Vale

80 years in Brazil

On June 1, 2022, Vale completed 80 years of operations, always with the purpose of improving life and transforming the future.

VALE'S PERFORMANCE IN 2Q22

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Conference call and webcast on Friday, July 29

In English with simultaneous translation to Portuguese at 11:00 a.m. Brasilia time (10:00 a.m. New York time, 3:00 p.m. London time).

The conference calls will be transmitted live through our website at www.vale.com/investors

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Except where otherwise indicated, the operational and financial information in this release is based on the consolidated figures in accordance with IFRS. Our quarterly financial statements are reviewed by the company's independent auditors. The main subsidiaries that are consolidated are the following: Companhia Portuária da Baía de Sepetiba, 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 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.

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 performance in review

Rio de Janeiro, July 28, 2022 – "*As we celebrate our 80 years of operations in Brazil, we take this opportunity to reflect on our journey, challenges, and evolution. We are reinventing the way we operate, while committed to becoming one of the industry's safest and most reliable companies in the world. We move ahead with the conviction that mining is essential for the development of society and that it only serves its purpose by generating prosperity for all and taking care of the planet. In that sense, we continued to make progress in our decarbonization agenda and strengthening relationships with our neighbor communities. With the substantial reshaping of our business, such as the sale of the Midwestern System, the company is much better prepared to deliver on its production recovery agenda. We stay committed to a disciplined capital allocation and to generating and returning value to our shareholders, as further evidenced by the announcement to pay US$ 3 billion in dividends", commented Eduardo Bartolomeo, Chief Executive Officer.*

Highlights of 2Q22

Our operations

Vale is uniquely positioned to thrive in the mining structural growth trends, and we continue to advance with our plans to enhance our position.

- At the steel decarbonization front, we secured natural gas supply to our pellet plant in São Luís, Maranhão, which will allow for the usage of natural gas in 100% of our pelletizing plants by 2024. This is a major step towards our goal to reduce scopes 1 and 2 emissions by 33% by 2030.

- As part of our Powershift program, we received our second 100%-electric battery-powered locomotive. The equipment will initially operate at the Ponta da Madeira Terminal's switchyard in São Luis (MA), with autonomy to operate up to 10 hours without stops for recharging.

- In April, we signed a MoU with Nippon Steel Corporation to pursue ironmaking solutions focused on the carbon neutral steelmaking process, in line with our commitment to reducing 15% of net Scope 3 emissions by 2035. We are jointly studying (i) metallics usage solutions such as direct reduced iron (DRI) and pig iron produced by Tecnored technology; and (ii) usage of Vale's green briquettes and pellets in ironmaking process. Since 2021, we engaged with clients representing almost 50% of our Scope 3 emissions.

- In July, in partnership with Shagang and Ningbo Zhoushan Port, we started implementing the Zhongzhai Pre-blending Project to develop silo-blending facilities in the Zhongzhai Ore Terminal in Zhejiang Province, China. The innovative pre-blending service is part of our drive to extend supply chain services and deliver value for our clients by improving the iron ore blend's quality, logistics efficiency and reducing raw material inventories at our clients'.

- We also advanced in our agenda for alternative fuel in shipping with the granting of an Approval in Principle (AIP) to a pioneering project for multi-fuel tanks on iron ore carriers. The system will allow vessels to be adapted to store liquefied natural gas (LNG), methanol, and ammonia. A preliminary study for Guaibamaxes estimates 40% to 80% emission reduction with methanol and ammonia, or up to 23% with LNG. This project is under development in partnership with Norwegian companies Brevik Engineering AS and Passer Marine.

- In our Base Metals operations, we had important advancements in de-risking with the conclusion of the planned maintenance of the Copper Cliff Smelter and Refinery and Long Harbour, Clydach and Matsusaka refineries. We finished the rebuild of PTVI's Furnace 4 and heating up has started in mid-June. Ontario mines' run rates improved throughout Q2, allowing for an inventory build-up to cover for planned mill-mines maintenance in Q3.

- Additionally, we concluded the pre-feasibility study for a 110ktpy nickel sulfate project, the chemical compound used to produce nickel-based lithium-ion batteries. The project, which will require 25ktpy input nickel units, to be developed in Quebec, Canada, is the first-of-its-kind to serve the North American market, leveraging current and future low carbon and high-grade predominantly Class 1 nickel production from our Canadian operations.

Our commitments to society

- In July, we celebrated 40 years of relationship with the Xikrin do Cateté indigenous people. We recently settled an historic agreement ending a 15-year dispute and initiated a new phase with the Xikrin community, guided by constant dialogue and joint construction.

We achieved important milestones in the de-characterization of our dams:

- In July, we concluded Baixo João Pereira and Dike 4 de-characterizations[1], being the first two of five structures to be eliminated this year.

- The works are progressing on the other three structures. We expect that 40% of the de-characterization program will be complete by the end of 2022. At Ipoema, the de-characterization started in July, and we expect to conclude the works by the end of 2022.

- In Itabira, we have concluded the backup dam for Coqueirinho, increasing safety during de-characterization activities for Dique Minervino and Cordão Nova Vista, which we expect to eliminate by 2029.

- We have removed approximately 40% of the tailings from the B3/B4 dam, currently at emergency level 3, and we expect to finalize its decharacterization by 2025.

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 .

Focusing on the core business

- Our reshaping agenda advanced as we concluded the sale of the Midwestern System's iron ore, manganese, and logistics assets.

- We also entered, together with our partners Posco and Dongkuk, into a binding agreement with ArcelorMittal to sell Companhia Siderúrgica do Pecém - CSP".

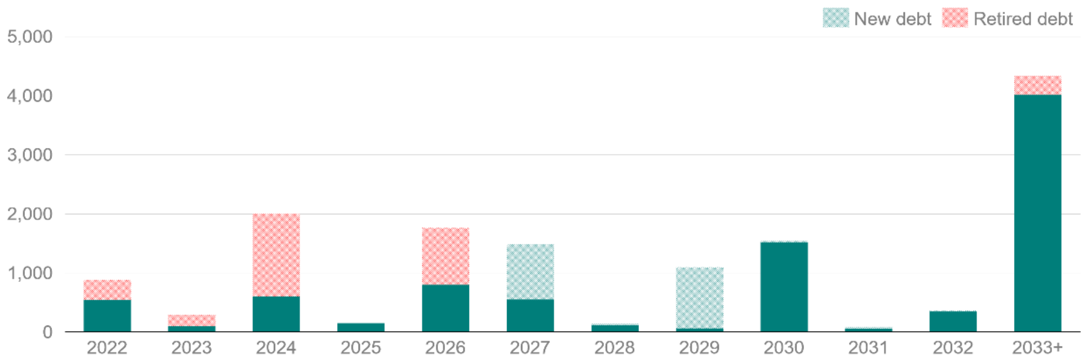
[1] Dike 4 decharacterization was completed and final works in the site will continue along the second half of this year.

- In Base Metals, PTVI, Huayou, and Ford Motor Co. signed a memorandum of understanding to create a three-party relationship in Indonesia to process nickel ore mined by PTVI at Pomalaa Block, Kolaka, Southeast Sulawesi. This builds on the framework co-operation agreement for the Pomalaa HPAL project signed in April by PTVI and Huayou, reaffirming our commitment to a sustainable operation in Indonesia and to benefit the local economy.

Discipline in capital allocation and sharing value

- As part of our liability management program, we successfully concluded the US$ 1.3 billion tender offer for our notes in June, jointly with the renegotiation of bilateral loans, reducing the next five years' liquidity needs and extending our debt's average tenor.

Liability management and financial debt profile
US$ million



- Today, our Board of Directors approved US$ 3.0 billion dividends and Interest on Capital to be paid in September. The amount distributed was calculated based on the year's first half results, in line with our Shareholder Remuneration Policy.
- We progressed with our third consecutive share buyback program of 500 million shares, which is 23% complete[2], reflecting management's confidence in creating and sharing value with our shareholders.

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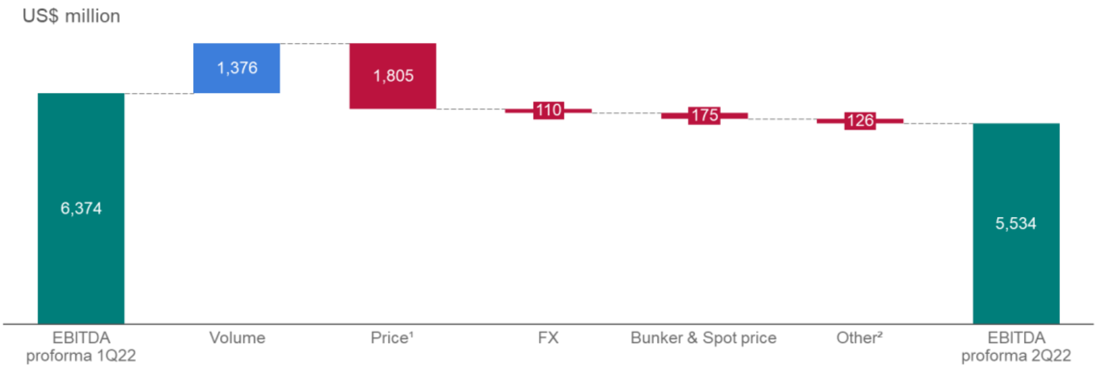
[2] As of the date of this report, we spent US$ 1.8 billion to repurchase around 114 million shares related to the April 2022 repurchase program. As reflected in our 2Q22 Financial Statement, until June 30, 2022, the Company had repurchased approximately 70 million ordinary shares in the total amount of US$ 1.133 billion.

Vale's performance 2Q22

In 2Q22, Vale reported a proforma adjusted EBITDA from continued operations of US$ 5.534 billion, US$ 840 million lower than 1Q22, reflecting the decline in iron ore and copper prices at the end of the quarter, but partially compensated by higher iron ore sales.

Proforma EBITDA - 2Q22 vs. 1Q22



[1] Includes the impact of third-party purchase, royalties, distribution center, and leasing. [2] Includes costs and expenses, the impact of trading operations, the impact of by-products, and others.

Selected financial indicators

US$ million	2Q22	1Q22	2Q21
Net operating revenues	11,157	10,812	16,514
Total costs and expenses (ex-Brumadinho and de-characterization of dams)	(6,504)	(5,124)	(6,002)
Expenses related to Brumadinho event and de-characterization of dams	(280)	(160)	(185)
Adjusted EBIT from continuing operations	4,444	5,528	10,370
Adjusted EBIT margin (%)	40%	51%	63%
Adjusted EBITDA from continuing operations	5,254	6,214	11,202
Adjusted EBITDA margin (%)	47%	57%	68%
Proforma adjusted EBITDA from continuing operations[1]	5,534	6,374	11,403
Net income from continuing operations attributable to Vale's stockholders	4,093	4,456	8,147
Net debt [2]	5,375	4,911	(738)
Capital expenditures	1,293	1,136	1,103

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

[2] Including leases (IFRS 16).

- In 2Q22, we invested US$ 1.293 billion in growth and sustaining projects, up US$ 157 million from 1Q22, mainly due to advances in construction works and acquisition of equipment at Sol do Cerrado, Salobo III and VBME projects.

- Free Cash Flow from Operations increased by US$ 1.066 billion q/q, reaching US$ 2.295 billion, a cash conversion of more than 41% of the proforma EBITDA. The better result is mainly explained by the positive impact of working capital in Q2 and the seasonally-higher income tax paid in 1Q22.

- Gross debt and leases totaled US$ 12.608 billion as of June 30, 2022, US$ 1.407 billion lower q/q, mainly due to the tender offer for Vale's notes. Expanded net debt decreased to US$ 18.558 billion, mostly attributed to the Brazilian Real depreciation effect on the commitments denominated in local currency, partially offset by the mark-to-market losses on the foreign exchange hedge positions.

Performance of business segments in 2Q22

Ferrous Minerals EBITDA of US$ 5.147 billion

- Ferrous Minerals EBITDA was US$ 655 million lower than 1Q22, due to lower iron ore fines realized prices and higher C1 and freight costs, partially compensated by higher sales volumes.
- Iron ore fines' average realized price was US$ 113.3/t, down US$ 28.1/t q/q, primarily due to: (i) the US$ 38.2/t lower provisional price at the end of 2Q22, reflecting the lower end-of-quarter forward curves, and (ii) lower premiums, driven by a larger high-silica products share in the sales mix.
- C1-cost, ex-third-party purchases, was US$ 20.9/t, US$ 2.2/t higher q/q, mainly due to the negative impact of the average Brazilian real appreciation, sale of higher-cost inventories built in Q1, and higher service and fuel costs, partially offset by fixed costs dilution.
- Freight cost for iron ore fines was US$ 21.3/t in 2Q22, US$ 3.2/t higher than in 1Q22, primarily driven by higher bunker costs.

Base Metals EBITDA was US$ 603 million in 2Q22, US$ 148 million lower than 1Q22

- Nickel EBITDA was US$ 580 million in 2Q22, a sequential improvement of US$ 55 million, which was driven by (i) higher nickel realized prices, following the 10% increase in LME prices, and (ii) a solid performance at Onça Puma. In contrast, we had lower byproducts credit following the lower copper price in 2Q22.
- Copper business EBITDA was US$ 23 million in 2Q22, US$ 203 million lower q/q, mainly due to (i) provisional price adjustments, following the 20% lower LME forward prices at the end of the quarter and (ii) higher maintenance and material costs at Salobo and Sossego.

Adjusted EBITDA

Adjusted EBITDA

US$ million	2Q22	1Q22	2Q21
Net operating revenues	11,157	10,812	16,514
COGS	(5,950)	(4,622)	(5,465)
SG&A	(127)	(121)	(132)
Research and development	(151)	(121)	(139)
Pre-operating and stoppage expenses	(111)	(154)	(191)
Expenses related to Brumadinho event & de-characterization of dams	(280)	(160)	(185)
Expenses related to COVID-19 donations	-	-	(16)
Other operational expenses	(165)	(106)	(59)
Dividends and interests on associates and JVs	71	-	43
Adjusted EBIT from continuing operations	**4,444**	**5,528**	**10,370**
Depreciation, amortization & depletion	810	686	832
Adjusted EBITDA from continuing operations	**5,254**	**6,214**	**11,202**
Proforma Adjusted EBITDA from continuing operations[1]	**5,534**	**6,374**	**11,403**
Discontinued operations - Coal	-	171	(164)
Adjusted EBITDA total	**5,254**	**6,385**	**11,038**
Proforma Adjusted EBITDA total[1]	**5,534**	**6,545**	**11,239**

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

Proforma Adjusted EBITDA from continuing operations, by business area

US$ million	2Q22	1Q22	2Q21
Ferrous Minerals	**5,147**	**5,802**	**10,633**
Iron ore fines	3,975	4,934	9,160
Pellets	1,140	837	1,438
Other Ferrous Minerals	32	31	35
Base Metals	**603**	**751**	**866**
Nickel	580	525	430
Copper	23	226	436
Others	**(216)**	**(179)**	**(96)**
Total	**5,534**	**6,374**	**11,403**

Net operating revenue by business area

US$ million	2Q22	%	1Q22	%	2Q21	%
Ferrous Minerals	**9,025**	**81%**	**8,734**	**81%**	**14,178**	**86%**
Iron ore fines	7,113	64%	7,255	67%	12,081	73%
ROM	29	0%	23	0%	14	0%
Pellets	1,780	16%	1,364	13%	1,947	12%
Manganese ore	5	0%	12	0%	29	0%
Ferroalloys	1	0%	3	0%	23	0%
Others	97	1%	77	1%	84	1%
Base Metals	**1,875**	**17%**	**1,932**	**18%**	**2,180**	**13%**
Nickel	1,032	9%	866	8%	815	5%
Copper	330	3%	534	5%	711	4%
PGMs	65	1%	110	1%	169	1%
Gold as by-product	117	1%	115	1%	163	1%
Silver as by-product	8	0%	8	0%	13	0%
Cobalt	37	0%	32	0%	24	0%
Others[1]	286	3%	267	2%	285	2%
Others	**257**	**2%**	**146**	**1%**	**156**	**1%**
Total of continuing operations	**11,157**	**100%**	**10,812**	**100%**	**16,514**	**100%**

[1] Includes marketing activities

COGS by business segment

US$ million	2Q22	%	1Q22	%	2Q21	%
Ferrous Minerals	4,248	71.4	3,108	67.2	3,800	69.5
Base Metals	1,424	23.9	1,334	28.9	1,459	26.7
Others	278	4.7	180	3.9	206	3.8
Total COGS of continuing operations[1]	**5,950**	**100.0**	**4,622**	**100.0**	**5,465**	**100**
Depreciation	777		645		783	
COGS of continuing operations, ex-depreciation	**5,173**		**3,977**		**4,682**	

[1] COGS currency exposure in 2Q22 was as follows: 52.2% USD, 45.1% BRL, 2.6% CAD and 0.1% Other currencies.

Operating expenses

US$ million	2Q22	1Q22	2Q21
SG&A	127	121	132
Administrative	103	103	108
Personnel	44	54	52
Services	30	23	22
Depreciation	12	11	10
Others	17	15	24
Selling	24	18	24
R&D	151	121	139
Pre-operating and stoppage expenses	111	154	191
Expenses related to Brumadinho event and de-characterization of dams	280	160	185
Expenses related to COVID-19 donations	-	-	16
Other operating expenses	165	106	59
Total operating expenses	**834**	**662**	**720**
Depreciation	33	42	49
Operating expenses, ex-depreciation	**801**	**621**	**673**

Impact of Brumadinho and De-characterization in 2Q22

US$ million	Provisions balance 31mar22	EBITDA impact	Payments	FX and other adjustments[2]	Provisions balance 30jun22
De-characterization	4,075	-	(83)	(448)	3,544
Agreements & donations[1]	4,192	126	(319)	(319)	3,680
Total Provisions	**8,267**	**126**	**(402)**	**(767)**	**7,224**
Incurred Expenses	-	154	(154)	-	-
Total	**8,267**	**280**	**(556)**	**(767)**	**7,224**

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

Impact of Brumadinho and De-characterization from 2019 until 2Q22

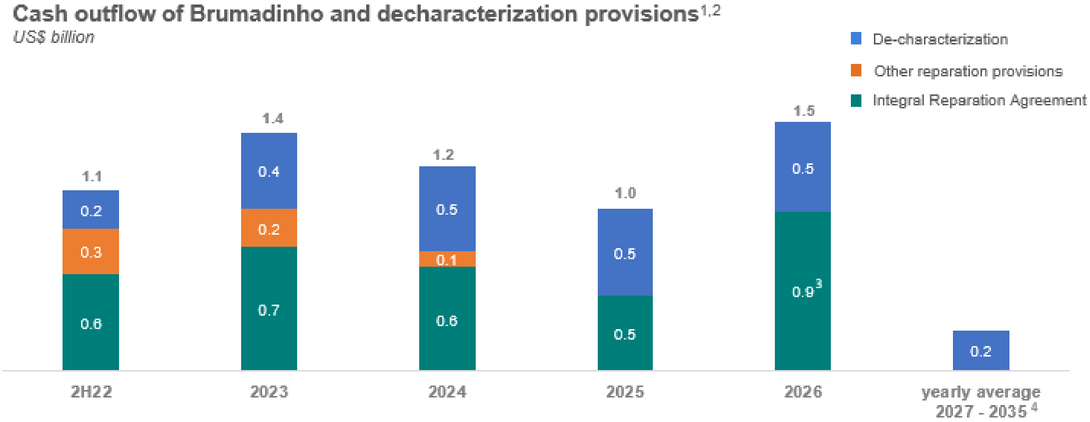
US$ million	EBITDA impact	Payments	PV & FX adjust [2]	Provisions balance 30/jun/22
De-characterization	5,003	(941)	(518)	3,544
Agreements & donations[1]	8,383	(4,291)	(412)	3,680
Total Provisions	**13,386**	**(5,232)**	**(930)**	**7,224**
Incurred expenses	2,167	(2,167)	-	-
Others	122	-	-	-
Total	**15,675**	**(7,399)**	**(930)**	**7,224**

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

Total provisions for Brumadinho agreements and dams de-characterization decreased by US$ 1.043 billion to US$ 7.224 billion, mostly due to the Brazilian Real 11% devaluation in the quarter.

Cash outflow of Brumadinho and decharacterization provisions[1,2]

US$ billion



[1] Estimate cash outflow for 2022 - 2035 period, given BRL-USD exchange rates of 5.238
[2] Amounts stated without discount to present value and net of judicial deposits.
[3] Comprises US$ 0.5 billion of inflation adjustments related to performance obligations which projects timeline are not defined by the parties in the Agreement.
[4] Estimate annual average cash flow for Decharacterization provisions in the 2027-2035 period is US$ 245 million per year.

Net income

Reconciliation of proforma EBITDA to net income

US$ million	2Q22	1Q22	2Q21
EBITDA Proforma	**5,534**	**6,545**	**11,239**
Brumadinho event and de-characterization of dams & COVID-19 donations	(280)	(160)	(201)
EBITDA Coal (Discontinued operation)	-	(171)	(164)
Adjusted EBITDA from continuing operations	**5,254**	**6,214**	**11,202**
Impairment & disposal of non-current assets	(82)	1,072	(41)
Dividends received	(71)	-	(43)
Equity results	(108)	189	(455)
Financial results	821	(242)	389
Income taxes	(911)	(2,091)	(2,073)
Depreciation, depletion & amortization	(810)	(686)	(832)
Net income from continuing operations attributable to Vale's stockholders	**4,093**	**4,456**	**8,147**

Main factors that affected net income for 2Q22 vs. 1Q22

	US$ million	
1Q22 Net income from continuing operations attributable to Vale's stockholders	**4,456**	
Δ EBITDA proforma	(1,011)	Mainly due to lower iron ore fines and copper realized prices, partially offset by higher ferrous sales volumes
Δ Brumadinho event and de-characterization of dams & COVID-19 donations	(120)	
Δ EBITDA Coal (Discontinued operation)	+171	
Δ Impairment & disposal of non-current assets	(1,154)	Positive impact of agreement to divest Midwestern System recorded in 1Q22
Δ Dividends received	(71)	
Δ Equity results	(297)	Additional US$ 89 million Renova Foundation provision due to review of program costs estimates
Δ Financial results	+1,063	Positive mark-to-market impact of shareholder debentures
Δ Income taxes	+1,180	1Q22 included income tax adjustments
Δ Depreciation, depletion & amortization	(124)	
2Q22 Net income from continuing operations attributable to Vale's stockholders	**4,093**	

Δ: difference between 2Q22 and 1Q22 figures

Financial results

US$ million	2Q22	1Q22	2Q21
Financial expenses	**(372)**	**(295)**	**(267)**
Gross interest	(162)	(161)	(160)
Capitalization of interest	17	14	14
Others	(188)	(116)	(111)
Financial expenses (REFIS)	(39)	(32)	(10)
Financial income	**137**	**150**	**76**
Shareholder Debentures	**537**	**(249)**	**(278)**
Financial Guarantee	**356**	**123**	**401**
Derivatives[1]	**(270)**	**861**	**856**
Currency and interest rate swaps	(293)	863	788
Others (commodities, etc)	23	(2)	68
Foreign Exchange	**464**	**(817)**	**(374)**
Monetary variation	**(31)**	**(15)**	**(25)**
Financial result, net	**821**	**(242)**	**389**

[1] The cash effect of the derivatives was a loss of US$ 42 million in 2Q22.

CAPEX

Growth and sustaining projects execution

US$ million	2Q22	%	1Q22	%	2Q21	%
Growth projects	**449**	**34.7**	**337**	**29.7**	**210**	**19.0**
Ferrous Minerals	199	15.4	182	16.0	113	10.2
Base Metals	90	7.0	67	5.9	69	6.3
Energy and others	160	12.4	88	7.7	28	2.5
Sustaining projects	**844**	**65.3**	**799**	**70.3**	**893**	**81.0**
Ferrous Minerals	477	36.9	499	43.9	531	48.1
Base Metals	343	26.5	270	23.8	357	32.4
Energy and others	24	1.9	30	2.6	5	0.5
Total	**1,293**	**100.0**	**1,136**	**100.0**	**1,103**	**100.0**

Growth projects

Investments in growth projects execution totaled US$ 449 million in 2Q22, 33% higher q/q, driven by (i) higher solar photovoltaic panels purchases in Sol do Cerrado project; and (ii) the acceleration of civil works and the purchase of equipment for the ball mill in Salobo III, both in line with the projects' disbursement plan.

Growth projects progress indicator[3]

Projects	Capex 2Q22	Financial progress[1]	Physical progress	Comments
Ferrous Minerals				
Northern System 240 Mtpy *Capacity: 10 Mtpy* *Start-up: 2H22* *Capex: US$ 772 MM*	46	59%	97%[2]	Testing of the 5th stockpile yard stacking circuit began at the plant. Mine-plant project front is expected to commence in the next months, adding flexibility to S11D. In the logistics front, the environmental license required for implementation of remaining scope of EFC is still pending and the works at Ponta da Madeira Maritime Terminal are in line with planning.
Capanema's Maximization[3] *Capacity: 18 Mtpy* *Start-up: 1H25* *Capex: US$ 913 MM*	20	8%	18%	In July we approved a new project named Capanema Maximization, which was designed to achieve a joint production of up to 26 Mtpy at Fábrica Nova and Capanema mines. In addition to previous project's scope, which included resuming facilities and acquiring new equipment to Capanema mine, constructing a long-distance belt conveyor and adjustments in the Timbopeba stockyards, the new project entails the resumption of Capanema's processing plant and the development of the waste pile Noroeste, granting greater operational flexibility to the Mariana Complex.
Serra Sul 120 Mtpy[4] *Capacity: 20 Mtpy* *Start-up: 2H25* *Capex: US$ 1,502 MM*	68	20%	18%	The start-up was postponed to 2H25 (previously 1H25) due to licensing delays. The installation license required for works progress was granted in July. In Q2, the project progressed with the replacement of the tertiary crushers at Plants A, B and C.
Briquettes Tubarão *Capacity: 6 Mtpy* *Start-up: 1H23 (Plant 1) and 2H23 (Plant 2)* *Capex: US$ 182 MM*	21	26%	44%	Project consists of converting the existing pelletizing Plants 1 and 2 to produce briquettes at the Tubarão site.
Base Metals				
Salobo III *Capacity: 30-40 ktpy* *Start-up: 2H22* *Capex: US$ 1,056 MM*	79	76%	95%	Project progressed with the start of commissioning activities at primary crushing and stockpile areas, successful completion of the tests in the process water tank, energization of HPGR's substation and continuation of the electromechanical activities in remaining areas. The remediation works for the January 2022 landslide were completed.

[1] CAPEX disbursement until end of 2Q22 vs. CAPEX expected.
[2] Considering mine-plant project front physical progress.
[3] The previous project named "Capanema" was expected to start-up in 2H23 with an estimated Capex of US$ 495 million.
[4] The project consists of increasing the S11D mine-plant capacity by 20 Mtpy.

[3] Pre-operating expenses included in the total estimated capex information, in line with Vale's Board of Directors approvals.

Sustaining projects

Investments in sustaining our operations totaled US$ 844 million in 2Q22, up 6% q/q, driven by (i) advances in the construction works in Voisey's Bay Mine Extension project after Covid-related labor shortage in Q1; and (ii) greater investments in railways in Ferrous Minerals business; which were partially offset by lower disbursements in tailings' filtration plants.

Sustaining projects progress indicator[4]

Projects	Capex 2Q22	Financial progress[1]	Physical progress	Comments
Ferrous Minerals				
Gelado *Capacity: 10 Mtpy* *Start-up: 2H22* *Capex: US$ 428 MM*	20	69%	94%	Construction of the recovery system in the final stage of construction, with progress in commissioning (currently at approximately 40%). Start-up is expected in the next months.
Base Metals				
Voisey's Bay Mine Extension *Capacity: 45 ktpy* *Start-up: 1H21[2]* *Capex: US$ 2,690 MM*	113	62%	74%	Advances in both surface and underground construction activities. On the surface, commissioning activities are ongoing within the Eastern Deeps Powerhouse and the port fuel tanks. Civil works continue for the balance of facilities, with civil completion planned by the end of 2022. In the underground, the priority in Reid Brook is completing infrastructure, focusing on the Material Handling System, for which the surface conveyor gallery modules have been placed. For Eastern Deeps, lateral development advancement remains the priority.

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

Sustaining capex by type - 2Q22

US$ million	Ferrous Minerals	Base Metals	Energy and others	Total
Enhancement of operations	231	173	5	409
Replacement projects	27	131	-	158
Filtration and dry stacking projects	68	-	-	68
Dam management	10	2	-	12
Other investments in dams and waste dumps	43	4	-	47
Health and Safety	46	24	-	70
Social investments and environmental protection	25	4	-	29
Administrative & Others	27	5	19	51
Total	**477**	**343**	**24**	**844**

[4] Pre-operating expenses included in the total estimated capex column, in line with Vale's Board of Directors approvals

Projects under evaluation and growth options

Projects	Project scope / capacity	Comments
Copper		
Alemão	• 60ktpy Cu + 115 kozpy Au as byproduct • Underground mine	Stage: FEL3 / Invest decision: 2023
South Hub life of mine extension or Upsides	*Cristalino* • 80ktpy • Replacement project. Maintain Sossego plant operating at full capacity	Stage: FEL3
	Bacaba • 60 - 70 ktpy Cu • Open Pit mine • Replacement or optionality to increase production	Stage: FEL3
	118, Visconde and Barão • Satellite deposits being developed to assess potential options to increase production	Stage: FEL 1
North Hub	• 70-100ktpy Cu potential in North Hub • Growth Project	Stage: FEL 1
Salobo IV	• +30ktpy potential • Growth project	Stage: FEL1
Victor	• 20ktpy Cu + 4ktpy Ni	JV partnership under discussion Stage: FEL2
Hu'u	• +300-350 ktpy[1] Cu potential + 200koz Au • Underground block cave • Growth Project	Stage: FEL2
Nickel		
Onça Puma 2nd furnace	• +50 yrs LoM • +12 - 15ktpy Ni	Stage: FEL3 / Invest decision: 2022
Bahodopi	• 20-year mine saprolite ore • RKEF FeNi smelter plant • Production: 73ktpy Ni	Mine owned by PTVI, FeNi plant owned through JV Stage: FEL3 / Invest decision: 2022
Pomalaa	• Up to 25-year mine limonite and saprolite ore • HPAL plant • Production: Up to 120ktpy Ni + 15ktpy Co as byproduct	Mine owned by PTVI, HPAL plant owned through JV Stage: FEL3 / Invest decision: 2023
CCM PH 3&4	• Replacement • Underground mine	Stage: FEL2
Thompson Mine Extension PH2	• Life extension • Underground mine	Stage: FEL2
Iron ore		
Serra Norte N1/N2	• Replacement project of 50 Mtpy of ROM in Serra Norte	Stage: FEL3 Invest decision: 2024 Start-up: 2027
Dry concentration in Oman	• Cleaner to produce direct reduction feed	Stage: FEL3 Invest decision: 2022/23 Start-up: 2024/25
Serra Leste expansion	• Growth project • Project's capacity under evaluation	Stage: FEL2 Invest decision: 2023 Start-up: 2026
S11C	• Expand Serra Sul to ore body C due to S11D depletion. • Replacement project.	Stage: FEL2
Briquettes' plants	• VGR's plant designed to 0.75 Mtpy • 8 other plants under engineering stage	Stage: FEL3 (two plants) Invest decision: 2022/2028 Start-up: 2023/2032

[1] Considering full equity in Sumbawa Timur Mining and based on initial studies arising from the ongoing prefeasibility study.

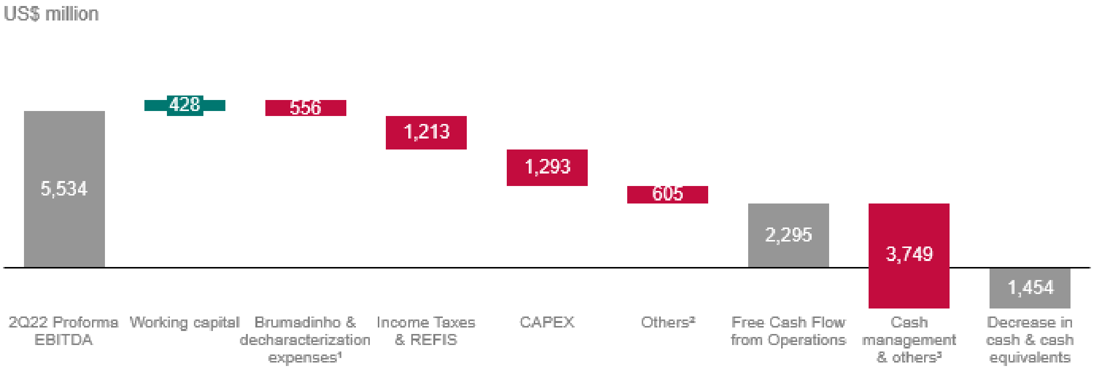
Free cash flow

Free Cash Flow from Operations increased by US$ 1.066 billion q/q, reaching US$ 2.295 billion, despite the US$ 840 million decrease in the Proforma EBITDA, mainly due to the positive impact on working capital, and the seasonally higher income tax paid in 1Q22.

The improved working capital is explained by the US$ 902 million decline in accounts receivables, following the collection of higher-priced sales recognized in 1Q22, but partially offset by (i) the higher volume of accrual sales in 2Q22 (10.0Mt versus 4.4 Mt in 1Q22), and (ii) the payment of EFC[5] railway concession extension (US$ 168 million).

Cash & cash equivalents decreased by US$ 1.454 billion mainly due to the US$ 2.596 billion share buyback disbursement in the quarter and the US$ 1.291 billion cash tender offer for debt notes.

Free Cash Flow 2Q22



[1] Includes US$ 402 million of disbursement of Brumadinho provisioned expenses and US$ 154 million of Brumadinho incurred expenses.
[2] Includes shareholders debentures, interest on loans, derivatives, leasing, dividends paid to noncontrolling interest and others.
[3] Includes US$ 2.596 billion of share buyback, US$ 1.233 billion of debt repurchased, US$ 80 million from the sale of the coal assets.

[5] Estrada de Ferro Carajás

Debt

Gross debt and leases totaled US$ 12.608 billion as of June 30, 2022, US$ 1.407 billion lower q/q, mainly due to the US$ 1.291 billion tender offer for debt notes, as part of the company's liability management strategy.

Expanded net debt decreased to US$ 18.558 billion, US$ 814 million lower q/q, from the lower gross debt and the US$ 1.7 billion effect of the Brazilian real 11% depreciation, partially offset by lower cash position and mark-to-market losses in foreign exchange hedge positions.

Debt indicators

US$ million	2Q22	1Q22	2Q21
Gross debt [1]	**11,031**	**12,349**	**12,154**
Lease (IFRS 16)	1,577	1,666	1,708
Gross debt and leases	**12,608**	**14,015**	**13,862**
Cash, cash equivalents and short-term investments	7,233	9,104	14,600
Net debt	**5,375**	**4,911**	**(738)**
Currency swaps[2]	241	(89)	357
Refis	2,332	2,634	2,692
Brumadinho provisions	3,680	4,192	4,491
De-characterization provisions	3,544	4,075	2,155
Samarco & Renova Foundation provisions	3,386	3,649	2,491
Expanded net debt	**18,558**	**19,372**	**11,448**
Average debt maturity (years)	9.1	8.5	8.9
Cost of debt after hedge (% pa)	5.0	4.9	4.6
Total debt / adjusted LTM EBITDA (x)	0.5	0.5	0.5
Net debt / adjusted LTM EBITDA (x)	0.2	0.2	(0.0)
Adjusted LTM EBITDA / LTM gross interest (x)	38.1	47.7	39.1

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

[2] Includes interest rate swaps.

Performance of the business segments

Segment information 2Q22, as per footnote of financial statements

			Expenses				
US$ million	Net operating revenues	Cost[1]	SG&A and others[1]	R&D[1]	Pre operating & stoppage[1]	Dividends received from associates and JVs	Adjusted EBITDA
Ferrous Minerals	**9,025**	**(3,771)**	**(46)**	**(46)**	**(86)**	**71**	**5,147**
Iron ore fines	7,113	(2,971)	(48)	(45)	(74)	-	3,975
Pellets	1,780	(707)	2	-	(6)	71	1,140
Others ferrous	132	(93)	-	(1)	(6)	-	32
Base Metals	**1,875**	**(1,197)**	**(15)**	**(57)**	**(3)**	**-**	**603**
Nickel[2]	1,547	(929)	(12)	(26)	-	-	580
Copper[3]	328	(268)	(3)	(31)	(3)	-	23
Brumadinho event and de-characterization of dams	**-**	**-**	**(280)**	**-**	**-**	**-**	**(280)**
Others	**257**	**(205)**	**(219)**	**(48)**	**(1)**	**-**	**(216)**
Total	**11,157**	**(5,173)**	**(560)**	**(151)**	**(90)**	**71**	**5,254**

[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

The decline in EBITDA is mainly attributed to (i) lower iron ore fines realized prices, driven by negative pricing mechanism effect and smaller iron ore fines premiums, and (ii) higher C1 and freight unit costs, which were partially offset by 23% higher sales volumes of iron ore fines and pellets.

Ferrous Minerals EBITDA Variation 2Q22 vs 1Q22

		Drivers				
US$ million	1Q22	Volume	Prices	Others	Total variation	2Q22
Iron ore fines	4,934	1,132	(1,758)	(333)	(959)	3,975
Pellets	837	213	65	25	303	1,140
Other	31	15	(21)	7	1	32
Ferrous Minerals	**5,802**	**1,360**	**(1,714)**	**(301)**	**(655)**	**5,147**

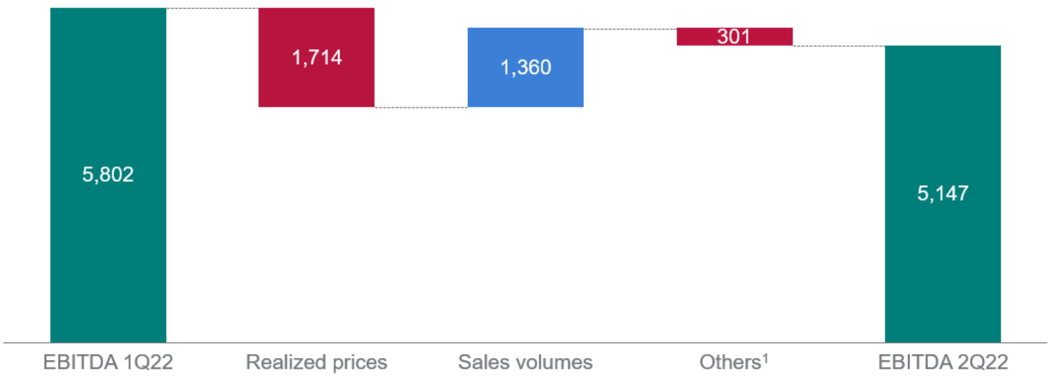
Ferrous Minerals' volumes, prices, premiums and revenues

	2Q22	1Q22	2Q21
Volume sold ('000 metric tons)			
Iron ore fines	62,769	51,311	65,370
ROM	1,550	1,035	479
Pellets	8,843	7,011	7,647
Share of premium products[1] (%)	77%	84%	83%
Average prices (US$/t)			
Iron ore - 62% Fe reference price	137.9	141.6	200.0
Iron ore - Metal Bulletin 62% low alumina index	141.6	146.6	202.1
Iron ore - Metal Bulletin 65% index	160.8	170.2	232.9
Provisional price at the end of the quarter	119.9	158.1	206.9
Iron ore fines Vale CFR reference (dmt)	128.9	156.2	204.5
Iron ore fines Vale CFR/FOB realized price	113.3	141.4	184.8
Pellets CFR/FOB (wmt)	201.3	194.6	254.7
Iron ore fines and pellets quality premium (US$/t)			
Iron ore fines quality premium	1.1	4.4	3.1
Pellets weighted average contribution	6.2	4.7	5.4
Total	7.3	9.1	8.5
Net operating revenue by product (US$ million)			
Iron ore fines	7,113	7,255	12,081
ROM	29	23	14
Pellets	1,780	1,364	1,947
Others	103	92	136
Total	**9,025**	**8,734**	**14,178**

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

Ferrous minerals EBITDA variation – 2Q22 vs. 1Q22

US$ million



[1] Including changes in costs and expenses (-US$ 113 million), dividend received (US$ 71 million), freight costs (US$ 172 million), and foreign exchange impact (-US$ 87 million),

The share of premium products in total sales decreased to 77% in 2Q22. Vale sold a higher percentage of high-silica ores to anticipate sales and to benefit from 2Q22 higher market prices for such products. Vale's supply-chain flexibility allows for sales strategy adjustments according to market conditions.

Iron ore premium reached US$ 7.3/t in 2Q22 (vs. US$ 9.1/t in 1Q22). The sequential decline in premium was mostly due to a larger high-silica products share in the sales mix, which was partially compensated by better pellets mix and premium.

Iron ore fines, excluding Pellets and ROM

Revenues and price realization

Iron ore fines' net revenues declined slightly (-2% q/q), driven by lower realized prices (US$ 1.8 billion), which was partially offset by 22% higher sales volumes in the quarter (US$ 1.6 billion).

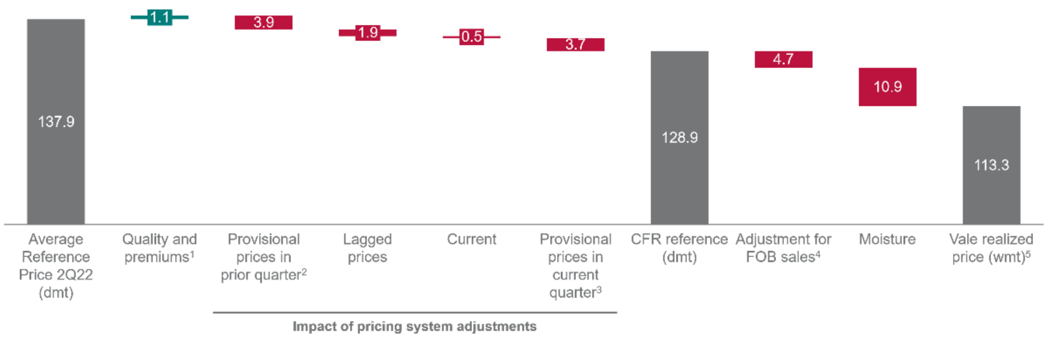
Vale's realized price reached US$ 113.3/t, US$ 28.1/t lower than in 1Q22, mainly due to:

(i) the negative pricing adjustment of sales from previous quarter (US$ 15.5/t), with 12 Mt of 1Q22 sales provisioned at US$ 158.1/t;

(ii) the negative effect of provisional prices in the current quarter (US$ 7.4/t), as 21% of the sales volumes were provisionally set at US$ 119.9/t at the end of 2Q22 vs. the average benchmark price of US$ 137.9/t in the quarter; and

(iii) lower premiums and quality adjustments (US$ 3.3/t) driven by a higher percentage of high-silica ores to benefit from 2Q22 higher market prices for such products.

Price realization iron ore fines – US$/t, 2Q22



[1] Includes quality (US$ 0.0/t) and premiums/discounts and commercial conditions (US$ 1.1/t)
[2] Adjustment as a result of provisional prices booked in 1Q22 at US$ 158.1/t.
[3] Difference between the weighted average of the prices provisionally set at the end of 2Q22 at US$ 119.9/t based on forward curves and US$ 137.9/t from the 2Q22 62% Fe reference price.
[4] Includes freight pricing mechanisms of CFR sales freight recognition.
[5] Vale's price is net of taxes.

Iron Ore fines pricing system breakdown (%)

	2Q22	1Q22	2Q21
Lagged	16	18	14
Current	63	59	58
Provisional	21	23	28
Total	**100**	**100**	**100**

Costs

Iron ore fines cash cost and freight

	2Q22	1Q22	2Q21
Costs (US$ million)			
Vale's iron ore fines C1 cash cost (A)	1,520	1,088	1,431
Third-party purchase costs[1] (B)	302	181	378
Vale's C1 cash cost ex-third-party volumes (C = A – B)	1,218	907	1,053
Sales Volumes (Mt)			
Volume sold (ex-ROM) (D)	62.8	51.3	65.4
Volume sold from third-party purchases (E)	4.5	2.7	4.8
Volume sold from own operations (F = D – E)	58.2	48.6	60.6
Iron ore fines cash cost (ex-ROM, ex-royalties), FOB (US$ /t)			
Vale's C1 cash cost ex-third-party purchase cost (C/F)	20.9	18.7	17.4
Average third-party purchase C1 cash cost (B/E)	66.6	67.0	78.6
Vale's iron ore cash cost (A/D)	24.2	21.2	21.9
Freight			
Maritime freight costs (G)	1,053	733	905
% of CFR sales (H)	79%	79%	79%
Volume CFR (Mt) (I = D x H)	49.4	40.5	51.7
Vale's iron ore unit freight cost (US$/t) (G/I)	21.3	18.1	17.5

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

Iron ore COGS - 1Q22 x 2Q22

US$ million	1Q22	Drivers: Volume	Drivers: Exchange rate	Drivers: Others	Total variation	2Q22
C1 cash costs	1,088	257	51	124	432	1,520
Freight	733	161	-	159	320	1,053
Distribution costs	87	20	-	30	50	137
Royalties & others	211	46	1	3	50	261
Total costs before depreciation and amortization	**2,119**	**484**	**52**	**316**	**852**	**2,971**
Depreciation	266	61	8	(1)	68	334
Total	**2,385**	**545**	**60**	**315**	**920**	**3,305**

Vale's C1 cash cost, ex-third-party purchases, increased by US$ 2.2/t q/q, mainly driven by (i) negative effect of exchange rate on costs; (ii) consumption of inventories from Q1 with higher costs; (iii) higher logistics costs from Southern System, driven by the greater share in the sales mix; and (iv) higher fuel costs, as a result of the increase in diesel price; which were partially compensated by the higher fixed costs dilution due to seasonally higher volumes vs. Q1.

Vale's C1 cash cost totaled US$ 24.2/t, an increase of US$ 3.0/t vs. 1Q22, which is largely explained by the normalization of third-party purchases, which were significantly impacted by heavy rains in 1Q22.

C1 cash cost variation (excluding 3rd party purchases) – US$/t (2Q22 x 1Q22)

Vale's maritime freight cost was US$ 21.3/t in 2Q22, US$ 3.2/t higher q/q, primarily driven by higher bunker costs, reflecting the surge in Brent oil prices globally.

CFR sales totaled 49.4 Mt in 2Q22, representing 79% of total sales volumes in 2Q22 and in line with Q1.

EXPENSES

Iron ore fines expenses, net of depreciation, amounted to US$ 167 million in 2Q22, 17% lower q/q, mainly driven by lower Brumadinho stoppage expenses at Brucutu site with a higher quarterly production after the heavy rains in Q1.

Expenses - Iron Ore fines

US$ millions	2Q22	1Q22	2Q21
SG&A	**16**	**13**	**16**
R&D	**45**	**34**	**43**
Pre-operating and stoppage expenses	**74**	**113**	**74**
Other expenses	**32**	**42**	**44**
Total expenses	**167**	**202**	**177**

Iron ore pellets

Pellets – EBITDA

US$ million	2Q22	1Q22	2Q21	Comments
Net revenues / Realized prices	1,780	1,364	1,947	Driven by 26% higher volumes q/q (US$ 351 million) and stronger realized prices (US$ 65 million), despite the lower 65% Fe index. Realized prices averaged US$ 201.3/t in 2Q22 (+US$ 6.6/t q/q), driven by a positive effect from pricing mechanisms.
Dividends from leased pelletizing plants	71	0	22	Seasonal dividend receiveds from Tubarão pellet plants'JVs.
Cash costs (Iron ore, leasing, freight, overhead, energy and other)	(707)	(526)	(520)	Increase mainly driven by higher volumes (US$ 138 million) and the negative exchange rate effect (US$ 20 million).
Pre-operational & stoppage expenses	(6)	(5)	(13)	
Expenses (Selling, R&D and other)	2	4	2	
EBITDA	**1,140**	**837**	**1,438**	
EBITDA/t	**129**	**119**	**188**	

Iron ore fines and pellets cash break-even landed in China[6]

US$/t	2Q22	1Q22	2Q21
Vale's C1 cash cost ex-third-party purchase cost	20.9	18.7	17.4
Third party purchases cost adjustments	3.3	2.5	4.5
Vale's iron ore cash cost (ex-ROM, ex-royalties), FOB (US$ /t)	24.2	21.2	21.9
Iron ore fines freight cost (ex-bunker oil hedge)	21.3	18.1	17.5
Iron ore fines distribution cost	2.2	1.7	1.2
Iron ore fines expenses[1] & royalties	6.9	8.0	7.8
Iron ore fines moisture adjustment	4.9	4.4	4.2
Iron ore fines quality adjustment	(1.1)	(4.4)	(3.1)
Iron ore fines EBITDA break-even (US$/dmt)	**58.4**	**49.0**	**49.5**
Iron ore fines pellet adjustment	(6.2)	(4.7)	(5.4)
Iron ore fines and pellets EBITDA break-even (US$/dmt)	**52.2**	**44.3**	**44.1**
Iron ore fines sustaining investments	6.8	8.9	7.6
Iron ore fines and pellets cash break-even landed in China (US$/dmt)	**59.0**	**53.2**	**51.7**

[1] Net of depreciation and includes dividends received. Including stoppage expenses.

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

Volume sold by destination – Iron ore and pellets

'000 metric tons	2Q22	1Q22	2Q21
Americas	**9,422**	**8,624**	**8,569**
Brazil	8,551	7,761	7,060
Others	871	863	1,509
Asia	**55,498**	**43,366**	**56,381**
China	43,668	33,560	45,142
Japan	6,666	5,436	6,054
Others	5,164	4,370	5,185
Europe	**5,265**	**5,019**	**6,215**
Germany	753	980	825
France	972	1,085	1,539
Others	3,540	2,954	3,851
Middle East	**1,510**	**1,079**	**1,566**
Rest of the World	**1,466**	**1,270**	**765**
Total	**73,161**	**59,358**	**73,496**

Selected financial indicators - Ferrous Minerals

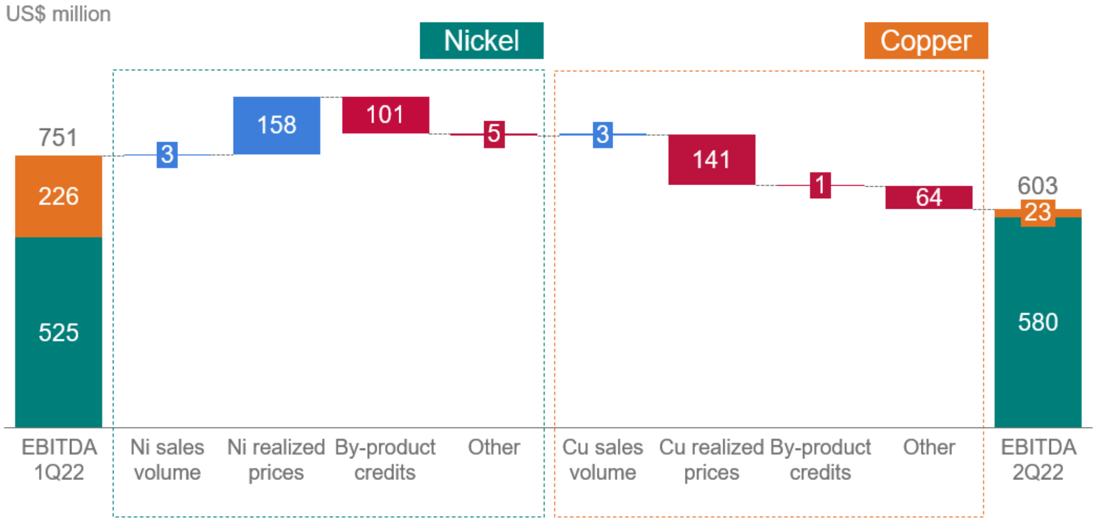
US$ million	2Q22	1Q22	2Q21
Net Revenues	9,025	8,734	14,178
Costs[1]	(3,771)	(2,723)	(3,374)
SG&A and Other expenses[1]	(46)	(52)	(58)
Pre-operating and stoppage expenses[1]	(86)	(121)	(91)
R&D expenses	(46)	(36)	(44)
Dividends and interests on associates and JVs	71	-	22
Adjusted EBITDA	**5,147**	**5,802**	**10,633**
Depreciation and amortization	(497)	(416)	(446)
Adjusted EBIT	**4,650**	**5,386**	**10,187**
Adjusted EBIT margin (%)	**51.5**	**61.7**	**71.9**

[1] Net of depreciation and amortization

Base Metals

Base Metals - EBITDA 2Q22 vs. 1Q22

US$ million



Base Metals EBITDA variation - US$ million (2Q22 x 1Q22)

		Drivers					
US$ million	1Q22	Volume	Prices	By-products	Others	Total variation	2Q22
Nickel	525	3	158	(101)	(5)	54	580
Copper	226	3	(141)	(1)	(64)	(203)	23
Base Metals	**751**	**6**	**17**	**(102)**	**(69)**	**(149)**	**603**

The US$ 148 million-lower EBITDA in the quarter can be mainly attributed to:

- Lower copper realized prices from spot and forward LME price declines.
- Higher copper costs mainly due to planned and corrective maintenance in Salobo during the quarter.
- Lower by-products revenues due to lower prices of copper and PGM's.

These effects were partially offset by:

- Higher nickel realized prices mainly due to greater LME prices in the quarter.

Base Metals EBITDA overview – 2Q22

US$ million	North Atlantic	PTVI (site)	Onça Puma	Sossego	Salobo	Others	Subtotal Base Metals	Marketing activities	Total Base Metals
Net Revenues	1,146	329	168	3	325	(381)	1,590	285	1,875
Costs	(787)	(160)	(75)	(56)	(212)	370	(920)	(277)	(1,197)
Selling and other expenses	(4)	(5)	(5)	(3)	-	2	(15)	-	(15)
Pre-operating and stoppage expenses	-	-	-	(1)	(2)	-	(3)	-	(3)
R&D	(21)	(1)	(1)	(8)	(1)	(25)	(57)	-	(57)
EBITDA	**334**	**163**	**87**	**(65)**	**110**	**(34)**	**595**	**8**	**603**

Average prices

US$/ metric ton	2Q22	1Q22	2Q21
Nickel – LME	28,940	26,395	17,359
Copper – LME	9,513	9,997	9,700
Nickel – realized prices	26,221	22,195	17,183
Copper - realized prices[1]	6,493	10,848	9,653
Gold (US$/oz)	1,884	1,862	1,708
Silver (US$/oz)	20.56	23.47	25.05
Cobalt (US$/t)	81,915	78,085	43,039

[1]Considers Salobo and Sossego operations.

Nickel operations

Nickel operations, ex-marketing activities – EBITDA by operation

US$ million	2Q22	1Q22	2Q21	2Q22 Comments
North Atlantic operation[1]	334	373	317	Lower q/q mainly due to lower by-product revenues, which was partially offset by higher prices.
PTVI	163	116	72	Higher q/q mainly due to higher nickel prices, which was partially offset by the planned furnace rebuild in the quarter and inflationary impacts on fuel.
Onça Puma	87	37	35	Higher q/q mainly due higher nickel sales volumes and realized prices.
Others[2]	(12)	(31)	5	
Total	**572**	**495**	**429**	

[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.

Product type by operation

% of source sales	North Atlantic	PTVI	Onça Puma	Total 2Q22	Total 1Q22
Upper Class I	71.9	-	-	50.3	50.2
Lower Class I	24.7	-	-	17.2	13.5
Class II	2.2	70.9	100	28.1	23.4
Intermediates	1.1	29.1	-	4.4	12.9

Nickel volumes, prices, premiums and revenues

Nickel volumes, prices and revenues

	2Q22	1Q22	2Q21
Volume sold ('000 metric tons)			
Nickel[1]	39	39	47
Copper	17	16	18
Gold as by-product ('000 oz)	10	8	11
Silver as by-product ('000 oz)	198	215	333
PGMs ('000 oz)	46	49	69
Cobalt (metric ton)	450	415	568
Average realized prices (US$/t)			
Nickel	26,221	22,195	17,183
Copper	6,240	10,139	9,399
Gold (US$/oz)	1,780	1,750	1,618
Silver (US$/oz)	19	23	24
Cobalt	81,915	78,085	43,039
Net revenue by product - ex marketing activities (US$ million)			
Nickel	1,032	866	815
Copper	105	164	173
Gold as by-product (US$/oz)	18	14	18
Silver as by-product (US$/oz)	4	5	8
PGMs	65	110	169
Cobalt	37	32	24
Others	1	6	5
Total	**1,262**	**1198**	**1213**

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

Volumes, nickel realized price and premium

	2Q22	1Q22	2Q21
Volumes (kt)			
Upper Class I nickel	19.8	20	26
- of which: EV Battery	1.0	1.3	2.2
Lower Class I nickel	6.8	5	8
Class II nickel	11.1	9	10
Intermediates	1.7	5	3
Nickel realized price (US$/t)			
LME average nickel price	28,940	26,395	17,359
Average nickel realized price	26,221	22,195	17,183
Contribution to the nickel realized price by category:			
Nickel average aggregate premium	100	(110)	-
Other timing and pricing adjustments contributions	(2,819)	(4,090)	(176)
Premium/discount by product (US$/t)			
Upper Class I nickel	1,540	1,250	820
Lower Class I nickel	770	550	170
Class II nickel	(1,880)	90	(760)
Intermediates	(6,100)	(6,480)	(4,040)

Nickel realized price in 2Q22 increased 18% q/q largely due to 10% higher LME average price and better average aggregate premium.

Other timing and pricing adjustments had an aggregate negative impact of US$ 2,819/t in 2Q22, mainly due to (i) US$ 2,885/t[7] negative effect from nickel revenues hedging, and (ii) US$ 261/t negative from fixed-price sales, which were partially offset by US$ 317/t positive from the quotational period adjustments, following the sales distribution during the quarter, as well as the differences between the LME price at the moment of sale and the LME average price.

Nickel Costs and Expenses

Nickel COGS, excluding marketing activities - 1Q22 x 2Q22

		Drivers				
US$ million	1Q22	Volume	Exchange rate	Others	Total variation	2Q22
Nickel operations	678	5	(3)	(28)	(27)	651
Depreciation	165	7	(1)	21	27	192
Total	**843**	**12**	**(4)**	**(7)**	**0**	**843**

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

US$/t	2Q22	1Q22	2Q21	2Q22 Comments
North Atlantic operations¹	17,484	9,505	5,840	Negatively impacted q/q by lower by-products credits and by higher costs related to maintenance at the surface plants.
PTVI	11,876	8,792	8,492	Negatively impacted q/q by higher fuel costs including coal.
Onça Puma	10,678	11,919	8,248	Decreased q/q mainly due to higher dilution of fixed costs.

¹ North Atlantic figures include Clydach refining costs.
² A large portion of North Atlantic finished nickel production is derived from intercompany transfers, as well as from the purchase of ore or nickel intermediates from third parties. These transactions are valued at fair market value.

Selling expenses and other expenses totaled US$ 12 million in 2Q22 (increase of US$ 4 million q/q mainly due to mines placed in care and maintenance in North Atlantic).

R&D expenses were US$ 26 million in 2Q22, these expenses encompass R&D initiatives for further operational improvements in North Atlantic.

[7] In 1Q22 we started the implementation of the Nickel Revenue Hedging Program for 2023. While the nickel realized price for 2Q22 was impacted by strike price of circa US$ 20,252/t, the average price for the complete hedge position has increased from US$ 21,436/t to US$ 23,117/t, reflecting the higher price fixed for the new positions added on 2Q22.

EBITDA break-even – nickel operations[8]

US$/t	2Q22	1Q22	2Q21
COGS[1]	16,591	17,410	14,294
By-product revenues[1]	(5,863)	(8,501)	(8,381)
COGS after by-product revenues	10,728	8,909	5,912
Other expenses	592	609	2,178
Total Costs	**11,320**	**9,518**	**8,090**
Nickel average aggregate premium (discount)	**100**	**(110)**	**(20)**
EBITDA breakeven	**11,220**	**9,628**	**8,110**

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

Selected financial indicators - Nickel operations, ex- marketing activities

US$ million	2Q22	1Q22	2Q21
Net Revenues	1,262	1,198	1,228
Costs[1]	(652)	(679)	(696)
SG&A and other expenses[1]	(12)	(8)	(25)
Pre-operating and stoppage expenses[1]	-	-	(60)
R&D expenses	(26)	(16)	(18)
Adjusted EBITDA	572	495	429
Depreciation and amortization	(192)	(165)	(212)
Adjusted EBIT	380	330	217
Adjusted EBIT margin (%)	30.1	27.6	17.7

[1] Net of depreciation and amortization

Copper operations – Salobo and Sossego

Copper – EBITDA by operation

US$ million	2Q22	1Q22	2Q21	Comments
Salobo	110	260	351	Sequential decrease is mainly attributed to lower copper realized prices and higher costs related to preventive and corrective maintenance.
Sossego	(65)	(15)	100	Sequential decrease is largely explained by lower copper realized prices and sales volumes. Negative EBITDA is associated to the extended SAG mill scheduled maintenance, resulting in higher costs and significantly lower production and sales volumes.
Others Copper[1]	(22)	(19)	(15)	
Total	**23**	**226**	**436**	

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

[8] 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$ 11,515/t.

Copper revenue and realized price

Volumes, prices and revenue

US$ million	2Q22	1Q22	2Q21
Volume sold (000 metric tons)			
Copper	35	34	56
Gold as by-product	52	54	84
Silver as by-product	193	126	188
Average prices (US$/t)			
Average LME copper price	9,513	9,997	9,700
Average copper realized price	**6,493**	**10,848**	**9,653**
Gold (US$/oz)	1,904	1,879	1,720
Silver (US$/oz)	22	24	26
Revenue (US$ million)			
Copper	225	370	538
Gold as by-product	99	101	145
Silver as by-product	4	3	5
Total	**328**	**475**	**688**

Price realization – copper operations

US$/t	2Q22	1Q22	2Q21
Average LME copper price	9,513	9,997	9,700
Current period price adjustments	(1,119)	555	(189)
Copper gross realized price	8,394	10,552	9,511
Prior period price adjustments	(1,436)	752	580
Copper realized price before discounts	**6,958**	**11,304**	**10,090**
TC/RCs, penalties, premiums and discounts	(465)	(456)	(438)
Average copper realized price	**6,493**	**10,848**	**9,653**

Vale's copper products are sold on a provisional pricing basis[9] 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 curve[10]
- 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 negative effects of the prior-period price adjustments of US$ 1,436/t and the current-period price adjustments US$ 1,119/t were mainly due to the forward price decrease during the second quarter.

[9] On June 30th, 2022, Vale had provisionally priced copper sales from Sossego and Salobo totaling 31,738 tons valued at a weighted average LME forward price of US$ 8,256/t, subject to final pricing over the following months.
[10] Includes a small number of final invoices that were provisionally priced and settled within the quarter.

Copper Costs and Expenses

Copper COGS - 1Q22 x 2Q22

		Drivers				
US$ million	1Q22	Volume	Exchange rate	Others	Total variation	2Q22
Copper operations	228	(6)	10	36	40	268
Depreciation	33	(2)	2	2	2	35
Total	**261**	**(8)**	**12**	**38**	**42**	**304**

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

US$/t	2Q22	1Q22	2Q21	Commments
Salobo	3,329	1,624	422	Increased q/q mainly due to lower dilution of fixed costs and higher costs related to preventive and corrective maintenance.
Sossego	40,407	13,917	3,623	Increased q/q as a result of lower dilution of fixed costs as a result of the SAG mill extended scheduled maintenance.

Selling and other expenses were US$ 3 million. Pre-operational and stoppage expenses totaled US$ 3 million in 2Q22. Research and development expenses were US$ 31 million in 2Q22, with Hu'u-related expenditures amounting to US$ 22 million and Sossego-related expenses amounting to US$ 8 million.

EBITDA break-even – copper operations[11]

The realized price to be compared to the EBITDA break-even should be the copper realized price before discounts (US$ 6,958/t), given that TC/RCs, penalties and other discounts are already part of the EBITDA break-even table.

US$/t	2Q22	1Q22	2Q21
COGS	7,734	6,661	4,113
By-product revenues	(2,977)	(3,055)	(2,682)
COGS after by-product revenues	**4,757**	**3,606**	**1,431**
Other expenses[1]	1,051	611	402
Total costs	**5,808**	**4,217**	**1,833**
TC/RCs penalties, premiums and discounts	465	456	438
EBITDA breakeven	**6,273**	**4,673**	**2,271**

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

[11] 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$ 8,577/t.

Selected financial indicators - Copper operations, ex-marketing activities

US$ million	2Q22	1Q22	2Q21
Net Revenues	328	474	688
Costs[1]	(268)	(227)	(229)
SG&A and other expenses[1]	(3)	6	(1)
Pre-operating and stoppage expenses[1]	(3)	(2)	(1)
R&D expenses	(31)	(25)	(21)
Adjusted EBITDA	23	226	436
Depreciation and amortization	(35)	(33)	(40)
Adjusted EBIT	(12)	193	396
Adjusted EBIT margin (%)	(3.7)	40.7	57.5

[1] Net of depreciation and amortization

Annexes

Simplified financial statements

Income Statement

US$ million	2Q22	1Q22	2Q21
Net operating revenue	**11,157**	**10,812**	**16,514**
Cost of goods sold and services rendered	(5,950)	(4,622)	(5,465)
Gross profit	**5,207**	**6,190**	**11,049**
Gross margin (%)	46.7	57.3	66.9
Selling and administrative expenses	(127)	(121)	(132)
Research and evaluation expenses	(151)	(121)	(139)
Pre-operating and operational stoppage	(111)	(154)	(191)
Brumadinho event and de-characterization of dams	(280)	(160)	(185)
Other operational expenses, net	(165)	(106)	(75)
Impairment reversal (impairment and disposals) of non-current assets	(82)	1,072	(41)
Operating income	**4,291**	**6,600**	**10,286**
Financial income	137	150	76
Financial expenses	(372)	(295)	(267)
Other financial items, net	1,056	(97)	580
Equity results and other results in associates and joint ventures	(56)	211	(443)
Income before income taxes	**5,056**	**6,569**	**10,232**
Current tax	(1,181)	(253)	(1,201)
Deferred tax	270	(1,838)	(872)
Net income from continuing operations	**4,145**	**4,478**	**8,159**
Net income attributable to noncontrolling interests	52	22	12
Net income from continuing operations attributable to Vale's stockholders	**4,093**	**4,456**	**8,147**
Discontinued operations			
Net income (Loss) from discontinued operations	2,058	2	(622)
Net income (Loss) from discontinued operations attributable to noncontrolling interests	-	-	(61)
Net income (Loss) from discontinued operations attributable to Vale's stockholders	**2,058**	**2**	**(561)**
Net income	**6,203**	**4,480**	**7,537**
Net income (Loss) attributable to Vale's to noncontrolling interests	52	22	(49)
Net income attributable to Vale's stockholders	**6,151**	**4,458**	**7,586**
Earnings per share (attributable to the Company's stockholders - US$):			
Basic and diluted earnings per share (attributable to the Company's stockholders - US$)	1.32	0.93	1.49

Equity income (loss) by business segment

US$ million	2Q22	%	1Q22	%	2Q21	%
Ferrous Minerals	52	85	16	62	55	47
Base Metals	1	2	2	8	-	-
Others	8	13	8	30	61	53
Total	**61**	**100**	**26**	**100**	**116**	**100**

Balance sheet

US$ million	6/30/2022	3/31/2022	6/30/2021
Assets			
Current assets	**16,022**	**19,465**	**25,403**
Cash and cash equivalents	7,185	9,061	13,649
Short term investments	48	43	951
Accounts receivable	2,148	3,123	4,954
Other financial assets	229	268	214
Inventories	5,154	5,038	4,701
Recoverable taxes	744	832	668
Others	240	291	266
Non-current assets held for sale	274	809	-
Non-current assets	**13,931**	**15,181**	**14,235**
Judicial deposits	1,328	1,455	1,326
Other financial assets	210	390	1,430
Recoverable taxes	1,147	1,157	1,440
Deferred income taxes	10,360	11,192	9,338
Others	886	987	701
Fixed assets	**54,405**	**58,503**	**57,078**
Total assets	**84,358**	**93,149**	**96,716**
Liabilities			
Current liabilities	**12,117**	**14,668**	**14,335**
Suppliers and contractors	3,664	3,446	3,777
Loans, borrowings and leases	935	1,103	992
Other financial liabilities	1,584	2,362	1,547
Taxes payable	331	927	1,678
Settlement program (REFIS)	356	387	356
Provisions	835	750	959
Liabilities related to associates and joint ventures	1,783	2,361	1,467
Liabilities related to Brumadinho	1,060	1,385	2,223
De-characterization of dams and asset retirement obligations	692	646	651
Others	750	845	685
Liabilities associated with non-current assets held for sale	127	456	-
Non-current liabilities	**35,259**	**39,992**	**40,022**
Loans, borrowings and leases	11,673	12,912	12,870
Participative stockholders' debentures	3,219	4,299	4,045
Other financial liabilities	1,820	2,348	3,669
Settlement program (REFIS)	1,976	2,247	2,336
Deferred income taxes	1,759	1,830	1,985
Provisions	2,477	2,782	3,815
Liabilities related to associates and joint ventures	1,603	1,288	1,024
Liabilities related to Brumadinho	2,620	2,807	2,268
De-characterization of dams and asset retirement obligations	6,238	7,610	5,889
Streaming transactions	1,637	1,683	1,961
Others	237	186	160
Total liabilities	**47,376**	**54,660**	**54,357**
Stockholders' equity	**36,982**	**38,489**	**42,359**
Total liabilities and stockholders' equity	**84,358**	**93,149**	**96,716**

Cash flow

US$ million	2Q22	1Q22	2Q21
Cash flow from operations	**5,738**	**5,531**	**9,791**
Interest on loans and borrowings paid	(277)	(179)	(138)
Cash received (paid) on settlement of Derivatives, net	(42)	(76)	60
Payments related to Brumadinho event	(319)	(64)	(224)
Payments related to de-characterization of dams	(83)	(69)	(79)
Interest on participative stockholders debentures paid	(235)	-	(193)
Income taxes (including settlement program)	(1,213)	(2,577)	(1,280)
Net cash provided by operating activities from continuing operations	**3,569**	**2,566**	**7,937**
Net cash provided by operating activities from discontinued operations	**-**	**41**	**(211)**
Net cash provided by operating activities	**3,569**	**2,607**	**7,726**
Cash flow from investing activities			
Short term investment	101	2	543
Capital expenditures	(1,293)	(1,136)	(1,103)
Dividends received from joint ventures and associates	71	65	43
Proceeds from sale of CSI	-	437	-
Other investment activities, net	48	-	(190)
Net cash used in investing activities from continuing operations	**(1,073)**	**(632)**	**(707)**
Net cash used in investing activites from discontinued operations	**(65)**	**(38)**	**(2,380)**
Net cash used in investing actitivies	**(1,138)**	**(670)**	**(3,087)**
Cash flow from financing activities			
Loans and financing:			
Loans and borrowings from third-parties	200	425	10
Payments of loans and borrowings from third-parties	(1,433)	(395)	(179)
Payments of leasing	(57)	(41)	(46)
Payments to stockholders:			
Dividends and interest on capital paid to stockholders	-	(3,480)	(2,208)
Dividends and interest on capital paid to noncontrolling interest	(4)	(3)	(3)
Share buyback program	(2,596)	(1,788)	(2,004)
Net cash used in financing activities from continuing operations	**(3,890)**	**(5,282)**	**(4,430)**
Net cash used in financing activities from discontinued operations	**-**	**(11)**	**(3)**
Net cash used in financing activities	**(3,890)**	**(5,293)**	**(4,433)**
Increase (decrease) in cash and cash equivalents	**(1,459)**	**(3,356)**	**206**
Cash and cash equivalents in the beginning of the period	9,061	11,721	12,883
Effect of exchange rate changes on cash and cash equivalents	(417)	707	560
Cash and cash equivalents from subsidiaries sold, net	-	(11)	-
Cash and cash equivalents at the end of period	**7,185**	**9,061**	**13,649**
Non-cash transactions:			
Additions to property, plant and equipment - capitalized loans and borrowing costs	17	14	14
Cash flow from operating activities			
Income before income taxes	**5,056**	**6,569**	**10,232**
Adjusted for:			
Provisions for Brumadinho	126	-	-
Provision for de-characterization of dams	-	37	-
Equity results and other results in associates and joint ventures	56	(211)	443
Impairment and disposals (impairment reversal) of non-current assets, net	82	(1,072)	41
Depreciation, depletion and amortization	810	686	832
Financial results, net	(821)	242	(389)
Change in assets and liabilities			
Accounts receivable	902	877	(1,101)
Inventories	(305)	(304)	(147)
Suppliers and contractors	432	(672)	334
Payroll and other compensation	73	(328)	79
Other assets and liabilities, net	(673)	(293)	(533)
Cash flow from operations	**5,738**	**5,531**	**9,791**

Revenues, volumes sold, prices and margins

Net operating revenue by destination

US$ million	2Q22	%	1Q22	%	2Q21	%
North America	**585**	**5.2**	**479**	**4.4**	**578**	**3.5**
USA	474	4.2	313	2.9	449	2.7
Canada	111	1.0	166	1.5	129	0.8
South America	**1,434**	**12.9**	**1,307**	**12.1**	**1,778**	**10.8**
Brazil	1,222	11.0	1,128	10.4	1,529	9.3
Others	212	1.9	179	1.7	249	1.5
Asia	**7,024**	**63.0**	**7,067**	**65.4**	**11,293**	**68.4**
China	5,102	45.7	5,389	49.8	8,929	54.1
Japan	1,014	9.1	861	8.0	1,062	6.4
South Korea	359	3.2	255	2.4	418	2.5
Others	549	4.9	562	5.2	884	5.4
Europe	**1,426**	**12.8**	**1,462**	**13.5**	**2,186**	**13.2**
Germany	315	2.8	508	4.7	617	3.7
Italy	207	1.9	182	1.7	231	1.4
Others	904	8.1	772	7.1	1,338	8.1
Middle East	**348**	**3.1**	**242**	**2.2**	**443**	**2.7**
Rest of the World	**340**	**3.0**	**255**	**2.4**	**236**	**1.4**
Total	**11,157**	**100.0**	**10,812**	**100.0**	**16,514**	**100.0**

Volume sold - Minerals and metals

'000 metric tons	2Q22	1Q22	2Q21
Iron ore fines	62,769	51,311	65,370
ROM	1,550	1,035	479
Pellets	8,843	7,011	7,647
Nickel	39	39	47
Copper	52	50	74
Gold as by-product ('000 oz)	62	62	95
Silver as by-product ('000 oz)	391	341	522
PGMs ('000 oz)	46	49	69
Cobalt (metric ton)	450	415	568

Average realized prices

US$/ton	2Q22	1Q22	2Q21
Iron ore fines Vale CFR reference (dmt)	137.9	141.6	200.0
Iron ore fines Vale CFR/FOB realized price	113.3	141.4	184.8
Pellets CFR/FOB (wmt)	201.3	194.6	254.7
Nickel	26,221	22,195	17,183
Copper	6,411	10,619	9,590
Gold (US$/oz)	1,884	1,862	1,708
Silver (US$/oz)	20.56	23.47	25.05
Cobalt (US$/t)	81,915	78,085	43,039

Operating margin by segment (EBIT adjusted margin)

%	2Q22	1Q22	2Q21
Ferrous Minerals	51.5	61.7	71.9
Base Metals	20.1	28.6	26.4
Total	**39.8**	**51.1**	**62.8**

Reconciliation of IFRS and "non-GAAP" information

(a) Adjusted EBIT

US$ million	2Q22	1Q22	2Q21
Net operating revenues	11,157	10,812	16,514
COGS	(5,950)	(4,622)	(5,465)
Sales and administrative expenses	(127)	(121)	(132)
Research and development expenses	(151)	(121)	(139)
Pre-operating and stoppage expenses	(111)	(154)	(191)
Brumadinho event and dam de-characterization of dams	(280)	(160)	(185)
Other operational expenses, net	(165)	(106)	(75)
Dividends received and interests from associates and JVs	71	-	43
Adjusted EBIT from continuing operations	**4,444**	**5,528**	**10,370**

(b) Adjusted EBITDA

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

Reconciliation between adjusted EBITDA and operational cash flow

US$ million	2Q22	1Q22	2Q21
Adjusted EBITDA from continuing operations	**5,254**	**6,214**	**11,202**
Working capital:			
Accounts receivable	902	877	(1,101)
Inventories	(305)	(304)	(147)
Suppliers and contractors	432	(672)	334
Payroll and other compensation	73	(328)	79
Provisions for Brumadinho	126	-	-
Provision for de-characterization of dams	-	37	-
Others	(744)	(293)	(576)
Cash flow from continuing operations	**5,738**	**5,531**	**9,791**
Income taxes paid - including settlement program	(1,213)	(2,577)	(1,280)
Interest on loans and borrowings paid	(277)	(179)	(138)
Payments related to Brumadinho event	(319)	(64)	(224)
Payments related to de-characterization of dams	(83)	(69)	(79)
Interest on participative shareholders' debentures paid	(235)	-	(193)
Cash received (paid) on settlement of Derivatives, net	(42)	(76)	60
Net cash provided by operating activities from continuing operations	**3,569**	**2,566**	**7,937**
Net cash provided by operating activities from discontinued operations	**-**	**41**	**(211)**
Net cash provided by operating activities	**3,569**	**2,607**	**7,726**

Reconciliation between adjusted EBITDA and net income (loss)

US$ million	2Q22	1Q22	2Q21
Adjusted EBITDA from continuing operations	**5,254**	**6,214**	**11,202**
Depreciation, depletion and amortization	(810)	(686)	(832)
Dividends received and interest from associates and joint ventures	(71)	-	(43)
Impairment reversal (impairment and disposals) of non-current assets	(82)	1,072	(41)
Operating income	**4,291**	**6,600**	**10,286**
Financial results	821	(242)	389
Equity results and other results in associates and joint ventures	(56)	211	(443)
Income taxes	(911)	(2,091)	(2,073)
Net income from continuing operations	**4,145**	**4,478**	**8,159**
Net income (loss) attributable to noncontrolling interests	52	22	12
Net income attributable to Vale's stockholders	**4,093**	**4,456**	**8,147**

(c) Net debt

US$ million	2Q22	1Q22	2Q21
Gross debt	11,031	12,349	12,154
Leases	1,577	1,666	1,708
Cash and cash equivalents[1]	7,233	9,104	14,600
Net debt	**5,375**	**4,911**	**(738)**

[1] Including financial investments

(d) Gross debt / LTM Adjusted EBITDA

US$ million	2Q22	1Q22	2Q21
Gross debt and leases / LTM Adjusted EBITDA (x)	0.5	0.5	0.5
Gross debt and leases / LTM operational cash flow (x)	0.6	0.6	0.5

(e) LTM Adjusted EBITDA / LTM interest payments

US$ million	2Q22	1Q22	2Q21
Adjusted LTM EBITDA / LTM gross interest (x)	38.1	47.7	39.1
LTM adjusted EBITDA / LTM interest payments (x)	23.0	33.4	38.7

(f) US dollar exchange rates

R$/US$	2Q22	1Q22	2Q21
Average	4.9210	5.2299	5.2907
End of period	5.2380	4.7378	5.0022