$)	1.49	1.09	0.19

Equity income (loss) by business segment

US\$ million	2Q21	%	1Q21	%	2Q20	%
Ferrous Minerals	55	52	15	(54)	36	84
Base Metals	-	-	-	-	-	-
Coal	-	-	-	-	-	-
Others	50	48	(43)	154	7	16
Total	105	100	(28)	100	43	100

Balance sheet

US\$ million	6/30/2021	3/31/2021	6/30/2020
Assets			
Current assets	25,403	23,173	20,307
Cash and cash equivalents	13,649	12,883	12,113
Short term investments	951	1,429	93
Accounts receivable	4,954	3,515	2,597
Other financial assets	214	289	554
Inventories	4,701	4,274	4,058
Recoverable taxes	668	466	540
Others	266	317	352
Non-current assets	14,235	14,217	15,851
Judicial deposits	1,326	1,146	2,070
Other financial assets	1,430	2,111	2,300
Recoverable taxes	1,440	1,107	1,099
Deferred income taxes	9,338	9,207	9,804
Others	701	646	578
Fixed assets	57,078	49,594	46,989
Total assets	96,716	86,984	83,147
Liabilities			
Current liabilities	14,335	11,827	11,152
Suppliers and contractors	3,777	3,113	2,934
Loans, borrowings and leases	992	989	1,208
Other financial liabilities	1,547	2,082	1,269
Taxes payable	1,678	830	395
Settlement program (REFIS)	356	311	321
Provisions	1,156	903	850
Liabilities related to associates and joint ventures	1,467	846	709
Liabilities related to Brumadinho	2,223	1,847	1,013
De-characterization of dams	454	367	312
Dividends and interest on capital	27	21	1,159
Others	658	518	982
Non-current liabilities	40,022	39,728	39,061
Loans, borrowings and leases	12,870	12,818	17,347
Participative stockholders' debentures	4,687	4,045	2,061
Other financial liabilities	3,027	4,418	2,364
Settlement program (REFIS)	2,336	2,121	2,428
Deferred income taxes	1,985	1,944	1,631
Provisions	8,003	7,445	7,808
Liabilities related to associates and joint ventures	1,024	886	960
Liabilities related to Brumadinho	2,268	2,167	710
De-characterization of dams	1,701	1,595	1,374
Streaming transactions	1,961	1,986	2,031
Others	160	303	347
Total liabilities	54,357	51,555	50,213
Stockholders' equity	42,359	35,429	32,934
Total liabilities and stockholders' equity	96,716	86,984	83,147

Cash flow

US\$ million	2Q21	1Q21	2Q20
Cash flow from operations	9,277	8,673	2,111
Interest on loans and borrowings paid	(138)	(288)	(168)
Cash received (paid) on settlement of Derivatives, net	60	(199)	(114)
Interest on participative stockholders debentures paid	(193)	-	(95)
Income taxes (including settlement program)	(1,280)	(1,164)	(398)
Net cash provided by operating activities	7,726	7,022	1,336
Cash flows from investing activities:			
Short-term investment	543	(716)	449
Investment in fund applications	-	-	(96)
Capital expenditures	(1,139)	(1,009)	(967)
Additions to investments	-	(42)	-
Acquisition of NLC, net of cash	(2,345)	-	-
Cash paid on the disposal of VNC	-	(555)	-
Dividends received from joint ventures and associates	43	-	77
Other investment activities, net	(189)	(24)	(133)
Net cash used in investing activities	(3,087)	(2,346)	(670)
Cash flows from financing activities:			
Loans and financing:			
Loans and borrowings from third-parties	10	290	-
Payments of loans and borrowings from third-parties	(179)	(1,233)	(116)
Lease payments	(49)	(55)	(49)
Payments to stockholders:			
Dividends and interest on capital paid to stockholders	(2,208)	(3,884)	-
Dividends and interest on capital paid to noncontrolling interest	(3)	(3)	(5)
Share buyback program	(2,004)	-	-
Net cash used in financing activities	(4,433)	(4,885)	(170)
Increase (decrease) in cash and cash equivalents	206	(209)	496
Cash and cash equivalents at the beginning of the period	12,883	13,487	11,788
Effects of exchange rate changes on cash and cash equivalents	560	(395)	(171)
Cash and cash equivalents at the end of period	13,649	12,883	12,113
Non-cash transactions:			
Additions to property, plant and equipment - capitalized loans and borrowing costs	14	16	12
Cash flows from operating activities:			
Income before income taxes	9,610	7,287	1,064
Adjusted for:			
Provisions related to Brumadinho	-	-	21
Equity results and other results in associates and joint ventures	454	16	535
Impairment and disposal of non-current assets	432	161	403
Depreciation, depletion and amortization	849	731	807
Financial results, net	(350)	77	485
Change in assets and liabilities			
Accounts receivable	(1,105)	1,401	(922)
Inventories	(188)	(174)	(125)
Suppliers and contractors	291	(256)	108
Provision - Payroll, related charges and other remunerations	82	(289)	115
Payments related to Brumadinho	(303)	(149)	(155)
Other assets and liabilities, net	(495)	(132)	(225)
Cash flow from operations	9,277	8,673	2,111

REVENUES, VOLUMES SOLD, PRICES AND MARGINS

Net operating revenue by destination

US\$ million	2Q21	%	1Q21	%	2Q20	%
North America	578	3.5	481	3.8	221	2.9
USA	449	2.7	383	3.0	177	2.4
Canada	129	0.8	98	0.8	44	0.6
South America	1,780	10.7	1,353	10.7	543	7.2
Brazil	1,531	9.2	1,134	9.0	528	7.0
Others	249	1.5	219	1.7	15	0.2
Asia	11,426	68.5	8,572	67.8	5,413	72.0
China	8,976	53.8	6,966	55.1	4,320	57.5
Japan	1,082	6.5	623	4.9	396	5.3
South Korea	439	2.6	356	2.8	265	3.5
Others	929	5.6	627	5.0	432	5.7
Europe	2,191	13.1	1,950	15.4	1,035	13.8
Germany	617	3.7	635	5.0	351	4.7
Italy	231	1.4	144	1.1	49	0.7
Others	1,343	8.1	1,171	9.3	635	8.4
Middle East	456	2.7	71	0.6	178	2.4
Rest of the World	244	1.5	218	1.7	128	1.7
Total	16,675	100.0	12,645	100.0	7,518	100.0

Volume sold - Minerals and metals

'000 metric tons	2Q21	1Q21	2Q20
Iron ore fines	66,740	58,872	54,569
ROM	479	426	46
Pellets	7,647	6,271	6,950
Manganese ore	169	258	270
Ferroalloys	15	14	10
Thermal coal	831	541	869
Metallurgical coal	713	474	516
Nickel	47	48	38
Copper	74	71	83
Gold as by-product ('000 oz)	95	76	110
Silver as by-product ('000 oz)	522	315	413
PGMs ('000 oz)	69	60	91
Cobalt (metric ton)	568	428	540

Average realized prices

US\$/ton	2Q21	1Q21	2Q20
Iron ore fines CFR reference (dmt)	202.0	171.1	100.4
Iron ore fines Vale CFR/FOB realized price	182.8	155.5	88.9
Pellets CFR/FOB (wmt)	254.7	192.6	129.4
Manganese ore	171.8	109.7	214.3
Ferroalloys	1,508.1	1,158.6	1,005.9
Thermal coal	72.4	62.7	48.1
Metallurgical coal	139.7	122.1	100.9
Nickel	17,183	17,630	14,436
Copper ¹	9,590	9,409	5,884
Gold (US\$/oz)	1,708	1,781	1,743
Silver (US\$/oz)	25.05	24.58	18.09
Cobalt (US\$/t)	43,039	44,834	36,009

¹Considers Salobo, Sossego and North Atlantic operations.

Operating margin by segment (EBIT adjusted margin)

%	2Q21	1Q21	2Q20
Ferrous Minerals	71.5	70.6	51.3
Base Metals	26.4	38.2	27.2
Coal	(112.4)	(172.8)	(286.2)
Total	61.1	60.3	34.1

RECONCILIATION OF IFRS AND “NON-GAAP” INFORMATION

(a) Adjusted EBIT

US\$ million	2Q21	1Q21	2Q20
Net operating revenues	16,675	12,645	7,518
COGS	(5,805)	(4,267)	(4,212)
Sales and administrative expenses	(133)	(105)	(124)
Research and development expenses	(141)	(100)	(90)
Pre-operating and stoppage expenses	(191)	(145)	(238)
Brumadinho event	(185)	(115)	(130)
Other operational expenses, net	(74)	(12)	(237)
Dividends received and interests from associates and JVs	43	78	77
Adjusted EBIT	10,189	7,619	2,564

(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 and disposal 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	2Q21	1Q21	2Q20
Adjusted EBITDA	11,038	8,350	3,371
Working capital:			
Accounts receivable	(1,105)	1,401	(922)
Inventories	(188)	(174)	(125)
Suppliers and contractors	291	(256)	108
Provision - Payroll, related charges and other remunerations	82	(289)	115
Payments related to Brumadinho	(303)	(149)	(155)
Provisions related to Brumadinho	-	-	21
Others	(538)	(210)	(302)
Cash provided from operations	9,277	8,673	2,111
Income taxes paid - including settlement program	(1,280)	(1,164)	(398)
Interest on loans and borrowings paid	(138)	(288)	(168)
Interest on participative shareholders' debentures paid	(193)	-	(95)
Cash received (paid) on settlement of Derivatives, net	60	(199)	(114)
Net cash provided by (used in) operating activities	7,726	7,022	1,336

Reconciliation between adjusted EBITDA and net income (loss)

US\$ million	2Q21	1Q21	2Q20
Adjusted EBITDA	11,038	8,350	3,371
Depreciation, depletion and amortization	(849)	(731)	(807)
Dividends received and interest from associates and joint ventures	(43)	(78)	(77)
Impairment and disposal of non-current assets	432	(161)	(403)
Operating income	9,714	7,380	2,084
Financial results	(350)	(77)	(485)
Equity results and other results in associates and joint ventures	454	(16)	(535)
Income taxes	2,073	(1,810)	(145)
Net income	7,537	5,477	919
Loss attributable to noncontrolling interests	(49)	(69)	(76)
Net income attributable to Vale's stockholders	7,586	5,546	995

(c) Net debt

US\$ million	2Q21	1Q21	2Q20
Gross debt	12,154	12,176	16,903
Leases	1,708	1,631	1,652
Cash and cash equivalents ¹	14,600	14,312	12,206
Net debt	(738)	(505)	6,349

¹ Including financial investments

(d) Gross debt / LTM Adjusted EBITDA

US\$ million	2Q21	1Q21	2Q20
Gross debt and leases / LTM Adjusted EBITDA (x)	0.5	0.6	1.3
Gross debt and leases / LTM operational cash flow (x)	0.5	0.6	1.7

(e) LTM Adjusted EBITDA / LTM interest payments

US\$ million	2Q21	1Q21	2Q20
Adjusted LTM EBITDA / LTM gross interest (x)	37.4	27.2	16.5
LTM adjusted EBITDA / LTM interest payments (x)	38.7	27.6	12.9
LTM operational profit / LTM interest payments (x)	31.4	20.7	5.0