



# Interim Financial Statements

## September 30, 2022



IFRS in US\$

## Interim Financial Statements Contents



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## **Report of Independent Registered Public Accounting Firm**

To the stockholders and Board of Directors of

Vale S.A.

### ***Results of Review of Interim Financial Statements***

We have reviewed the accompanying consolidated balance sheet of Vale S.A. and its subsidiaries (the “Company”) as of September 30, 2022, and the related consolidated income statement, statement of comprehensive income and cash flows for the three and nine-month periods ended September 30, 2022 and 2021, and the consolidated statement of changes in equity for the nine-month periods ended September 30, 2022 and 2021, including the related notes (collectively referred to as the “interim financial statements”). Based on our reviews, we are not aware of any material modifications that should be made to the accompanying interim financial statements for them to be in conformity with IAS 34 - *Interim Financial Reporting*, as issued by the International Accounting Standards Board (IASB).

We have previously audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheet of the Company as of December 31, 2021, and the related consolidated income statement and statement of comprehensive income, changes in equity and cash flows for the year then ended (not presented herein), and in our report dated February 24, 2022, we expressed an unqualified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying consolidated balance sheet as of December 31, 2021, is fairly stated, in all material respects, in relation to the consolidated balance sheet from which it has been derived.

### ***Basis for Review Results***

These interim financial statements are the responsibility of the Company’s management. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB. We conducted our review in accordance with the standards of the PCAOB. A review of interim financial statements consists principally of applying analytical procedures and making inquiries of persons responsible for financial and accounting matters. It is substantially less in scope than an audit conducted in accordance with the standards of the PCAOB, the objective of which is the expression of an opinion regarding the financial statements taken as a whole. Accordingly, we do not express such an opinion.

/s/ PricewaterhouseCoopers Auditores Independentes Ltda.

Rio de Janeiro, RJ, Brazil

October 27, 2022

## Consolidated Income Statement

In millions of United States dollars, except earnings per share data

		Three-month period ended		Nine-month period ended	
		September 30,		September 30,	
	Notes	2022	2021	2022	2021
Continuing operations					
Net operating revenue	4(d)	9,929	12,330	31,898	41,397
Cost of goods sold and services rendered	5(a)	(6,301)	(5,472)	(16,873)	(15,235)
Gross profit		3,628	6,858	15,025	26,162
Operating expenses					
Selling and administrative	5(b)	(119)	(114)	(367)	(350)
Research and development		(170)	(135)	(442)	(372)
Pre-operating and operational stoppage	23	(89)	(165)	(354)	(501)
Brumadinho event and de-characterization of dams	21 and 23	(336)	(161)	(776)	(461)
Other operating expenses, net	5(c)	(51)	(31)	(322)	(121)
		(765)	(606)	(2,261)	(1,805)
Impairment reversal (impairment and disposals) of non-current assets, net	14 and 16	(40)	(63)	950	(221)
Operating income		2,823	6,189	13,714	24,136
Financial income					
Financial income	6	141	90	428	224
Financial expenses	6	(221)	(240)	(888)	(851)
Other financial items, net	6	2,427	(200)	3,386	588
Equity results and other results in associates and joint ventures	13, 14 and 22	78	128	233	(316)
Income before income taxes		5,248	5,967	16,873	23,781
Income taxes					
	7				
Current tax		(514)	(2,464)	(1,948)	(5,180)
Deferred tax		(290)	2,003	(1,858)	836
		(804)	(461)	(3,806)	(4,344)
Net income from continuing operations		4,444	5,506	13,067	19,437
Net income (loss) attributable to noncontrolling interests		(11)	29	63	53
Net income from continuing operations attributable to Vale's stockholders		4,455	5,477	13,004	19,384
Discontinued operations					
	14				
Net income (loss) from discontinued operations		-	(1,548)	2,060	(2,465)
Net income (loss) attributable to noncontrolling interests		-	43	-	(99)
Net income (loss) from discontinued operations attributable to Vale's stockholders		-	(1,591)	2,060	(2,366)
Net income		4,444	3,958	15,127	16,972
Net income (loss) attributable to noncontrolling interests		(11)	72	63	(46)
Net income attributable to Vale's stockholders		4,455	3,886	15,064	17,018
Basic and diluted earnings per share attributable to Vale's stockholders:					
	8				
Common share (US\$)		0.98	0.76	3.22	3.36

As described in note 14, the coal segment is presented in these interim financial statements as discontinued operation. Therefore, comparative financial information for the nine-month period ended September 30, 2021 has been restated to reflect the sale of the coal operation.

The accompanying notes are an integral part of these interim financial statements.

## Consolidated Statement of Comprehensive Income

In millions of United States dollars



	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
<b>Net income</b>	<b>4,444</b>	<b>3,958</b>	<b>15,127</b>	<b>16,972</b>
<b>Other comprehensive income:</b>				
<b>Items that will not be reclassified to income statement</b>				
Translation adjustments	(1,282)	(3,249)	1,046	(1,364)
Employee post-retirement obligations (note 26)	8	95	151	411
Fair value adjustment to investment in equity securities (i)	-	150	-	343
	<b>(1,274)</b>	<b>(3,004)</b>	<b>1,197</b>	<b>(610)</b>
<b>Items that may be reclassified to income statement</b>				
Translation adjustments	(187)	1,380	(1,236)	624
Net investment hedge (note 17)	(47)	(127)	27	(85)
Cash flow hedge (note 17)	40	10	48	(16)
Reclassification of cumulative translation adjustment to income statement (notes 13 and 14)	(1,608)	(10)	(4,830)	(1,552)
	<b>(1,802)</b>	<b>1,253</b>	<b>(5,991)</b>	<b>(1,029)</b>
<b>Total comprehensive income</b>	<b>1,368</b>	<b>2,207</b>	<b>10,333</b>	<b>15,333</b>
Comprehensive income (loss) attributable to noncontrolling interests	(10)	69	58	(47)
<b>Comprehensive income attributable to Vale's stockholders</b>	<b>1,378</b>	<b>2,138</b>	<b>10,275</b>	<b>15,380</b>

(i) Fair value adjustment to shares received as part of the consideration for the sale of Vale's fertilizer business to The Mosaic Company. In November 2021, the Company sold all shares for US\$1,259 in a block trade.

Items above are stated net of tax and the related taxes are disclosed in note 7.

The accompanying notes are an integral part of these interim financial statements.

## Consolidated Statement of Cash Flows

In millions of United States dollars



	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
<b>Cash flows from operations (a)</b>	<b>4,591</b>	<b>10,324</b>	<b>15,860</b>	<b>29,186</b>
Interest on loans and borrowings paid (note 20)	(194)	(173)	(650)	(599)
Cash received (paid) on settlement of derivatives, net (note 17)	100	22	(18)	(117)
Payments related to Brumadinho event (note 21)	(423)	(93)	(806)	(384)
Payments related to de-characterization of dams (note 23)	(95)	(93)	(247)	(254)
Interest on participative stockholders' debentures paid (note 19)	-	-	(235)	(193)
Income taxes (including settlement program) (note 7)	(582)	(991)	(4,372)	(3,434)
<b>Net cash generated from operating activities from continuing operations</b>	<b>3,397</b>	<b>8,996</b>	<b>9,532</b>	<b>24,205</b>
Net cash generated (used) in operating activities from discontinued operations (note 14)	-	55	41	(406)
<b>Net cash generated from operating activities</b>	<b>3,397</b>	<b>9,051</b>	<b>9,573</b>	<b>23,799</b>
<b>Cash flow from investing activities:</b>				
Capital expenditures (note 4b)	(1,230)	(1,199)	(3,659)	(3,282)
Proceeds from sale of Midwestern System, net of cash (note 14)	140	-	140	-
Disbursement on VNC sale (note 14)	-	-	-	(555)
Proceeds from sale of CSI (note 14)	-	-	437	-
Dividends received from associates and joint ventures (note 13)	28	5	164	48
Short-term investment	118	424	221	251
Other investing activities, net	(70)	18	(22)	(308)
<b>Net cash used in investing activities from continuing operations</b>	<b>(1,014)</b>	<b>(752)</b>	<b>(2,719)</b>	<b>(3,846)</b>
Net cash used in investing activities from discontinued operations (note 14)	-	(49)	(103)	(2,388)
<b>Net cash used in investing activities</b>	<b>(1,014)</b>	<b>(801)</b>	<b>(2,822)</b>	<b>(6,234)</b>
<b>Cash flow from financing activities:</b>				
Loans and borrowings from third parties (note 20)	150	-	775	300
Payments of loans and borrowings from third parties (note 20)	(448)	(111)	(2,276)	(1,523)
Payments of leasing (note 20)	(48)	(55)	(146)	(152)
Dividends and interest on capital paid to stockholders (note 27c)	(3,123)	(7,391)	(6,603)	(13,483)
Dividends and interest on capital paid to noncontrolling interest	(3)	(3)	(10)	(9)
Share buyback program (note 27d)	(686)	(2,841)	(5,070)	(4,845)
<b>Net cash used in financing activities from continuing operations</b>	<b>(4,158)</b>	<b>(10,401)</b>	<b>(13,330)</b>	<b>(19,712)</b>
Net cash used in financing activities from discontinued operations (note 14)	-	(3)	(11)	(10)
<b>Net cash used in financing activities</b>	<b>(4,158)</b>	<b>(10,404)</b>	<b>(13,341)</b>	<b>(19,722)</b>
<b>Increase (reduction) in cash and cash equivalents</b>	<b>(1,775)</b>	<b>(2,154)</b>	<b>(6,590)</b>	<b>(2,157)</b>
Cash and cash equivalents at the beginning of the period	7,185	13,649	11,721	13,487
Effect of exchange rate changes on cash and cash equivalents	(228)	(638)	62	(473)
Cash and cash equivalents from subsidiaries sold, net (note 14)	-	-	(11)	-
<b>Cash and cash equivalents at end of the period</b>	<b>5,182</b>	<b>10,857</b>	<b>5,182</b>	<b>10,857</b>
<b>Cash flow from operating activities:</b>				
Income before taxation	5,248	5,967	16,873	23,781
<b>Adjusted for:</b>				
Equity results and other results in associates and joint ventures (note 13)	(78)	(128)	(233)	316
Impairment and disposals (impairment reversal) of non-current assets, net (note 14)	40	63	(950)	221
Provisions for Brumadinho (note 21)	141	-	267	-
Provision for de-characterization of dams (note 23)	35	-	72	-
Depreciation, depletion and amortization	775	649	2,271	2,212
Financial results, net (note 6)	(2,347)	350	(2,926)	39
<b>Changes in assets and liabilities:</b>				
Accounts receivable (note 9)	3	3,870	1,782	4,171
Inventories (note 10)	(287)	(588)	(896)	(926)
Suppliers and contractors (note 11) (i)	1,169	322	929	354
Payroll and other compensation	158	61	(97)	(143)
Other assets and liabilities, net	(266)	(242)	(1,232)	(839)
<b>Cash flows generated from operations (a)</b>	<b>4,591</b>	<b>10,324</b>	<b>15,860</b>	<b>29,186</b>
<b>Non-cash transactions:</b>				
Additions to property, plant and equipment - capitalized loans and borrowing costs	9	14	40	44

(i) Includes variable lease payments.

The accompanying notes are an integral part of these interim financial statements.

## Consolidated Balance Sheet

In millions of United States dollars



	Notes	September 30, 2022	December 31, 2021
<b>Assets</b>			
<b>Current assets</b>			
Cash and cash equivalents	20	5,182	11,721
Short-term investments	20	42	184
Accounts receivable	9	2,150	3,914
Other financial assets	12	152	111
Inventories	10	5,268	4,377
Recoverable taxes	7(e)	858	862
Other		270	215
		<b>13,922</b>	<b>21,384</b>
Non-current assets held for sale		-	976
		<b>13,922</b>	<b>22,360</b>
<b>Non-current assets</b>			
Judicial deposits	25(c)	1,289	1,220
Other financial assets	12	236	143
Recoverable taxes	7(e)	1,114	935
Deferred income taxes	7(a)	9,825	11,441
Other		890	650
		<b>13,354</b>	<b>14,389</b>
Investments in associates and joint ventures	13	1,795	1,751
Intangible	15	9,344	9,011
Property, plant and equipment	16	42,196	41,931
		<b>66,689</b>	<b>67,082</b>
<b>Total assets</b>		<b>80,611</b>	<b>89,442</b>
<b>Liabilities</b>			
<b>Current liabilities</b>			
Suppliers and contractors	11	4,735	3,475
Loans, borrowings, and leases	20	447	1,204
Other financial liabilities	12	1,466	1,962
Taxes payable	7(e)	303	2,177
Settlement program ("REFIS")	7(c)	351	324
Liabilities related to associates and joint ventures	22	2,027	1,785
Provisions	24	929	1,045
Liabilities related to Brumadinho	21	1,318	1,156
De-characterization of dams and asset retirement obligations	23	700	621
Other		718	1,094
		<b>12,994</b>	<b>14,843</b>
Liabilities associated with non-current assets held for sale		-	355
		<b>12,994</b>	<b>15,198</b>
<b>Non-current liabilities</b>			
Loans, borrowings, and leases	20	11,757	12,578
Participative stockholders' debentures	19	2,659	3,419
Other financial liabilities	12	1,948	2,571
Settlement program ("REFIS")	7(c)	1,861	1,964
Deferred income taxes	7(a)	1,608	1,881
Provisions	24	2,349	3,419
Liabilities related to Brumadinho	21	1,913	2,381
De-characterization of dams and asset retirement obligations	23	5,926	7,482
Liabilities related to associates and joint ventures	22	1,117	1,327
Streaming transactions		1,629	1,779
Other		178	137
		<b>32,945</b>	<b>38,938</b>
<b>Total liabilities</b>		<b>45,939</b>	<b>54,136</b>
<b>Stockholders' equity</b>			
Equity attributable to Vale's stockholders	27	33,202	34,472
Equity attributable to noncontrolling interests		1,470	834
<b>Total stockholders' equity</b>		<b>34,672</b>	<b>35,306</b>
<b>Total liabilities and stockholders' equity</b>		<b>80,611</b>	<b>89,442</b>

The accompanying notes are an integral part of these interim financial statements.

## Consolidated Statement of Changes in Equity

In millions of United States dollars



	Share capital	Capital reserve	Profit reserves	Treasury stocks	Other reserves	Cumulative translation adjustments	Retained earnings	Equity attributable to Vale's stockholders	Equity attributable to noncontrolling interests	Total stockholders' equity
<b>Balance at December 31, 2021</b>	<b>61,614</b>	<b>1,139</b>	<b>15,702</b>	<b>(5,579)</b>	<b>(1,960)</b>	<b>(36,444)</b>	<b>-</b>	<b>34,472</b>	<b>834</b>	<b>35,306</b>
<b>Net income</b>	-	-	-	-	-	-	<b>15,064</b>	<b>15,064</b>	<b>63</b>	<b>15,127</b>
Other comprehensive income	-	-	1,021	-	191	(6,001)	-	(4,789)	(5)	(4,794)
Dividends and interest on capital of Vale's stockholders (note 27c)	-	-	(3,500)	-	-	-	(3,000)	(6,500)	-	(6,500)
Dividends of noncontrolling interests	-	-	-	-	-	-	-	-	(6)	(6)
Derecognition of noncontrolling interests	-	-	-	-	-	-	-	-	584	584
Share buyback (note 27d)	-	-	-	(5,070)	-	-	-	(5,070)	-	(5,070)
Share-based payment	-	-	-	-	6	-	-	6	-	6
Treasury shares used and cancelled (note 27b)	-	-	(6,616)	6,635	-	-	-	19	-	19
<b>Balance at September 30, 2022</b>	<b>61,614</b>	<b>1,139</b>	<b>6,607</b>	<b>(4,014)</b>	<b>(1,763)</b>	<b>(42,445)</b>	<b>12,064</b>	<b>33,202</b>	<b>1,470</b>	<b>34,672</b>

  

	Share capital	Capital reserve	Profit reserves	Treasury stocks	Other reserves	Cumulative translation adjustments	Retained earnings	Equity attributable to Vale's stockholders	Equity attributable to noncontrolling interests	Total stockholders' equity
<b>Balance at December 31, 2020</b>	<b>61,614</b>	<b>1,139</b>	<b>7,042</b>	<b>(2,441)</b>	<b>(2,056)</b>	<b>(29,554)</b>	<b>-</b>	<b>35,744</b>	<b>(923)</b>	<b>34,821</b>
<b>Net income (loss)</b>	-	-	-	-	-	-	<b>17,018</b>	<b>17,018</b>	<b>(46)</b>	<b>16,972</b>
Other comprehensive income	-	-	(211)	-	760	(2,187)	-	(1,638)	(1)	(1,639)
Dividends and interest on capital of Vale's stockholders (note 27c)	-	-	(4,319)	-	-	-	(8,368)	(12,687)	-	(12,687)
Dividends of noncontrolling interests	-	-	-	-	-	-	-	-	(24)	(24)
Acquisitions and derecognition of noncontrolling interests	-	-	-	-	(331)	-	-	(331)	1,761	1,430
Share buyback (note 27d)	-	-	-	(4,845)	-	-	-	(4,845)	-	(4,845)
Share-based payment	-	-	-	-	54	-	-	54	-	54
Treasury shares used and cancelled (note 27b)	-	-	(2,401)	2,408	-	-	-	7	-	7
<b>Balance at September 30, 2021</b>	<b>61,614</b>	<b>1,139</b>	<b>111</b>	<b>(4,878)</b>	<b>(1,573)</b>	<b>(31,741)</b>	<b>8,650</b>	<b>33,322</b>	<b>767</b>	<b>34,089</b>

The accompanying notes are an integral part of these interim financial statements.



## 1. Corporate information

Vale S.A. (the “Parent Company”) is a public company headquartered in the city of Rio de Janeiro, Brazil with securities traded on the stock exchanges of São Paulo – B3 S.A. (VALE3), New York - NYSE (VALE) and Madrid – LATIBEX (XVALO).

Vale S.A. and its subsidiaries (“Vale” or the “Company”) are global producers of: (i) iron ore and iron ore pellets, which are key raw materials for steelmaking, (ii) nickel, that is used to produce stainless steel, electric vehicles and metal alloys employed in the production process of several products, (iii) copper, used in the construction sector to produce pipes and electrical wires, and (iv) platinum, gold, silver, and cobalt as by-products of nickel and copper. Most of the Company’s products are sold to international markets by Vale International S.A. (“VISA”), a trading company located in Switzerland.

Vale also operates a railroad and port logistics system in Brazil to outflow its production and Vale has equity investments and assets with the objective of reducing energy costs, minimizing the risk of shortages and meeting its energy consumption needs through renewable sources.

In the second quarter of 2022, the Company concluded the sale of the thermal and metallurgical coal operations, as presented in note 14. Therefore, the results from coal operation until closing are presented in these interim financial statements as “discontinued operations”.

## 2. Basis of preparation of interim financial statements

The consolidated interim financial statements of the Company (“interim financial statements”) have been prepared and are being presented in accordance with IAS 34 Interim Financial Reporting of the International Financial Reporting Standards (“IFRS”) as issued by the International Accounting Standards Board (“IASB”). All relevant information for the interim financial statements, and only this information, are presented and consistent to those used by the Company’s Management.

The interim financial statements have been prepared to update users on the relevant events and transactions that occurred in the period and must be analyzed together with the financial statements for the year ended December 31, 2021. Accounting policies, accounting estimates and judgments, management of risk and measurement methods are the same as those adopted in the preparation of the latest annual financial statements.

These interim financial statements were authorized for issue by the Company’s Board of Directors in a meeting held on October 27, 2022.

### a) Functional currency and presentation currency

The interim financial statements of the Company and its associates and joint ventures are measured using the currency of the primary economic environment in which the entity operates (“functional currency”), in the case of the Parent Company is the Brazilian real (“R\$”). For presentation purposes, these financial statements are presented in United States dollar (“US\$”) as the Company believes that this is how international investors analyze the financial statements.

The main exchange rates used by the Company to translate its foreign operations are as follows:

	Closing rate		Average rate	
			Three-month period ended	Nine-month period ended
	September 30, 2022	December 31, 2021	September 30, 2022	September 30, 2021
US Dollar (“US\$”)	5.4066	5.5805	5.2462	5.2286
Canadian dollar (“CAD”)	3.9318	4.3882	4.0189	4.1517
Euro (“EUR”)	5.2904	6.3210	5.2838	6.1623
			5.1360	5.3317
			4.0024	4.2624
			5.4629	6.3769

### b) Russia-Ukraine conflict

The Company's business is subject to external risk factors related to our global operations and the global profile of our client portfolio and supply chains. Global markets are experiencing volatility and disruption following the escalation of geopolitical tensions in connection with the military conflict between Russia and Ukraine.

The resulting economic sanctions imposed by the United States, Canada, the European Union, the UK and other countries as a direct consequence of this conflict may continue to significantly impact supply chains, lead to market disruptions including significant volatility in commodities' prices and bring heightened near-term uncertainty to the global financial system, including through instability of credit and of capital markets.

At this time, the effects of the Russia-Ukraine conflict have not caused significant impacts on the Company's operations nor on the fair value of its assets and liabilities. However, escalation of the Russia-Ukraine conflict may adversely affect the Company's business, such as disruption of international trade flows, extreme market pricing volatility, with particular impact on the energy sector, industrial and agricultural supply chains, shipping, and regulatory and contractual uncertainty, and increased geopolitical tensions around the world.

## 3. Significant events of the current period

Balance Sheet, Cash Flows and Income Statement were particularly affected by the following events and transactions during the three-month period ended September 30, 2022:

**Capital reduction in a foreign subsidiary (notes 6 and 13).** In August 2022, the Company approved the capital reduction of VISA in the amount of US\$1,500, which has generated a gain of US\$1,543, recorded under "Other financial items, net", due to the reclassification of the cumulative translation adjustments from stockholders' equity to the income statement.

**Sale of Midwestern System assets (note 14).** In July 2022, the Company concluded the sale of the Midwestern System to J&F Mineração Ltda. ("J&F") and received US\$153, in addition to transferring to J&F the obligations related to the take-or-pay logistics contracts. These assets were classified as held for sale and a gain of US\$1,121 was recorded in the nine-month period ended September 30, 2022, due to the reversal of the impairment of property, plant and equipment and the remeasurement of the onerous contract liability. In addition, the Company recognized a gain of US\$37 due to the reclassification of the cumulative translation adjustments from stockholders' equity to the income statement.

**Sale of Companhia Siderúrgica do Pecém ("CSP") (note 14).** In July 2022, the Company and the other shareholders of CSP signed a binding agreement with ArcelorMittal for the sale of CSP for approximately US\$2,132, which will be received at the closing of the transaction and it will be fully used for the early settlement of CSP's net debt in the amount of approximately US\$2,300. The Company does not expect any material impact at closing, which is expected to occur in the first quarter 2023, subject to customary regulatory approvals.

**Share buyback (note 27d).** During the three-month period ended September 30, 2022, the Company repurchased 48,670,681 common shares and their respective ADRs, corresponding to US\$686, of which US\$358 were acquired through wholly owned subsidiaries and US\$328 by the Parent Company.

**Cancellation of common shares held in treasury (note 27b).** In July 2022, the Company approved the cancellation of 220,150,800 common shares held in treasury. The effect of US\$3,786 was recorded in shareholders' equity as "Treasury shares used and cancelled".

**Stockholder's remuneration (note 27c).** In July 2022, the Company approved the remuneration to its shareholders in the amount of US\$3,000, which was fully paid in September 2022.

#### 4. Information by business segment and geographic area

The Company operates the following reportable segments: Ferrous Minerals, Base Metals and Coal (presented as discontinued operations). The segments are aligned with products and reflect the structure used by Management to evaluate the Company's performance. The responsible bodies for making operational decisions, allocating resources and evaluating performance are the Executive Boards and Board of Directors. Accordingly, the performance of the operating segments is assessed based on a measure of adjusted EBITDA, among other measures.

The Company allocates to "Other" the revenues and cost of other products, services, research and development, investments in joint ventures and associates of other business and unallocated corporate expenses. Costs related to the Brumadinho event are allocated to "Other" as well.

In 2022, the Company has allocated the financial information of the Midwestern System to "Other" as this operation is no longer analyzed by the chief operating decision maker as part of the performance of the Ferrous Minerals business segment due to the binding agreement to sell this operation. The comparative information was reclassified to reflect the revision in the allocation criteria.

##### a) Adjusted EBITDA

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 (impairment and disposals) of non-current assets, net.

Three-month period ended September 30, 2022							
	Net operating revenue	Cost of goods sold and services rendered	Sales, administrative and other operating expenses	Research and development	Pre operating and operational stoppage	Dividends received and interest from associates and joint ventures	Adjusted EBITDA
<b>Ferrous minerals</b>							
Iron ore	6,053	(3,095)	(44)	(46)	(63)	1	2,806
Iron ore pellets	1,656	(714)	(7)	(1)	(5)	4	933
Other ferrous products and services	118	(82)	4	(2)	(4)	-	34
	<b>7,827</b>	<b>(3,891)</b>	<b>(47)</b>	<b>(49)</b>	<b>(72)</b>	<b>5</b>	<b>3,773</b>
<b>Base metals</b>							
Nickel and other products	1,563	(1,325)	2	(31)	-	-	209
Copper	479	(275)	(8)	(38)	(3)	-	155
	<b>2,042</b>	<b>(1,600)</b>	<b>(6)</b>	<b>(69)</b>	<b>(3)</b>	<b>-</b>	<b>364</b>
Brumadinho event and de-characterization of dams	-	-	(336)	-	-	-	(336)
Other	60	(58)	(108)	(52)	-	23	(135)
<b>Total</b>	<b>9,929</b>	<b>(5,549)</b>	<b>(497)</b>	<b>(170)</b>	<b>(75)</b>	<b>28</b>	<b>3,666</b>

  

Three-month period ended September 30, 2021							
	Net operating revenue	Cost of goods sold and services rendered	Sales, administrative and other operating expenses	Research and development	Pre operating and operational stoppage	Dividends received and interest from associates and joint ventures	Adjusted EBITDA
<b>Ferrous minerals</b>							
Iron ore	8,418	(2,993)	(31)	(53)	(61)	-	5,280
Iron ore pellets	2,009	(612)	(2)	(1)	(10)	-	1,384
Other ferrous products and services	139	(109)	1	(1)	(4)	-	26
	<b>10,566</b>	<b>(3,714)</b>	<b>(32)</b>	<b>(55)</b>	<b>(75)</b>	<b>-</b>	<b>6,690</b>
<b>Base metals</b>							
Nickel and other products	896	(782)	57	(20)	(52)	-	99
Copper	678	(242)	(6)	(23)	(1)	-	406
	<b>1,574</b>	<b>(1,024)</b>	<b>51</b>	<b>(43)</b>	<b>(53)</b>	<b>-</b>	<b>505</b>
Brumadinho event and de-characterization of dams	-	-	(161)	-	-	-	(161)
COVID-19	-	-	(10)	-	-	-	(10)
Other (i)	190	(131)	(144)	(37)	(1)	5	(118)
<b>Total of continuing operations</b>	<b>12,330</b>	<b>(4,869)</b>	<b>(296)</b>	<b>(135)</b>	<b>(129)</b>	<b>5</b>	<b>6,906</b>
<b>Discontinued operations - Coal</b>	<b>352</b>	<b>(314)</b>	<b>(5)</b>	<b>(1)</b>	<b>-</b>	<b>-</b>	<b>32</b>
<b>Total</b>	<b>12,682</b>	<b>(5,183)</b>	<b>(301)</b>	<b>(136)</b>	<b>(129)</b>	<b>5</b>	<b>6,938</b>

(i) Includes the reclassification of the EBITDA of Midwestern System in the amount of US\$40.

## Notes to the Interim Financial Statements

Expressed in millions of United States dollar, unless otherwise stated



	Nine-month period ended September 30, 2022						
	Net operating revenue	Cost of goods sold and services rendered	Sales, administrative and other operating expenses	Research and development	Pre operating and operational stoppage	Dividends received and interest from associates and joint ventures	Adjusted EBITDA
<b>Ferrous minerals</b>							
Iron ore	20,421	(8,185)	(147)	(125)	(250)	1	11,715
Iron ore pellets	4,800	(1,947)	-	(2)	(16)	75	2,910
Other ferrous products and services	365	(253)	2	(4)	(13)	-	97
	<b>25,586</b>	<b>(10,385)</b>	<b>(145)</b>	<b>(131)</b>	<b>(279)</b>	<b>76</b>	<b>14,722</b>
<b>Base metals</b>							
Nickel and other products	4,568	(3,163)	(18)	(73)	-	-	1,314
Copper	1,281	(770)	(5)	(94)	(8)	-	404
	<b>5,849</b>	<b>(3,933)</b>	<b>(23)</b>	<b>(167)</b>	<b>(8)</b>	<b>-</b>	<b>1,718</b>
Brumadinho event and de-characterization of dams	-	-	(776)	-	-	-	(776)
Other (i)	463	(381)	(489)	(144)	(2)	23	(530)
<b>Total of continuing operations</b>	<b>31,898</b>	<b>(14,699)</b>	<b>(1,433)</b>	<b>(442)</b>	<b>(289)</b>	<b>99</b>	<b>15,134</b>
<b>Discontinued operations - Coal</b>	<b>448</b>	<b>(264)</b>	<b>(12)</b>	<b>(1)</b>	<b>-</b>	<b>-</b>	<b>171</b>
<b>Total</b>	<b>32,346</b>	<b>(14,963)</b>	<b>(1,445)</b>	<b>(443)</b>	<b>(289)</b>	<b>99</b>	<b>15,305</b>

(i) Includes the reclassification of the EBITDA of Midwestern System in the amount of US\$77.

	Nine-month period ended September 30, 2021						
	Net operating revenue	Cost of goods sold and services rendered	Sales, administrative and other operating expenses	Research and development	Pre operating and operational stoppage	Dividends received and interest from associates and joint ventures	Adjusted EBITDA
<b>Ferrous minerals</b>							
Iron ore	29,559	(7,764)	(114)	(129)	(226)	-	21,326
Iron ore pellets	5,164	(1,515)	29	(2)	(36)	22	3,662
Other ferrous products and services	432	(308)	2	(2)	(12)	-	112
	<b>35,155</b>	<b>(9,587)</b>	<b>(83)</b>	<b>(133)</b>	<b>(274)</b>	<b>22</b>	<b>25,100</b>
<b>Base metals</b>							
Nickel and other products	3,822	(2,512)	22	(49)	(112)	-	1,171
Copper	1,920	(637)	(7)	(62)	(3)	-	1,211
	<b>5,742</b>	<b>(3,149)</b>	<b>15</b>	<b>(111)</b>	<b>(115)</b>	<b>-</b>	<b>2,382</b>
Brumadinho event and de-characterization of dams	-	-	(461)	-	-	-	(461)
COVID-19	-	-	(28)	-	-	-	(28)
Other (i)	500	(425)	(346)	(128)	(3)	26	(376)
<b>Total of continuing operations</b>	<b>41,397</b>	<b>(13,161)</b>	<b>(903)</b>	<b>(372)</b>	<b>(392)</b>	<b>48</b>	<b>26,617</b>
<b>Discontinued operations - Coal</b>	<b>605</b>	<b>(966)</b>	<b>(3)</b>	<b>(5)</b>	<b>-</b>	<b>78</b>	<b>(291)</b>
<b>Total</b>	<b>42,002</b>	<b>(14,127)</b>	<b>(906)</b>	<b>(377)</b>	<b>(392)</b>	<b>126</b>	<b>26,326</b>

(i) Includes the reclassification of the EBITDA of Midwestern System in the amount of US\$120.

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Adjusted EBITDA is reconciled to net income as follows:

### Continuing operations

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
<b>Net income from continuing operations attributable to Vale's stockholders</b>	<b>4,455</b>	<b>5,477</b>	<b>13,004</b>	<b>19,384</b>
Net income (loss) attributable to noncontrolling interests	(11)	29	63	53
<b>Net income</b>	<b>4,444</b>	<b>5,506</b>	<b>13,067</b>	<b>19,437</b>
Depreciation, depletion and amortization	775	649	2,271	2,212
Income taxes	804	461	3,806	4,344
Financial results	(2,347)	350	(2,926)	39
Equity results and other results in associates and joint ventures	(78)	(128)	(233)	316
Dividends received from associates and joint ventures	28	5	99	48
Impairment and disposals (impairment reversal) of non-current assets, net	40	63	(950)	221
<b>Adjusted EBITDA from continuing operations</b>	<b>3,666</b>	<b>6,906</b>	<b>15,134</b>	<b>26,617</b>

### Discontinued operations (Coal)

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
<b>Net income (loss) from discontinued operations attributable to Vale's stockholders</b>	<b>-</b>	<b>(1,591)</b>	<b>2,060</b>	<b>(2,366)</b>
Net income (loss) attributable to noncontrolling interests	-	43	-	(99)
<b>Net income (loss)</b>	<b>-</b>	<b>(1,548)</b>	<b>2,060</b>	<b>(2,465)</b>
Depreciation, depletion and amortization	-	51	-	68
Income taxes	-	(821)	2	(821)
Financial results	-	23	(3,065)	(363)
Derecognition of noncontrolling interest	-	-	585	-
Equity results in associates and joint ventures	-	-	-	26
Dividends received and interest from associates and joint ventures (i)	-	-	-	78
Impairment of non-current assets, net	-	2,327	589	3,186
<b>Adjusted EBITDA from discontinued operations</b>	<b>-</b>	<b>32</b>	<b>171</b>	<b>(291)</b>

(i) Includes the remuneration of the financial instrument of the Coal segment.

### b) Assets by segment

	September 30, 2022			December 31, 2021		
	Product inventory	Investments in associates and joint ventures	Property, plant and equipment and intangible	Product inventory	Investments in associates and joint ventures	Property, plant and equipment and intangible
Ferrous minerals	2,715	1,258	30,892	2,186	1,113	28,988
Base metals	1,612	-	18,694	1,384	17	20,127
Other	-	537	1,954	21	621	1,827
<b>Total</b>	<b>4,327</b>	<b>1,795</b>	<b>51,540</b>	<b>3,591</b>	<b>1,751</b>	<b>50,942</b>

	2022			Three-month period ended September 30, 2021		
	Capital expenditures			Capital expenditures		
	Sustaining capital (i)	Project execution	Depreciation, depletion and amortization	Sustaining capital (i)	Project execution	Depreciation, depletion and amortization
Ferrous minerals	497	200	442	583	136	408
Base metals	341	81	325	325	113	227
Other (ii)	17	94	8	6	36	14
<b>Total</b>	<b>855</b>	<b>375</b>	<b>775</b>	<b>914</b>	<b>285</b>	<b>649</b>

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	Nine-month period ended September 30,					
	2022			2021		
	Capital expenditures			Capital expenditures		
	Sustaining capital (i)	Project execution	Depreciation, depletion and amortization	Sustaining capital (i)	Project execution	Depreciation, depletion and amortization
Ferrous minerals	1,473	581	1,355	1,639	331	1,246
Base metals	954	238	880	973	250	911
Other (ii)	71	342	36	23	66	55
<b>Total</b>	<b>2,498</b>	<b>1,161</b>	<b>2,271</b>	<b>2,635</b>	<b>647</b>	<b>2,212</b>

(i) According to the Company's remuneration policy, the sustaining capital investments are deducted from the 30% of the adjusted EBITDA. The calculation also considers the current investment of discontinued coal operations, which was US\$38 for the nine-month period ended September 30, 2022 (2021: US\$114).

(ii) The sustaining capital investments related to the Midwestern System were reclassified from "ferrous minerals" to "other" for the three and nine-month periods ended September 30, 2021 in the amounts of US\$5 and US\$10, respectively. Depreciation, depletion and amortization were reclassified for the same periods in the amounts of US\$4 and US\$18, respectively.

### c) Assets by geographic area

	September 30, 2022				December 31, 2021			
	Investments in associates and joint ventures	Intangible	Property, plant and equipment	Total	Investments in associates and joint ventures	Intangible	Property, plant and equipment	Total
Brazil	1,795	7,525	25,907	35,227	1,730	7,050	23,793	32,573
Canada	-	1,817	10,748	12,565	-	1,958	12,441	14,399
Americas, except Brazil and Canada	-	-	4	4	-	-	3	3
Europe	-	-	752	752	-	-	739	739
Indonesia	-	1	2,696	2,697	-	1	2,723	2,724
Asia, except Indonesia and China	-	-	794	794	21	-	874	895
China	-	1	19	20	-	2	21	23
Oman	-	-	1,276	1,276	-	-	1,337	1,337
<b>Total</b>	<b>1,795</b>	<b>9,344</b>	<b>42,196</b>	<b>53,335</b>	<b>1,751</b>	<b>9,011</b>	<b>41,931</b>	<b>52,693</b>

### d) Net operating revenue by geographic area

The sales revenue from Ferrous minerals for the three and nine-month periods ended September 30, 2022, decreased from prior periods mainly due to the decline of 27% in the average realized price of iron ore for both periods, following the decrease in the international price of this product.

	Three-month period ended September 30, 2022			
	Ferrous minerals	Base metals	Other	Total
Americas, except United States and Brazil	127	140	-	267
United States of America	102	321	-	423
Germany	91	286	-	377
Europe, except Germany	318	665	-	983
Middle East, Africa, and Oceania	629	10	-	639
Japan	689	168	-	857
China	4,337	303	-	4,640
Asia, except Japan and China	653	132	-	785
Brazil	881	17	60	958
<b>Net operating revenue</b>	<b>7,827</b>	<b>2,042</b>	<b>60</b>	<b>9,929</b>

	Three-month period ended September 30, 2021			
	Ferrous minerals	Base metals	Other (i)	Total
Americas, except United States and Brazil	201	80	27	308
United States of America	71	274	-	345
Germany	176	174	-	350
Europe, except Germany	546	430	-	976
Middle East, Africa, and Oceania	553	5	-	558
Japan	1,293	143	-	1,436
China	5,361	241	-	5,602
Asia, except Japan and China	953	220	-	1,173
Brazil	1,412	7	163	1,582
<b>Net operating revenue</b>	<b>10,566</b>	<b>1,574</b>	<b>190</b>	<b>12,330</b>

(i) Includes the reclassification of the revenues of Midwestern System in the amount of US\$112.

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	Nine-month period ended September 30, 2022			
	Ferrous minerals	Base metals	Other (i)	Total
Americas, except United States and Brazil	393	417	125	935
United States of America	176	1,034	-	1,210
Germany	312	888	-	1,200
Europe, except Germany	1,460	1,588	-	3,048
Middle East, Africa, and Oceania	1,779	19	26	1,824
Japan	2,171	561	-	2,732
China	14,338	793	-	15,131
Asia, except Japan and China	1,963	500	47	2,510
Brazil	2,994	49	265	3,308
<b>Net operating revenue</b>	<b>25,586</b>	<b>5,849</b>	<b>463</b>	<b>31,898</b>

	Nine-month period ended September 30, 2021			
	Ferrous minerals	Base metals	Other (i)	Total
Americas, except United States and Brazil	578	304	121	1,003
United States of America	330	847	-	1,177
Germany	499	1,103	-	1,602
Europe, except Germany	2,125	1,717	-	3,842
Middle East, Africa, and Oceania	1,496	12	-	1,508
Japan	2,763	358	-	3,121
China	20,819	665	-	21,484
Asia, except Japan and China	2,722	693	-	3,415
Brazil	3,823	43	379	4,245
<b>Net operating revenue</b>	<b>35,155</b>	<b>5,742</b>	<b>500</b>	<b>41,397</b>

(i) Includes the reclassification of the revenues of Midwestern System in the amount of US\$231 for the nine-month period ended September 30, 2022 (US\$325 for the nine-month period ended September 30, 2021).

## 5. Costs and expenses by nature

### a) Cost of goods sold, and services rendered

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
Personnel	454	353	1,292	1,163
Materials and services (i)	958	700	2,492	2,057
Fuel oil and gas (i)	497	246	1,134	671
Maintenance	755	698	2,188	2,071
Royalties	245	395	733	998
Energy	188	160	520	460
Acquisition of products	763	634	1,898	1,668
Depreciation, depletion and amortization	752	603	2,174	2,074
Freight	1,315	1,176	3,317	2,949
Other	374	507	1,125	1,124
<b>Total</b>	<b>6,301</b>	<b>5,472</b>	<b>16,873</b>	<b>15,235</b>
Cost of goods sold	6,150	5,312	16,439	14,799
Cost of services rendered	151	160	434	436
<b>Total</b>	<b>6,301</b>	<b>5,472</b>	<b>16,873</b>	<b>15,235</b>

(i) The increase in costs is mainly due to higher fuel prices and inflation of other inputs and services during the three and nine-month periods ended September 30, 2022.

### b) Selling and administrative expenses

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
Selling	16	24	59	65
Personnel	42	29	140	128
Services	28	29	80	68
Depreciation and amortization	9	11	32	30
Other	24	21	56	59
<b>Total</b>	<b>119</b>	<b>114</b>	<b>367</b>	<b>350</b>

### c) Other operating expenses, net

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
Asset retirement obligations	-	-	40	-
Provision for litigations (note 25)	32	23	96	67
Profit sharing program	26	30	93	105
Other	(7)	(22)	93	(51)
<b>Total</b>	<b>51</b>	<b>31</b>	<b>322</b>	<b>121</b>

The breakdown of Research and Development expenses by operating segment is presented in note 4 (a).

## 6. Financial results

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
<b>Financial income</b>				
Short-term investments	119	70	369	138
Other	22	20	59	86
	<b>141</b>	<b>90</b>	<b>428</b>	<b>224</b>
<b>Financial expenses</b>				
Loans and borrowings gross interest	(140)	(156)	(463)	(504)
Capitalized loans and borrowing costs	9	14	40	44
Interest on REFIS	(42)	(17)	(113)	(34)
Interest on lease liabilities (note 20d)	(15)	(14)	(47)	(47)
Bond premium repurchase (note 20d)	-	-	(113)	(63)
Other	(33)	(67)	(192)	(247)
	<b>(221)</b>	<b>(240)</b>	<b>(888)</b>	<b>(851)</b>
<b>Other financial items, net</b>				
Net foreign exchange gains (losses)	201	372	(151)	323
Participative stockholders' debentures (note 19) (i)	470	152	758	(1,107)
Financial guarantees (i)	-	(34)	479	330
Derivative financial instruments (note 17)	190	(458)	781	(41)
Reclassification of cumulative translation adjustments to the income statement (notes 13 and 14)	1,608	10	1,608	1,128
Indexation losses, net	(42)	(242)	(89)	(45)
	<b>2,427</b>	<b>(200)</b>	<b>3,386</b>	<b>588</b>
<b>Total</b>	<b>2,347</b>	<b>(350)</b>	<b>2,926</b>	<b>(39)</b>

(i) These lines were reclassified from the prior period in order to present "Financial expenses" and "Other financial items, net" in similar line items from period to period.

### a) Financial guarantees

As of September 30, 2022, the total guarantees granted by the Company (within the limit of its direct or indirect interest) to certain associates and joint ventures totaled US\$1,491 (December 31, 2021: US\$1,513). The fair value of these financial guarantees in the amount of US\$101 (December 31, 2021: US\$542) is recorded as "Other non-current liabilities".



## 7. Taxes

### a) Deferred income tax assets and liabilities

	Assets	Liabilities	Deferred taxes, net
<b>Balance at December 31, 2021</b>	<b>11,441</b>	<b>1,881</b>	<b>9,560</b>
Tax effect in the income statement	(1,881)	(23)	(1,858)
Translation adjustment	375	(100)	475
Other comprehensive income	74	62	12
Transfers between assets and liabilities	(184)	(184)	-
Sale of California Steel Industries (note 14)	-	(28)	28
<b>Balance at September 30, 2022</b>	<b>9,825</b>	<b>1,608</b>	<b>8,217</b>

  

	Assets	Liabilities	Deferred taxes, net
<b>Balance at December 31, 2020</b>	<b>10,335</b>	<b>1,770</b>	<b>8,565</b>
Tax effect in the income statement	812	(24)	836
Transfers between assets and liabilities	7	7	-
Translation adjustment	(452)	(4)	(448)
Other comprehensive income	(121)	179	(300)
Tax loss carryforward from coal operations (note 14)	821	-	821
<b>Balance at September 30, 2021</b>	<b>10,581</b>	<b>1,928</b>	<b>8,653</b>

### b) Income tax reconciliation – Income statement

Income tax expense is recognized based on the estimate of the weighted average effective tax rate expected for the full year, adjusted for the tax effect of certain items that are recognized in full on the interim tax calculation. Therefore, the effective tax rate in the interim financial statements may differ from management's estimate of the effective tax rate for the year.

The total amount presented as income taxes in the income statement is reconciled to the statutory rate, as follows:

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
<b>Income before income taxes</b>	<b>5,248</b>	<b>5,967</b>	<b>16,873</b>	<b>23,781</b>
<b>Income taxes at statutory rate – 34%</b>	<b>(1,784)</b>	<b>(2,029)</b>	<b>(5,736)</b>	<b>(8,086)</b>
<b>Adjustments that affect the taxes basis:</b>				
Tax incentives	479	971	1,538	2,589
Equity results	28	68	58	103
Monetary exchange variation on tax losses carryforward	(56)	120	(500)	81
Other (i)	529	409	834	969
<b>Income taxes</b>	<b>(804)</b>	<b>(461)</b>	<b>(3,806)</b>	<b>(4,344)</b>

(i) Refers mainly to the reclassifications of accumulated translation adjustments to income for the periods presented (notes 13 and 14).

### c) Income taxes - Settlement program ("REFIS")

	September 30, 2022	December 31, 2021
Current liabilities	351	324
Non-current liabilities	1,861	1,964
<b>REFIS liabilities</b>	<b>2,212</b>	<b>2,288</b>

  

SELIC rate	13.75%	9.25%
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It mainly relates to the settlement program of claims regarding the collection of income tax and social contribution on equity gains of foreign subsidiaries and affiliates from 2003 to 2012. This amount bears SELIC interest rate (Special System for Settlement and Custody) and will be paid in monthly installments until October 2028.

### d) Uncertain tax positions

There have been no relevant developments on matters related to the uncertain tax positions since the December 31, 2021 financial statements.

## Notes to the Interim Financial Statements

Expressed in millions of United States dollar, unless otherwise stated



### e) Recoverable and payable taxes

	September 30, 2022			December 31, 2021		
	Current assets	Non-current assets	Current liabilities	Current assets	Non-current assets	Current liabilities
Value-added tax	280	-	29	217	11	162
Brazilian federal contributions	452	677	53	520	511	12
Income taxes	115	437	82	113	413	1,861
Financial compensation for the exploration of mineral resources - CFEM	-	-	65	-	-	59
Other	11	-	74	12	-	83
<b>Total</b>	<b>858</b>	<b>1,114</b>	<b>303</b>	<b>862</b>	<b>935</b>	<b>2,177</b>

### 8. Basic and diluted earnings (loss) per share

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
<b>Net income attributable to Vale's stockholders:</b>				
Net income from continuing operations	4,455	5,477	13,004	19,384
Net income (loss) from discontinued operations	-	(1,591)	2,060	(2,366)
	<b>4,455</b>	<b>3,886</b>	<b>15,064</b>	<b>17,018</b>
<b>In thousands of shares</b>				
Weighted average number of common shares outstanding	4,549,205	5,080,890	4,674,248	5,065,750
Weighted average number of common shares outstanding and potential ordinary shares	4,553,843	5,085,314	4,678,886	5,070,174
<b>Basic and diluted earnings per share from continuing operations:</b>				
Common share (US\$)	0.98	1.08	2.78	3.83
<b>Basic and diluted earnings (loss) per share from discontinued operations:</b>				
Common share (US\$)	-	(0.31)	0.44	(0.47)
<b>Basic and diluted earnings per share:</b>				
Common share (US\$)	0.98	0.76	3.22	3.36

### 9. Accounts receivable

	September 30, 2022	December 31, 2021
<b>Receivables from contracts with customers</b>		
Related parties (note 28)	135	109
Third parties		
Ferrous minerals	1,421	3,023
Base metals	611	668
Other	22	162
<b>Accounts receivable</b>	<b>2,189</b>	<b>3,962</b>
Expected credit loss	(39)	(48)
<b>Accounts receivable, net</b>	<b>2,150</b>	<b>3,914</b>

No customer individually represented 10% or more of the Company's accounts receivable or revenues for the periods presented in these interim financial statements.

**Provisionally priced commodities sales** – The commodity price risk arises from volatility of iron ore, nickel and copper prices. The Company is mostly exposed to the fluctuations in the iron ore and copper price (note 17). The selling price of these products can be measured reliably at each period since the price is quoted in an active market.

The sensitivity of the Company's risk on final settlement of provisionally priced accounts receivables are presented below:

	Thousand metric tons	September 30, 2022		
		Provisional price (US\$/ton)	Change	Effect on revenue
Iron ore	17,271	91.9	+/- 10%	+/- 159
Iron ore pellets	76	136.2	+/- 10%	+/- 1
Copper	81	9,652.0	+/- 10%	+/- 79

## 10. Inventories

	September 30, 2022	December 31, 2021
Finished products	3,489	2,795
Work in progress	862	820
Consumable inventory	1,022	857
Allowance to net realizable value	(105)	(95)
<b>Total</b>	<b>5,268</b>	<b>4,377</b>

Finished and work in progress products inventories by segments are presented in note 4(b) and the cost of goods sold is presented in note 5(a).

## 11. Suppliers and contractors

	September 30, 2022	December 31, 2021
Third parties - Brazil	2,258	1,766
Third parties - Abroad	2,120	1,618
Related parties (note 28)	357	91
<b>Total</b>	<b>4,735</b>	<b>3,475</b>

## 12. Other financial assets and liabilities

	Current		Non-current	
	September 30, 2022	December 31, 2021	September 30, 2022	December 31, 2021
<b>Other financial assets</b>				
Restricted cash	-	-	78	117
Derivative financial instruments (note 17a)	152	111	152	20
Investments in equity securities	-	-	6	6
	<b>152</b>	<b>111</b>	<b>236</b>	<b>143</b>
<b>Other financial liabilities</b>				
Derivative financial instruments (note 17a)	103	243	271	592
Other financial liabilities - Related parties (note 28)	136	393	-	-
Financial guarantees provided (note 6a) (i)	-	-	101	542
Liabilities related to the concession grant	693	760	1,576	1,437
Contract liability	534	566	-	-
	<b>1,466</b>	<b>1,962</b>	<b>1,948</b>	<b>2,571</b>

(i) In July 2022, the Company signed a binding agreement with ArcelorMittal for the sale of CSP. At the closing, CSP's debt will be settled and the financial liability related to the guarantee granted will be derecognised by Vale.

### a) Liabilities related to the concession grant

On April 14, 2022, the Company prepaid US\$168 of its concession grant obligation related to the Estrada de Ferro Carajás ("EFC") as approved by the Board of Directors on October 28, 2021. The outstanding balance will be settled in quarterly installments until 2057.

	Liability		Discount rate	
	September 30, 2022	December 31, 2021	September 30, 2022	December 31, 2021
Concession grant	725	586	11.04%	11.04%
Midwestern Integration Railway ("FICO")	1,176	1,206	5.69%	5.29%
Infrastructure program	342	343	5.65%	5.43%
West-East Integration Railway ("FIOL")	26	62	8.72%	5.81%
<b>Total</b>	<b>2,269</b>	<b>2,197</b>		

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Expressed in millions of United States dollar, unless otherwise stated



### 13. Investments in subsidiaries, associates and joint ventures

			Investments in associates and joint ventures		Equity results in the income statement				Dividends received			
					Three-month period ended September 30,		Nine-month period ended September 30,		Three-month period ended September 30,		Nine-month period ended September 30,	
Associates and joint ventures	% ownership	% voting capital	September 30, 2022	December 31, 2021	2022	2021	2022	2021	2022	2021	2022	2021
Ferrous minerals												
Baovale Mineração S.A.	50.00	50.00	23	21	1	1	2	4	1	-	1	-
Companhia Coreano-Brasileira de Pelotização	50.00	50.00	86	51	15	15	37	30	-	-	10	2
Companhia Hispano-Brasileira de Pelotização	50.89	50.89	44	38	11	1	11	1	4	-	5	7
Companhia Ítalo-Brasileira de Pelotização	50.90	51.00	68	48	11	16	24	29	-	-	19	6
Companhia Nipo-Brasileira de Pelotização	51.00	51.11	146	129	11	15	33	28	-	-	41	7
MRS Logística S.A.	48.16	46.75	480	418	22	33	52	69	-	-	-	-
Samarco Mineração S.A. (note 22)	50.00	50.00	-	-	-	-	-	-	-	-	-	-
VLI S.A.	29.60	29.60	411	408	9	(23)	(11)	(31)	-	-	-	-
			1,258	1,113	80	58	148	130	5	-	76	22
Base metals												
Korea Nickel Corporation	25.00	25.00	-	17	-	-	3	-	-	-	-	-
			-	17	-	-	3	-	-	-	-	-
Other												
Aliança Geração de Energia S.A.	55.00	55.00	379	367	9	41	25	58	23	5	23	26
Aliança Norte Energia Participações S.A.	51.00	51.00	104	105	(2)	-	(5)	(3)	-	-	-	-
California Steel Industries, Inc. ("CSI") (note 14)	50.00	50.00	-	-	-	104	-	165	-	-	65	-
Companhia Siderúrgica do Pecém ("CSP") (note 14)	50.00	50.00	-	99	-	-	-	(42)	-	-	-	-
Mineração Rio do Norte S.A.	40.00	40.00	-	-	-	(3)	-	(5)	-	-	-	-
Other	-	-	54	50	-	(2)	3	-	-	-	-	-
			537	621	7	140	23	173	23	5	88	26
Total			1,795	1,751	87	198	174	303	28	5	164	48

## a) Changes in the period

	2022	2021
Balance at January 1,	1,751	2,031
Translation adjustment	51	(82)
Equity results	174	303
Impairment of CSP	(111)	-
Dividends declared	(52)	(132)
Other	(18)	5
Balance at September 30,	1,795	2,125

**Capital reduction in a foreign subsidiary** – In August 2022, the Company approved a capital reduction in the amount of US\$1,500 of Vale International S.A. (“VISA”), a wholly-owned foreign subsidiary, leading to a reduction in the absolute value of the investment held by the Parent Company. Therefore, the return of capital received in September 2022 was determined as a partial disposal and, in accordance with the requirements of IAS 21, the exchange differences recorded in the stockholders’ equity were reclassified to the income statement in the same proportion as the reduction in the net investment held in VISA, leading to a gain of US\$1,543 presented as “Other financial items, net” (note 6). The remaining balance of cumulative translation adjustments of VISA represents US\$4,487 as of September 30, 2022.

## 14. Acquisitions and divestitures

	Nine-month period ended September 30, 2022				
	Cumulative translation adjustments			Result of the transaction	
	Other financial items, net	Equity results and other results in associates and joint ventures	Total recycling from OCI	Impairment reversal (impairment) of non-current assets	Equity results and other results in associates and joint ventures
Midwestern System	37	-	37	1,121	-
California Steel Industries	-	150	150	-	142
Companhia Siderúrgica do Pecém (i)	-	-	-	-	(135)
Other	28	-	28	3	(9)
	65	150	215	1,124	(2)
Discontinued operations (Coal)	3,072	-	3,072	(589)	-
	3,137	150	3,287	535	(2)

(i) Includes impairment of the investment in the amount of US\$111 and a provision for accounts receivable with CSP in the amount of US\$24.

	Nine-month period ended September 30, 2021				
	Cumulative translation adjustments			Result of the transaction	
	Other financial items, net	Equity results and other results in associates and joint ventures	Total recycling from OCI	Impairment of non-current assets	Equity results and other results in associates and joint ventures
Midwestern System	-	-	-	-	-
Vale Nouvelle-Calédonie S.A.S.	1,132	-	1,132	(98)	-
Vale Manganês	-	-	-	(28)	-
Other	(4)	-	(4)	-	(70)
	1,128	-	1,128	(126)	(70)
Discontinued operations (Coal)	424	-	424	(3,186)	-
	1,552	-	1,552	(3,312)	(70)

**Midwestern System** - During the first quarter of 2022, the Company classified the assets and liabilities related to the Midwestern System as held for sale due to the negotiations with interested parties in Vale’s iron ore, manganese and logistics assets in the Midwestern System, through its equity interests in Mineração Corumbaense Reunida S.A., Mineração Mato Grosso S.A., International Iron Company, Inc. and Transbarge Navegación S.A. These negotiations resulted in the execution of a binding agreement with J&F Mineração Ltda. (“J&F”) for the sale of these assets, which was signed on April 6, 2022.

The carrying amount of those assets were fully impaired in past years and the Company had a liability related to take-or-pay logistics contracts in the amount of US\$932 that were deemed onerous contracts under the Company’s business model for the Midwestern System, which had negative reserves of US\$892 before reclassification to “Non-current assets and liabilities held for sale”.

These offers received during the sale process of the assets represented an objective evidence of impairment reversal and the remeasurement of the existing provision, which led to a gain of US\$1,121 recorded as "Impairment reversal (impairment and disposals) of non-current assets, net", of which US\$214 relates to the impairment reversal on the Property, plant and equipment and US\$916 is due to the remeasurement of the onerous contract liability, partially offset by losses in working capital adjustments at the closing of the transaction in the amount of US\$9.

On July 15, 2022, the transaction was completed and the Company received US\$153 and recorded a gain of US\$37, as the reclassification of the cumulative translation adjustments from the stockholders' equity to the income statement.

**California Steel Industries ("CSI")** - In December 2021, the Company entered into a binding agreement with Nucor Corporation ("Nucor") for the sale of its 50% interest in CSI for US\$437. In February 2022, the Company concluded the sale and recorded a gain of US\$292 for the nine-month period ended September 30, 2022, as "Equity results and other results in associates and joint ventures", of which US\$142 relates to a gain from the sale and US\$150 is due to the reclassification of the cumulative translation adjustments from the stockholders' equity to the income statement.

**Sale of Companhia Siderúrgica do Pecém ("CSP")** - In July 2022, the Company and the other shareholders of CSP signed a binding agreement with ArcelorMittal Brasil S.A. ("ArcelorMittal") for the sale of CSP for approximately US\$2,132. The completion of the transaction will be used in full for the prepayment of CSP's outstanding net debt of approximately US\$2,300, as the Company has already recognized an impairment loss of US\$135 for the nine-month period ended September 30, 2022. The Company does not expect any material impact at closing, which is expected to occur in the first quarter 2023, subject to customary regulatory approvals.

**Manganese ferroalloys operations in Minas Gerais** - In January 2022, the Company completed the sale of its ferroalloys operations in Barbacena and Ouro Preto and its manganese mining operations at Morro da Mina, in the state of Minas Gerais, to VDL Group ("VDL") for a total consideration of US\$40. As the Company had already adjusted the net assets to the fair value less cost of disposal, the closing did not result in an additional impact on the income statement for the nine-month period ended September 30, 2022 (2021: impairment of US\$28). As a result, the Company no longer has manganese ferroalloys operations.

**Vale Nouvelle-Calédonie S.A.S. ("VNC")** - In December 2020, the Company signed a binding put option agreement to sell its interest in VNC for an immaterial consideration to Prony Resources consortium. With the final agreement signed in March 2021, the Company recorded a loss in the amount of US\$98, presented as "Impairment reversal (impairment and disposals) of non-current assets, net" in the income statement for the nine-month period ended September 30, 2021. In the same period, the Company also recorded a gain of US\$1,132 due to the cumulative translation adjustments reclassification from the stockholders' equity to the income statement as "Other financial items, net".

**Discontinued operations (Coal)** - In June 2021, in preparation for a sale of the coal operation, in connection with the sustainable strategic mining agenda, the Company carried out a corporate reorganization by acquiring the interests held by Mitsui in the coal assets, which consist of Moatize mine and the Nacala Logistics Corridor ("NLC"). Following the acquisition of Mitsui's stakes, and therefore, the simplification of the governance, the Company started the process of divesting its participation in the coal business.

In December 2021, the Company entered into a binding agreement with Vulcan Resources (formerly known as Vulcan Minerals - "Vulcan") for the sale of these assets. Under the sale agreement Vulcan has committed to pay the gross amount of US\$270, in addition of a 10-year royalty agreement subject to certain mine production and coal price conditions and so, due to the nature and uncertainties related to the measurement of these royalties, gains will be recognized as incurred.

Therefore, in 2021 the Company adjusted the net assets of the coal business to the fair value less costs of disposal, resulting in impairment losses, and started presenting the coal segment as a discontinued operation starting from the year ended December 31, 2021.

On April 25, 2022, the transaction was completed and the Company recorded a net income from discontinued operations of US\$2,060 for the nine-month period ended September 30, 2022, which is mainly driven by the reclassification of the cumulative translation adjustments of US\$3,072, from the stockholders' equity to the income statement, as required by IAS 21 - *The Effects of Changes in Foreign Exchange Rates*, partially offset by the derecognition of noncontrolling interest of US\$585 due to the deconsolidation of the coal assets. Additionally, until the closing of the transaction, the Company recorded losses of US\$589 due to the impairment of assets acquired in the period and working capital adjustments. These effects are presented below:

(a) Net income and cash flows from discontinued operations

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
<b>Net income from discontinued operations</b>				
Net operating revenue	-	352	448	605
Cost of goods sold and services rendered	-	(364)	(264)	(1,033)
Operating expenses	-	(7)	(13)	(9)
Impairment and disposals of non-current assets, net	-	(2,327)	(589)	(3,186)
<b>Operating loss</b>	-	<b>(2,346)</b>	<b>(418)</b>	<b>(3,623)</b>
Cumulative translation adjustments (i)	-	-	3,072	424
Other financial results, net	-	(23)	(7)	(61)
Derecognition of noncontrolling interest	-	-	(585)	-
Equity results in associates and joint ventures	-	-	-	(26)
<b>Net income (loss) before income taxes</b>	-	<b>(2,369)</b>	<b>2,062</b>	<b>(3,286)</b>
Income taxes	-	821	(2)	821
<b>Net income (loss) from discontinued operations</b>	-	<b>(1,548)</b>	<b>2,060</b>	<b>(2,465)</b>
Net income (loss) attributable to noncontrolling interests	-	43	-	(99)
<b>Net income (loss) attributable to Vale's stockholders</b>	-	<b>(1,591)</b>	<b>2,060</b>	<b>(2,366)</b>

(i) In 2021, the Company assessed that its Australian subsidiaries (part of the coal business), which were no longer operational, were considered "abandoned" under IAS 21 and, therefore, the Company recognized a gain related to the cumulative translation adjustments in the amount of US\$424, which was reclassified to the net income for the nine-month period ended September 30, 2021.

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
<b>Cash flow from discontinued operations</b>				
<b>Operating activities</b>				
Net income (loss) before income taxes	-	(2,369)	2,062	(3,286)
<b>Adjustments:</b>				
Equity results in associates and joint ventures	-	-	-	26
Impairment and disposals of non-current assets, net	-	2,327	589	3,186
Derecognition of noncontrolling interest	-	-	585	-
Financial results, net	-	23	(3,065)	(363)
Decrease in assets and liabilities	-	74	(130)	31
<b>Net cash generated (used) by operating activities</b>	-	<b>55</b>	<b>41</b>	<b>(406)</b>
<b>Investing activities</b>				
Additions to property, plant and equipment	-	(49)	(38)	(114)
Acquisition of NLC, net of cash	-	-	-	(2,345)
Disposal of coal, net of cash	-	-	(65)	-
Other	-	-	-	71
<b>Net cash used in investing activities</b>	-	<b>(49)</b>	<b>(103)</b>	<b>(2,388)</b>
<b>Financing activities</b>				
Payments	-	(3)	(11)	(10)
<b>Net cash used in financing activities</b>	-	<b>(3)</b>	<b>(11)</b>	<b>(10)</b>
<b>Net cash generated (used) by discontinued operations</b>	-	<b>3</b>	<b>(73)</b>	<b>(2,804)</b>

## 15. Intangible

	Goodwill	Concessions	Software	Research and development project and patents	Total
<b>Balance at December 31, 2021</b>	<b>3,208</b>	<b>5,223</b>	<b>86</b>	<b>494</b>	<b>9,011</b>
Additions	-	443	25	-	468
Disposals	-	(12)	-	-	(12)
Amortization	-	(175)	(32)	-	(207)
Translation adjustment	(93)	159	2	16	84
<b>Balance at September 30, 2022</b>	<b>3,115</b>	<b>5,638</b>	<b>81</b>	<b>510</b>	<b>9,344</b>
Cost	3,115	6,920	536	510	11,081
Accumulated amortization	-	(1,282)	(455)	-	(1,737)
<b>Balance at September 30, 2022</b>	<b>3,115</b>	<b>5,638</b>	<b>81</b>	<b>510</b>	<b>9,344</b>

	Goodwill	Concessions	Software	Research and development project and patents	Total
<b>Balance at December 31, 2020</b>	<b>3,298</b>	<b>5,391</b>	<b>76</b>	<b>531</b>	<b>9,296</b>
Additions	-	121	22	-	143
Disposals	-	(4)	-	-	(4)
Amortization	-	(187)	(23)	-	(210)
Acquisition of NLC (note 14)	-	1,428	-	-	1,428
Impairment (i)	-	(1,422)	-	-	(1,422)
Translation adjustment	(50)	(242)	(2)	(24)	(318)
<b>Balance at September 30, 2021</b>	<b>3,248</b>	<b>5,085</b>	<b>73</b>	<b>507</b>	<b>8,913</b>
Cost	3,248	7,486	741	507	11,982
Accumulated amortization	-	(2,401)	(668)	-	(3,069)
<b>Balance at September 30, 2021</b>	<b>3,248</b>	<b>5,085</b>	<b>73</b>	<b>507</b>	<b>8,913</b>

(i) The Company recognized an impairment loss related to coal assets incorporated in the acquisition of NLC in the amount of US\$1,422 for the nine-month period ended September 30, 2021.

## 16. Property, plant and equipment

	Building and land	Facilities	Equipment	Mineral properties	Railway equipment	Right of use assets	Others	Constructions in progress	Total
<b>Balance at December 31, 2021</b>	<b>8,137</b>	<b>7,232</b>	<b>4,743</b>	<b>7,742</b>	<b>2,334</b>	<b>1,537</b>	<b>2,484</b>	<b>7,722</b>	<b>41,931</b>
Additions (i)	-	-	-	-	-	42	-	3,690	3,732
Disposals (ii)	(18)	(10)	(5)	-	(7)	-	(2)	(60)	(102)
Asset retirement obligation (note 23b)	-	-	-	(1,091)	-	-	-	-	(1,091)
Depreciation, depletion and amortization	(306)	(360)	(525)	(322)	(121)	(138)	(223)	-	(1,995)
Impairment reversal, net (note 14)	56	34	64	39	-	-	21	-	214
Transfer to asset held for sale - Midwestern System (note 14)	(56)	(34)	(64)	(39)	-	-	(21)	-	(214)
Translation adjustment	69	94	6	(281)	74	9	(27)	(223)	(279)
Transfers	333	449	483	400	119	-	306	(2,090)	-
<b>Balance at September 30, 2022</b>	<b>8,215</b>	<b>7,405</b>	<b>4,702</b>	<b>6,448</b>	<b>2,399</b>	<b>1,450</b>	<b>2,538</b>	<b>9,039</b>	<b>42,196</b>
Cost	15,090	12,039	11,086	15,445	3,934	2,058	5,647	9,039	74,338
Accumulated depreciation	(6,875)	(4,634)	(6,384)	(8,997)	(1,535)	(608)	(3,109)	-	(32,142)
<b>Balance at September 30, 2022</b>	<b>8,215</b>	<b>7,405</b>	<b>4,702</b>	<b>6,448</b>	<b>2,399</b>	<b>1,450</b>	<b>2,538</b>	<b>9,039</b>	<b>42,196</b>



## Notes to the Interim Financial Statements

Expressed in millions of United States dollar, unless otherwise stated



	Building and land	Facilities	Equipment	Mineral properties	Railway equipment	Right of use assets	Others	Constructions in progress	Total
<b>Balance at December 31, 2020</b>	<b>8,591</b>	<b>7,591</b>	<b>4,933</b>	<b>8,054</b>	<b>2,523</b>	<b>1,563</b>	<b>2,495</b>	<b>5,398</b>	<b>41,148</b>
Additions (i)	-	-	-	-	-	56	-	3,502	3,558
Disposals (ii)	(3)	(26)	(60)	-	(5)	-	-	(44)	(138)
Asset retirement obligation	-	-	-	(442)	-	-	-	-	(442)
Depreciation, depletion and amortization	(332)	(361)	(495)	(319)	(129)	(130)	(193)	-	(1,959)
Acquisition of NLC (note 14)	235	140	102	-	318	33	2	92	922
Impairment (iii)	(231)	(114)	(85)	-	(313)	(33)	(2)	(233)	(1,011)
Translation adjustment	(263)	(276)	(71)	(64)	(110)	(17)	(63)	(116)	(980)
Transfers	226	370	521	200	84	-	208	(1,609)	-
Transfer to net assets held for sale	(3)	(2)	(3)	(2)	-	-	(1)	-	(11)
<b>Balance at September 30, 2021</b>	<b>8,220</b>	<b>7,322</b>	<b>4,842</b>	<b>7,427</b>	<b>2,368</b>	<b>1,472</b>	<b>2,446</b>	<b>6,990</b>	<b>41,087</b>
Cost	15,228	12,074	10,905	16,674	3,747	1,951	5,463	6,990	73,032
Accumulated depreciation	(7,008)	(4,752)	(6,063)	(9,247)	(1,379)	(479)	(3,017)	-	(31,945)
<b>Balance at September 30, 2021</b>	<b>8,220</b>	<b>7,322</b>	<b>4,842</b>	<b>7,427</b>	<b>2,368</b>	<b>1,472</b>	<b>2,446</b>	<b>6,990</b>	<b>41,087</b>

(i) Includes capitalized interest.

(ii) The net result from the disposal of assets recorded as "Impairment reversal (impairment and disposals) of non-current assets, net" was US\$174 (2021: US\$95).

(iii) The Company recognized an impairment loss of US\$882 related to NLC assets for the nine-month period ended September 30, 2021.

### Right-of-use assets (leases)

	December 31, 2021	Additions and contract modifications	Depreciation	Translation adjustment	September 30, 2022
Ports	680	1	(39)	4	646
Vessels	492	-	(33)	(2)	457
Pelletizing plants	215	15	(34)	8	204
Properties	84	15	(21)	4	82
Energy plants	49	-	(5)	(4)	40
Mining equipment	17	11	(6)	(1)	21
<b>Total</b>	<b>1,537</b>	<b>42</b>	<b>(138)</b>	<b>9</b>	<b>1,450</b>

Lease liabilities are presented in note 20.

## 17. Financial and capital risk management

### a) Effects of derivatives on the balance sheet

	September 30, 2022		December 31, 2021	
	Current	Non-current	Current	Non-current
<b>Foreign exchange and interest rate risk</b>				
CDI & TJLP vs. US\$ fixed and floating rate swap	2	5	-	-
IPCA swap	-	-	41	-
Pre-dollar swap and forward transactions	61	116	20	9
Libor swap	6	5	1	11
	<b>69</b>	<b>126</b>	<b>62</b>	<b>20</b>
<b>Commodities price risk</b>				
Base metals products	67	19	28	-
Gasoil, Brent and freight	16	7	8	-
	<b>83</b>	<b>26</b>	<b>36</b>	-
Other	-	-	13	-
	<b>-</b>	<b>-</b>	<b>13</b>	-
<b>Total</b>	<b>152</b>	<b>152</b>	<b>111</b>	<b>20</b>

## Notes to the Interim Financial Statements

Expressed in millions of United States dollar, unless otherwise stated



	Liabilities			
	September 30, 2022		December 31, 2021	
	Current	Non-current	Current	Non-current
<b>Foreign exchange and interest rate risk</b>				
CDI & TJLP vs. US\$ fixed and floating rate swap	47	174	151	440
IPCA swap	6	70	6	113
Pre-dollar swap and forward transactions	10	7	57	38
Libor swap	-	-	-	1
	<b>63</b>	<b>251</b>	<b>214</b>	<b>592</b>
<b>Commodities price risk</b>				
Base metals products	13	-	27	-
Gasoil, Brent and freight	24	9	2	-
	<b>37</b>	<b>9</b>	<b>29</b>	<b>-</b>
Other	3	11	-	-
	<b>3</b>	<b>11</b>	<b>-</b>	<b>-</b>
<b>Total</b>	<b>103</b>	<b>271</b>	<b>243</b>	<b>592</b>

The balance of derivatives is presented in the balance sheet as “Other financial assets and liabilities” (note 12).

### b) Net exposure

	September 30, 2022	December 31, 2021
<b>Foreign exchange and interest rate risk</b>		
CDI & TJLP vs. US\$ fixed and floating rate swap	(214)	(591)
IPCA swap	(76)	(78)
Pre-dollar swap and forward transactions	160	(66)
Libor swap (i)	11	11
	<b>(119)</b>	<b>(724)</b>
<b>Commodities price risk</b>		
Base metals products	73	1
Gasoil, Brent and freight	(10)	6
	<b>63</b>	<b>7</b>
Other	(14)	13
	<b>(14)</b>	<b>13</b>
<b>Total</b>	<b>(70)</b>	<b>(704)</b>

(i) In March 2021, the UK Financial Conduct Authority (“FCA”), the financial regulator in the United Kingdom, announced the discontinuation of the LIBOR rate for all terms in pounds, euros, Swiss francs, yen and for terms of one week and two months in dollars at the end of December 2021 and the other terms at the end of June 2023. The Company has adopted market practices in its new agreements and is monitoring the transition of the agreements that are still subject to LIBOR exposure.

### c) Effects of derivatives on the income statement

	Gain (loss) recognized in the income statement			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
<b>Foreign exchange and interest rate risk</b>				
CDI & TJLP vs. US\$ fixed and floating rate swap	45	(194)	314	(142)
IPCA swap	(3)	(42)	63	27
Eurobonds swap	-	-	-	(28)
Pre-dollar swap and forward operations	188	(238)	386	(32)
Libor swap	2	2	44	9
	<b>232</b>	<b>(472)</b>	<b>807</b>	<b>(166)</b>
<b>Commodities price risk</b>				
Base metals products	-	-	9	(2)
Gasoil, Brent and freight	(32)	12	(7)	120
	<b>(32)</b>	<b>12</b>	<b>2</b>	<b>118</b>
Other	(10)	2	(28)	7
	<b>(10)</b>	<b>2</b>	<b>(28)</b>	<b>7</b>
<b>Total</b>	<b>190</b>	<b>(458)</b>	<b>781</b>	<b>(41)</b>

#### d) Effects of derivatives on the cash flows

	Financial settlement inflows (outflows)			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
<b>Foreign exchange and interest rate risk</b>				
CDI & TJLP vs. US\$ fixed and floating rate swap	(46)	(10)	(89)	(109)
IPCA swap	49	-	60	(18)
Eurobonds swap	-	-	-	(29)
Pre-dollar swap and forward operations	70	3	162	(74)
Libor and treasury swap	44	-	36	(1)
	<b>117</b>	<b>(7)</b>	<b>169</b>	<b>(231)</b>
<b>Commodities price risk</b>				
Base metals products	(16)	(16)	(194)	(24)
Gasoil, Brent and freight	(1)	62	8	154
Thermal and coking coal	-	(17)	-	(17)
	<b>(17)</b>	<b>29</b>	<b>(186)</b>	<b>113</b>
Other	-	-	(1)	1
<b>Total</b>	<b>100</b>	<b>22</b>	<b>(18)</b>	<b>(117)</b>

#### e) Hedge accounting

	Gain (loss) recognized in the other comprehensive income			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2022	2021	2022	2021
Net investment hedge	(47)	(127)	27	(85)
Cash flow hedge (Thermal coal)	-	(12)	-	(17)
Cash flow hedge (Nickel and Palladium)	40	22	48	1

#### Cash flow hedge (Nickel)

	Notional (ton)		Bought / Sold	Average strike (US\$/ton)	Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year	
	September 30, 2022	December 31, 2021			September 30, 2022	December 31, 2021	September 30, 2022	September 30, 2022	2022	2023
<b>Nickel Revenue Hedge Program</b>										
Forward	18,900	39,575	S	25,113	70	(26)	(212)	22	(11)	81
<b>Total</b>					<b>70</b>	<b>(26)</b>	<b>(212)</b>	<b>22</b>	<b>(11)</b>	<b>81</b>

In 2022, the Company renewed its hedge nickel program due to the high volatility of nickel prices linked to future cash flows forecast for the period. In this program, hedging operations were executed, through forward contracts, to protect a portion of the projected volume of sales at floating, highly probable realization prices, guaranteeing prices above the average unit cost of nickel production for the protected volumes. The contracts are traded on the London Metal Exchange or over-the-counter market and the hedged item's P&L is offset by the hedged item's P&L due to Nickel price variation.

#### Cash flow hedge (Palladium)

	Notional (t oz)		Bought / Sold	Average strike (US\$/t oz)	Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
	September 30, 2022	December 31, 2021			September 30, 2022	December 31, 2021	September 30, 2022	September 30, 2022	2022
<b>Palladium Revenue Hedge Program</b>									
Call Options	11,057	44,228	S	3,368	-	(1)	-	-	-
Put Options	11,057	44,228	B	2,436	3	26	10	1	3
<b>Total</b>					<b>3</b>	<b>25</b>	<b>10</b>	<b>1</b>	<b>3</b>

#### f) Protection programs for the R\$ denominated debt instruments and other liabilities

	Notional		Index	Average rate	Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year		
	September 30, 2022	December 31, 2021			September 30, 2022	December 31, 2021	September 30, 2022	September 30, 2022	2022	2023	2024+
<b>CDI vs. US\$ fixed rate swap</b>					(156)	(461)	(55)	28	(8)	(36)	(112)
Receivable	R\$ 6,636	R\$ 8,142	CDI	101.93%							
Payable	US\$ 1,540	US\$ 1,906	Fix	2.52%							
<b>TJLP vs. US\$ fixed rate swap</b>					(58)	(130)	(34)	4	(3)	(8)	(47)
Receivable	R\$ 879	R\$ 1,192	TJLP +	1.05%							
Payable	US\$ 221	US\$ 320	Fix	3.41%							
<b>R\$ fixed rate vs. US\$ fixed rate swap</b>					123	62	36	71	-	51	72
Receivable	R\$ 20,957	R\$ 5,730	Fix	5.22%							
Payable	US\$ 3,968	US\$ 1,084	Fix	-1.35%							
<b>IPCA vs. US\$ fixed rate swap</b>					(76)	(118)	9	6	(2)	(6)	(68)
Receivable	R\$ 1,348	R\$ 1,508	IPCA +	4.54%							
Payable	US\$ 333	US\$ 373	Fix	3.88%							
<b>IPCA vs. CDI swap</b>					-	40	51	-	-	-	-
Receivable	-	R\$ 769	IPCA +	-							
Payable	-	R\$ 1,350	CDI	-							
<b>Forward</b>	R\$ 4,395	R\$ 6,013	B	5.39	37	(4)	126	13	1	31	5

#### g) Protection program for Libor floating interest rate US\$ denominated debt

	Notional		Index	Average rate	Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year		
	September 30, 2022	December 31, 2021			September 30, 2022	December 31, 2021	September 30, 2022	September 30, 2022	2022	2023	2024+
<b>Libor vs. US\$ fixed rate swap</b>					11	11	44	1	2	7	2
Receivable	US\$ 150	US\$ 950	Libor	0.85%							
Payable	US\$ 150	US\$ 950	Fix	0.85%							

In August 2022, swap operations to convert interest rates indexed to the Libor to fixed rates were liquidated due to the settlement of a portion of the debt. The Company kept its swap strategy for remaining amount of US\$150 of debt indexed to the Libor.

#### h) Protection for treasury volatility related to tender offer transaction

	Notional		Index	Average rate	Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year
	September 30, 2022	December 31, 2021			September 30, 2022	December 31, 2021	September 30, 2022	September 30, 2022	2022
<b>Forwards</b>	-	-	-	-	-	-	(8)	-	-

To reduce the volatility of the premium to be paid to investors for the tender offer transaction issued on June 9, 2022, treasury lock transactions were implemented and already settled.

**i) Protection program for product prices and input costs**

	Notional				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year	
	September 30, 2022	December 31, 2021	Bought / Sold	Average strike (US\$/bbl)	September 30, 2022	December 31, 2021	September 30, 2022	September 30, 2022	2022	2023+
<b>Brent crude oil (bbl)</b>										
Call options	10,268,250	762,000	B	106	23	7	13	5	2	21
Put options	10,268,250	762,000	S	69	(28)	(2)	-	6	(8)	(20)
<b>Forward Freight Agreement (days)</b>										
Freight forwards	1,350	330	B	17,447	(5)	1	(2)	1	(3)	(2)

In 2022, the Company renewed its brent crude oil hedge through options contracts on Brent Crude Oil, for different portions of the exposure, in order to reduce the impact of fluctuations in fuel oil prices on the hiring and availability of maritime freight and, consequently, to reduce the Company's cash flow volatility. The derivative transactions were negotiated over-the-counter and the protected item is part of the costs linked to the price of fuel oil used on ships. The financial settlement inflows or outflows are offset by the protected items' losses or gains.

**j) Other derivatives, including embedded derivatives in contracts**

	Notional				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value	
	September 30, 2022	December 31, 2021	Bought / Sold	Average strike (US\$/bbl)	September 30, 2022	December 31, 2021	September 30, 2022	September 30, 2022	2022	2023+
<b>Option related to a Special Purpose Entity (i)</b>										
Call option	-	137,751,623	B	-	-	-	15	-	-	-
<b>Embedded derivative in natural gas purchase agreement</b>										
Call options	746,667	729,571	S	233	(14)	(1)	(1)	9	(14)	
<b>Fixed price sales protection</b>										
Nickel forwards	792	342	B	20,630	-	1	1	-	-	-
<b>Hedge program for products acquisition for resale</b>										
Nickel forwards	84	1,206	S	22,523	-	(1)	-	-	-	-

(i) In January 2019, the Company acquired a call option related to shares of certain special purpose entities, which are part of a wind farm located in state of Bahia, Brazil, which expired in July 2022 without exercising the option.

## k) Sensitivity analysis of derivative financial instruments

The following tables present the potential value of the instruments given hypothetical stress scenarios for the main market risk factors that impact the derivatives positions. The scenarios were defined as follows:

- Probable: the probable scenario was defined as the fair value of the derivative instruments as of September 30, 2022.
- Scenario I: fair value estimated considering a 25% deterioration in the associated risk variables.
- Scenario II: fair value estimated considering a 50% deterioration in the associated risk variables.

Instrument	Instrument's main risk events	Probable	Scenario I	Scenario II
<b>CDI vs. US\$ fixed rate swap</b>	R\$ depreciation	(156)	(521)	(885)
	US\$ interest rate inside Brazil decrease	(156)	(206)	(262)
	Brazilian interest rate increase	(156)	(193)	(230)
Protected item: R\$ denominated liabilities	R\$ depreciation	n.a.	-	-
<b>TJLP vs. US\$ fixed rate swap</b>	R\$ depreciation	(58)	(111)	(165)
	US\$ interest rate inside Brazil decrease	(58)	(63)	(69)
	Brazilian interest rate increase	(58)	(67)	(76)
	TJLP interest rate decrease	(58)	(64)	(71)
Protected item: R\$ denominated debt	R\$ depreciation	n.a.	-	-
<b>R\$ fixed rate vs. US\$ fixed rate swap</b>	R\$ depreciation	123	(775)	(1,673)
	US\$ interest rate inside Brazil decrease	123	37	(54)
	Brazilian interest rate increase	123	(55)	(218)
Protected item: R\$ denominated debt	R\$ depreciation	n.a.	-	-
<b>IPCA swap vs. US\$ fixed rate swap</b>	R\$ depreciation	(76)	(157)	(238)
	US\$ interest rate inside Brazil decrease	(76)	(87)	(99)
	Brazilian interest rate increase	(76)	(92)	(107)
	IPCA index decrease	(76)	(84)	(92)
Protected item: R\$ denominated debt	R\$ depreciation	n.a.	-	-
<b>US\$ floating rate vs. US\$ fixed rate swap</b>	US\$ Libor decrease	11	5	-
Protected item: Libor US\$ indexed debt	US\$ Libor decrease	n.a.	(5)	-
<b>NDF BRL/USD</b>	R\$ depreciation	37	(133)	(303)
	US\$ interest rate inside Brazil decrease	37	28	18
	Brazilian interest rate increase	37	17	(3)
Protected item: R\$ denominated liabilities	R\$ depreciation	n.a.	-	-

Instrument	Instrument's main risk events	Probable	Scenario I	Scenario II
<b>Fuel oil protection</b>				
Options	Price input decrease	(5)	(112)	(290)
Protected item: Part of costs linked to fuel oil prices	Price input decrease	n.a.	112	290
<b>Forward Freight Agreement</b>				
Forwards	Freight price decrease	(5)	(9)	(13)
Protected item: Part of costs linked to maritime freight prices	Freight price decrease	n.a.	9	13
<b>Nickel sales fixed price protection</b>				
Forwards	Nickel price decrease	-	(4)	(8)
Protected item: Part of nickel revenues with fixed prices	Nickel price decrease	n.a.	4	8
<b>Nickel Revenue Hedging Program</b>				
Options	Nickel price increase	70	(29)	(128)
Protected item: Part of nickel revenues with fixed sales prices	Nickel price increase	n.a.	29	128
<b>Palladium Revenue Hedging Program</b>				
Options	Palladium price increase	3	-	(2)
Protected item: Part of palladium future revenues	Palladium price increase	n.a.	-	2

Instrument	Main risks	Probable	Scenario I	Scenario II
Embedded derivatives - Gas purchase	Pellet price increase	(14)	(30)	(47)

## I) Financial counterparties' ratings

The transactions of derivative instruments, cash and cash equivalents as well as short-term investments are held with financial institutions whose exposure limits are periodically reviewed and approved by the delegated authority. The financial institutions credit risk is performed through a methodology that considers, among other information, ratings provided by international rating agencies.

The table below presents the ratings in foreign currency as published by Moody's regarding the main financial institutions used by the Company to contract derivative instruments, cash and cash equivalents transaction.

	September 30, 2022		December 31, 2021	
	Cash and cash equivalents and investment	Derivatives	Cash and cash equivalents and investment	Derivatives
Aa1	22	-	128	-
Aa2	348	2	285	15
Aa3	226	-	495	34
A1	1,970	124	1,145	3
A2	583	66	3,478	39
A3	898	25	1,518	20
Baa1	-	-	90	-
Baa2	114	-	10	-
Ba2 (i)	570	77	2,763	5
Ba3 (i)	493	17	1,988	-
Other	-	(7)	5	15
	<b>5,224</b>	<b>304</b>	<b>11,905</b>	<b>131</b>

(i) A substantial part of the balances is held with financial institutions in Brazil and, in local currency, they are deemed investment grade.

## 18. Financial assets and liabilities

The Company classifies its financial instruments in accordance with the purpose for which they were acquired, and determines the classification and initial recognition according to the following categories:

	September 30, 2022				December 31, 2021			
	Amortized cost	At fair value through OCI	At fair value through profit or loss	Total	Amortized cost	At fair value through OCI	At fair value through profit or loss	Total
<b>Financial assets</b>								
<b>Current</b>								
Cash and cash equivalents (note 20)	5,182	-	-	5,182	11,721	-	-	11,721
Short-term investments (note 20)	-	-	42	42	-	-	184	184
Derivative financial instruments (note 17a)	-	-	152	152	-	-	111	111
Accounts receivable (note 9)	638	-	1,512	2,150	703	-	3,211	3,914
	<b>5,820</b>	<b>-</b>	<b>1,706</b>	<b>7,526</b>	<b>12,424</b>	<b>-</b>	<b>3,506</b>	<b>15,930</b>
<b>Non-current</b>								
Judicial deposits (note 25c)	1,289	-	-	1,289	1,220	-	-	1,220
Restricted cash (note 12)	78	-	-	78	117	-	-	117
Derivative financial instruments (note 17a)	-	-	152	152	-	-	20	20
Investments in equity securities (note 12)	-	6	-	6	-	6	-	6
	<b>1,367</b>	<b>6</b>	<b>152</b>	<b>1,525</b>	<b>1,337</b>	<b>6</b>	<b>20</b>	<b>1,363</b>
<b>Total of financial assets</b>	<b>7,187</b>	<b>6</b>	<b>1,858</b>	<b>9,051</b>	<b>13,761</b>	<b>6</b>	<b>3,526</b>	<b>17,293</b>
<b>Financial liabilities</b>								
<b>Current</b>								
Suppliers and contractors (note 11)	4,735	-	-	4,735	3,475	-	-	3,475
Derivative financial instruments (note 17a)	-	-	103	103	-	-	243	243
Loans, borrowings and leases (note 20)	447	-	-	447	1,204	-	-	1,204
Liabilities related to the concession grant (note 12a)	693	-	-	693	760	-	-	760
Other financial liabilities - Related parties (note 28)	136	-	-	136	393	-	-	393
Contract liability	534	-	-	534	566	-	-	566
	<b>6,545</b>	<b>-</b>	<b>103</b>	<b>6,648</b>	<b>6,398</b>	<b>-</b>	<b>243</b>	<b>6,641</b>
<b>Non-current</b>								
Derivative financial instruments (note 17a)	-	-	271	271	-	-	592	592
Loans, borrowings and leases (note 20)	11,757	-	-	11,757	12,578	-	-	12,578
Participative stockholders' debentures (note 19)	-	-	2,659	2,659	-	-	3,419	3,419
Liabilities related to the concession grant (note 12a)	1,576	-	-	1,576	1,437	-	-	1,437
Financial guarantees (note 6a)	-	-	101	101	-	-	542	542
	<b>13,333</b>	<b>-</b>	<b>3,031</b>	<b>16,364</b>	<b>14,015</b>	<b>-</b>	<b>4,553</b>	<b>18,568</b>
<b>Total of financial liabilities</b>	<b>19,878</b>	<b>-</b>	<b>3,134</b>	<b>23,012</b>	<b>20,413</b>	<b>-</b>	<b>4,796</b>	<b>25,209</b>

### a) Hierarchy of fair value

	September 30, 2022				December 31, 2021			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
<b>Financial assets</b>								
Short-term investments (note 20)	42	-	-	42	184	-	-	184
Derivative financial instruments (note 17a)	-	304	-	304	-	118	13	131
Accounts receivable (note 9)	-	1,512	-	1,512	-	3,211	-	3,211
Investments in equity securities (note 12)	6	-	-	6	6	-	-	6
	<b>48</b>	<b>1,816</b>	<b>-</b>	<b>1,864</b>	<b>190</b>	<b>3,329</b>	<b>13</b>	<b>3,532</b>
<b>Financial liabilities</b>								
Derivative financial instruments (note 17a)	-	374	-	374	-	835	-	835
Participative stockholders' debentures (note 19)	-	2,659	-	2,659	-	3,419	-	3,419
Financial guarantees (note 6)	-	101	-	101	-	542	-	542
	<b>-</b>	<b>3,134</b>	<b>-</b>	<b>3,134</b>	<b>-</b>	<b>4,796</b>	<b>-</b>	<b>4,796</b>

There were no transfers between levels 1, 2 and 3 of the fair value hierarchy during the periods presented.



a.i) Changes in Level 3 assets and liabilities during the period

	Derivative financial instruments	
	Financial assets	Financial liabilities
Balance at December 31, 2021	13	-
Losses recognized in the income statement	(13)	-
Balance at September 30, 2022	-	-

b) Fair value of loans and borrowings

	September 30, 2022		December 31, 2021	
	Carrying amount	Fair value	Carrying amount	Fair value
<b>Quoted in the secondary market:</b>				
Bonds	6,158	5,713	7,448	9,151
Debentures	235	232	387	387
<b>Debt contracts in Brazil in:</b>				
R\$, indexed to TJLP, TR, IPCA, IGP-M and CDI	278	278	354	449
R\$, with fixed interest	2	2	13	-
Basket of currencies and bonds in US\$ indexed to LIBOR	-	-	11	11
<b>Debt contracts in the international market in:</b>				
US\$, with variable and fixed interest	3,762	3,569	3,615	3,231
Other currencies, with variable interest	9	9	87	54
Other currencies, with fixed interest	88	86	107	117
<b>Total</b>	<b>10,532</b>	<b>9,889</b>	<b>12,022</b>	<b>13,400</b>

19. Participative stockholders' debentures

At the time of its privatization in 1997, the Company issued a total of 388,559,056 debentures to then-existing stockholders, including the Brazilian Government. The debentures' terms were set to ensure that pre-privatization stockholders would participate in potential future benefits that might be obtained from exploration of mineral resources. This obligation related to the debentures will cease when all the relevant mineral resources are exhausted, sold or otherwise disposed of by the Company.

Holders of participative stockholders' debentures have the right to receive semi-annual payments equal to an agreed percentage of revenues less value-added tax, transport fee and insurance expenses related to the trading of the products, derived from these mineral resources. On October 3, 2022 (subsequent event), the Company made available for withdrawal as remuneration the amount of US\$137 for the first semester of 2022, as disclosed on the "Shareholders' debentures report" made available on the Company's website.

To calculate the fair value of the liability, the Company uses the weighted average price of trades in the secondary market for the last month of the quarter. The average price decreased from R\$49.10 per debenture for the year ended December 31, 2021 to R\$37.00 per debenture for the period ended September 30, 2022, resulting in a gain of US\$758 recorded in the income statement for the nine-month period ended September 30, 2022 (an expense of US\$1,107 for the nine-month period ended September 30, 2021), respectively. As of September 30, 2022 the liability was US\$2,659 (US\$3,419 as at December 31, 2021).

The average price decreased from R\$43.39 per debenture for the period ended June 30, 2022 (R\$60.34 for the period ended June 30, 2021) to R\$37.00 per debenture for the period ended September 30, 2022 (R\$57.78 for the period ended September 30, 2021), resulting in a gain of US\$470 recorded in the income statement for the three-month period ended September 30, 2022 (US\$152 for the three-month period ended September 30, 2021).

## 20. Loans, borrowings, leases, cash and cash equivalents and short-term investments

### a) Net debt

The Company evaluates the net debt with the objective of ensuring the continuity of its business in the long-term.

	September 30, 2022	December 31, 2021
Debt contracts	10,666	12,180
Leases	1,538	1,602
<b>Total of loans, borrowings and leases</b>	<b>12,204</b>	<b>13,782</b>
(-) Cash and cash equivalents	5,182	11,721
(-) Short-term investments	42	184
<b>Net debt</b>	<b>6,980</b>	<b>1,877</b>

### b) Cash and cash equivalents

Cash and cash equivalents include cash, immediately redeemable deposits, and short-term investments with an insignificant risk of change in value and readily convertible to cash, being US\$1,875 (US\$6,714 as of December 31, 2021) denominated in R\$, indexed to the CDI, US\$2,579 (US\$4,769 as of December 31, 2021) denominated in US\$ and US\$728 (US\$238 as of December 31, 2021) denominated in other currencies as of September 30, 2022.

### c) Short-term investments

As of September 30, 2022, the balance of US\$42 (US\$184 as of December 31, 2021) substantially comprises investments in exclusive investment fund immediately liquidity, whose portfolio is composed of committed transactions and Financial Treasury Bills ("LFTs"), which are floating-rate securities issued by the Brazilian government.

### d) Loans, borrowings, and leases

#### i) Total debt

	Average interest rate (i)	Current liabilities		Non-current liabilities	
		September 30, 2022	December 31, 2021	September 30, 2022	December 31, 2021
Quoted in the secondary market:					
US\$ Bonds	6.00%	-	-	6,158	7,448
R\$ Debentures (ii)	9.96%	45	186	190	201
Debt contracts in Brazil in (iii):					
R\$, indexed to TJLP, TR, IPCA, IGP-M and CDI	10.83%	44	95	234	259
R\$, with fixed interest	3.04%	2	12	-	1
Basket of currencies and bonds in US\$ indexed to LIBOR	-	-	11	-	-
Debt contracts in the international market in:					
US\$, with variable and fixed interest	4.20%	54	479	3,708	3,136
Other currencies, with variable interest	4.09%	-	77	9	10
Other currencies, with fixed interest	3.59%	11	12	77	95
Accrued charges		134	158	-	-
Total		290	1,030	10,376	11,150

(i) In order to determine the average interest rate for debt contracts with floating rates, the Company used the rate applicable as of September 30, 2022.

(ii) The Company has debentures in Brazil that were raised with BNDES for infrastructure investment projects.

(iii) The Company contracted derivatives to mitigate the exposure to changes in cash flows of debt contracted in Brazil, resulting in an average cost of 3.59% per year in US\$.

## Future flows of debt payments, principal and interest

	Principal	Estimated future interest payments (i)
2022	78	138
2023	102	618
2024	607	593
2025	148	571
Between 2026 and 2030	3,675	1,868
2031 onwards	5,922	2,403
<b>Total</b>	<b>10,532</b>	<b>6,191</b>

(i) Based on interest rate curves and foreign exchange rates applicable as of September 30, 2022 and considering that the payments of principal will be made on their contracted payments dates. The amount includes the estimated interest not yet accrued and the interest already recognized in the financial statements.

## Covenants

Some of the Company's debt agreements with lenders contain covenants. The primary financial covenants in those agreements require maintaining certain ratios, such as debt to EBITDA, which is defined in note 4, and interest coverage. The Company did not identify any instances of noncompliance as of September 30, 2022.

## Reconciliation of debt to cash flows arising from financing activities

	Quoted in the secondary market	Debt contracts in Brazil	Debt contracts on the international market	Total
<b>December 31, 2021</b>	<b>7,974</b>	<b>380</b>	<b>3,826</b>	<b>12,180</b>
Additions	-	-	775	775
Payments	(1,429)	(208)	(639)	(2,276)
Interest paid (i)	(552)	(42)	(56)	(650)
<b>Cash flow from financing activities</b>	<b>(1,981)</b>	<b>(250)</b>	<b>80</b>	<b>(2,151)</b>
Effect of exchange rate	102	31	(71)	62
Interest accretion	403	119	53	575
<b>Non-cash changes</b>	<b>505</b>	<b>150</b>	<b>(18)</b>	<b>637</b>
<b>September 30, 2022</b>	<b>6,498</b>	<b>280</b>	<b>3,888</b>	<b>10,666</b>

(i) Classified as cash flow due to operational activities.

## Funding and payments

- In January 2022, the Company contracted two lines of credit indexed to Libor, in the amount of US\$425 with maturity in 2027 with the Bank of Nova Scotia, and prepaid US\$200 of a line of credit maturing in 2023 with the same bank.
- In May 2022, the Company contracted the credit line of US\$200 with MUFG Bank indexed to Secured Overnight Financing Rate ("SOFR") and maturing in 2027.
- In June 2022, the Company repurchased US\$1,291 of its bonds and paid a premium of US\$113, which has been recorded and is presented as "Bond premium repurchase" under the financial results for the nine-month period ended September 30, 2022.
- In July 2022, the Company contracted the credit line of US\$150 with SMBC Bank indexed to Secured Overnight Financing Rate ("SOFR") and maturing in 2027.
- In August 2022, the Company settle its infrastructure debentures of the 2nd series, by a payment of US\$170.
- In January 2021, the Company contracted the credit line of US\$300 with The New Development Bank maturing in 2035 and indexed to Libor + 2.49% per year.
- In March 2021, the Company redeemed all of its 3.750% bonds due January 2023, in the total amount of US\$884 (EUR750 million) and paid a premium of US\$63, which was recorded and is presented as "Bond premium repurchase" under the financial results for the nine-month period ended September 30, 2021.

## Lease liabilities

	December 31, 2021	Additions and contract modifications	Payments (i)	Interest	Sale of Midwestern System (note 14)	Translation adjustment	September 30, 2022
Ports	713	1	(54)	20	(17)	8	671
Vessels	489	-	(47)	13	-	(2)	453
Pelletizing plants	225	15	(9)	8	-	6	245
Properties	103	15	(27)	2	-	5	98
Energy plants	59	-	(5)	2	-	(4)	52
Mining equipment	13	11	(4)	2	-	(3)	19
<b>Total</b>	<b>1,602</b>	<b>42</b>	<b>(146)</b>	<b>47</b>	<b>(17)</b>	<b>10</b>	<b>1,538</b>
Current liabilities	174						157
Non-current liabilities	1,428						1,381
<b>Total</b>	<b>1,602</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,538</b>

(i) The total amount of the variable lease payments not included in the measurement of the lease liabilities for the nine-month period ended September 30, 2022 was US\$270 (2021: US\$277).

## Annual minimum payments and remaining lease term

The following table presents the undiscounted lease obligation by maturity date. The lease liability recognized in the balance sheet is measured at the present value of such obligations.

	2022	2023	2024	2025	2026 onwards	Total	Remaining contractual term (years)	Discount rate
Ports	16	62	62	61	729	927	1 to 21	3% to 5%
Vessels	16	62	60	59	346	543	3 to 11	3% to 4%
Pelletizing plants	41	48	40	40	112	281	1 to 11	2% to 5%
Properties	11	24	21	13	42	111	1 to 8	2% to 6%
Energy plants	2	6	5	5	50	68	1 to 8	5% to 6%
Mining equipment	2	6	4	4	3	22	1 to 6	2% to 6%
<b>Total</b>	<b>88</b>	<b>208</b>	<b>192</b>	<b>182</b>	<b>1,282</b>	<b>1,952</b>		

## 21. Brumadinho dam failure

On January 25, 2019, a tailings dam (“Dam I”) failed at the Córrego do Feijão mine, in the city of Brumadinho, state of Minas Gerais. The failure released a flow of tailings debris, destroying some of Vale’s facilities, affecting local communities and disturbing the environment. The tailings released have caused an impact of around 315 km in extension, reaching the nearby Paraopeba River. The dam failure in Brumadinho (“event”) resulted in 270 fatalities or presumed fatalities, including 4 victims still missing, and caused extensive property and environmental damage in the region.

As a result, on February 4, 2021, the Company entered into a Judicial Settlement for Integral Reparation (“Global Settlement”), which was under negotiations since 2019, with the State of Minas Gerais, the Public Defender of the State of Minas Gerais and the Federal and the State of Minas Gerais Public Prosecutors Offices, to repair the environmental and social damage resulting from the Dam I rupture.

### Changes on the provisions in the period

						Consolidated
	December 31, 2021	Operating expense	Present value adjustment	Disbursements	Translation adjustment	September 30, 2022
Global Settlement for Brumadinho						
Payment obligations	1,427	-	14	(571)	108	978
Provision for socio-economic reparation and others	852	-	(11)	(70)	59	830
Provision for social and environmental reparation	705	-	21	(24)	37	739
	2,984	-	24	(665)	204	2,547
Commitments						
Tailings containment and geotechnical safety	318	236	(1)	(58)	1	496
Individual indemnification	115	-	-	(60)	6	61
Other commitments	120	31	(1)	(23)	-	127
	553	267	(2)	(141)	7	684
	3,537	267	22	(806)	211	3,231
Current liabilities	1,156					1,318
Non-current liabilities	2,381					1,913
Liabilities	3,537	-	-	-	-	3,231
Discount rate in nominal terms	8.08%					8.75%

The Company has incurred expenses, which have been recognized straight to the income statement, in relation to tailings management, humanitarian assistance, payroll, legal services, water supply, among others. In the three and nine-month periods ended September 30, 2022, the Company incurred expenses in the amounts of US\$160 and US\$437, respectively (US\$161 and US\$461 in the three and nine-month periods ended September 30, 2021).

### a) Global Settlement for Brumadinho

The Global Agreement includes: (i) payment obligations, of which the funds will be used directly by the State of Minas Gerais and Institutions of Justice for socio-economic and socio-environmental compensation projects; (ii) socioeconomic projects in Brumadinho and other municipalities; and (iii) compensation of the environmental damage caused by the dam rupture. These obligations are projected for an average period of 5 years.

For the measures (i) and (ii), the agreement specifies an amount for each project and changes in the original budget and deadlines may have an impact in the provision. In addition, despite the amount set by Global Settlement to carry out the environmental recovery actions, it has no cap due to the Company's legal obligation to fully repair the environmental damage caused by the dam rupture. The expenses related to these obligations are deducted from the income tax calculation, in accordance with the Brazilian tax regulation, which is subject to periodic inspection by the competent authorities. Therefore, despite the fact Vale is monitoring this provision, the amount recorded could materially change depending on several factors that are not under the Company's control.

## b) Contingencies and other legal matters

### (b.i) Public civil actions brought by the State of Minas Gerais and state public prosecutors for damages resulting from the rupture of Dam I

The Company is party to public civil actions brought by the State of Minas Gerais and justice institutions, claiming compensation for socioeconomic and socio-environmental damages resulting from the dam failure and seeking a broad range of preliminary injunctions ordering Vale to take specific remediation and reparation actions. As a result of the Global Settlement, settled in February 2021, the requests for the reparation of socio-environmental and socioeconomic damages caused by the dam rupture were substantially resolved. Indemnifications for individual damages was excluded from the Global Settlement, and the Term of Commitment signed with the Public Defendants of the State of Minas Gerais was ratified, whose parameters are utilized as a basis for the settlement of individual agreements. In the same year of 2021, it was initiated, by Vale and the State of Minas Gerais and justice institutions, the fulfilment of the Global Settlement.

### (b.ii) Collective Labor Civil Actions

In 2021, public civil actions were filed in the Betim Labor Court in the State of Minas Gerais, by a workers' unions claiming the payment of compensation for death damages to own and outsourced employees, who died as a result of the rupture of Dam I. Initial sentences were published condemning Vale to pay from US\$185 thousand (R\$1 million) per fatal victim. Vale is defending itself on the lawsuits and understands that the likelihood of loss is possible.

### (b.iii) U.S. Securities class action suit

Vale is defending itself in a class action brought before a Federal Court in New York and filed by holders of securities - American Depositary Receipts ("ADRs") - issued by Vale. Following the decision of the Court, in May 2020, that denied the Motion to Dismiss presented by the Company, the Discovery phase has started and is expected to be concluded in 2023.

On November 24, 2021, a new Complaint was filed before the same Court by eight Plaintiffs, all investment funds, as an "opt-out" litigation from the class action already pending in the Eastern District of New York court, asserting virtually the same claims against the same defendants as those in the class case.

The likelihood of loss of these proceedings is classified as possible. However, considering the initial stage of this class action, it is not possible to reliably estimate the amount of a potential loss at this time. The Plaintiff did not specify the amounts alleged in this demand.

### (b.iv) Arbitration proceedings in Brazil filed by minority stockholders and a class association

In Brazil, Vale is a defendant in (i) one arbitration filed by 385 minority stockholders, (ii) two arbitrations filed by a class association allegedly representing all Vale's minority stockholders, and (iii) three arbitrations filed by foreign investment funds.

In the six proceedings, the Claimants argue Vale was aware of the risks associated with the dam and failed to disclose it to the stockholders. Based on such argument, they claim compensation for losses caused by the decrease of the value of the shares.

The expectation of loss is classified as possible for the six procedures and, considering the initial phase, it is not possible at this time to reliably estimate the amount of a possible loss.

In one of the proceedings filed by foreign funds, the Claimants initially estimated the amount of the alleged losses would be approximately US\$333 (R\$1,800 million). In another proceeding filed by foreign funds, the Claimants initially estimated the amount of the alleged losses would be approximately US\$721 (R\$3,900 million). The Company disagrees with the ongoing proceedings and understands that, in this case and at the current stage of the proceedings, the probability of loss in the amount claimed by the foreign funds is remote.

### (b.v) Lawsuit filed by the Securities and Exchange Commission ("SEC") and Investigations conducted by CVM

On April 28, 2022, SEC filed a suit against Vale alleging violations of U.S. securities laws arising from Vale's disclosures about its dam safety management, including the dam in Brumadinho. The SEC is seeking the imposition of civil monetary penalties, disgorgement and other relief within the SEC's authority in a lawsuit filed in a federal court. Vale believes that its disclosures did not violate U.S. law and is contesting such allegations. On September 29, 2022, Vale served the SEC with its motion to dismiss the complaint. The SEC's deadline to serve Vale with its Opposition to the motion to dismiss is currently ongoing. The likelihood of loss of this proceeding is

classified as possible and it is not yet possible to reliably estimate the amount of a potential loss to the Company due to the initial phase of the lawsuit.

CVM is also conducting investigations relating to Vale's disclosure of relevant information to shareholders, investors and the market in general, especially regarding the conditions and management of Vale's dams. The likelihood of loss of this proceeding is classified as possible and it is not yet possible to reliably estimate the amount of a potential loss to the Company.

*(b.vi) Criminal proceedings and investigations*

In January 2020, the State Prosecutors of Minas Gerais ("MPMG") filed criminal charges against 16 individuals (including former executive officers of Vale and former employees) for a number of potential crimes, including homicide, and against Vale S.A. for alleged environmental crimes. In November 2021, the Brazilian Federal Police concluded an investigation on potential criminal liability for the Brumadinho dam rupture. The investigation has been sent to the Federal Public Prosecutors ("MPF"), which has not brought criminal charges against Vale. The MPF and the Brazilian Federal Police conducted a separate investigation into the causes of the dam rupture in Brumadinho, which may result in new criminal proceedings. Vale is defending itself against the criminal claims and is not possible to estimate when a decision will be issued.

*(b.vii) Decision of Brazilian Office of the Comptroller General ("CGU")*

In October 2020, the Company was informed that the CGU initiated an administrative proceeding based on the same allegations under the Brazilian Law 12,846/2013 in connection with inspection and monitoring activities relating to the Brumadinho dam. In August 2022, the CGU has concluded that Vale has failed to present reliable information to the Brazilian National Mining Agency ("ANM") and that it was issued a positive stability condition ("DCE") statement for the Dam I of Brumadinho, when, in the understanding of the CGU, it should be negative. Thus, even recognizing the non-existence of corruption acts, the CGU issued a fine of US\$16 (R\$86 million), the minimum baseline established by law, recognizing the non-involvement or tolerance of the top management. Vale has submitted a request for reconsideration, but it believes the likelihood of loss this amount is possible.

**c) Insurance**

The Company is negotiating with insurers the payment of indemnification under its civil liability and Directors and Officers Liability Insurance. However, these negotiations are still in progress, therefore any payment of insurance proceeds will depend on the coverage definitions under these policies and assessment of the amount of loss. Due to uncertainties, no indemnification related to these insurers was recognized in these financial statements.

**22. Liabilities related to associates and joint ventures**

**a) Provision related to the rupture of Samarco dam**

In November 2015, the Fundão tailings dam owned by Samarco Mineração S.A. (Samarco) failed, releasing tailings downstream, flooding certain communities and causing impacts on communities and the environment along the Doce river. The rupture resulted in 19 fatalities and caused property and environmental damage to the affected areas. Samarco is a joint venture equally owned by Vale S.A. and BHP Billiton Brasil Ltda. ("BHPB").

In 2016, Vale, Samarco and BHPB, entered into a Framework Agreement with the Federal Government of Brazil, the states of Espírito Santo and Minas Gerais and certain other public authorities to establish that is developing and executing environmental and socio-economic programs to remediate and provide compensation for damage caused by the Samarco dam failure.

In June 2018, Samarco, Vale and BHPB entered into a comprehensive agreement with the offices of the federal and state (Minas Gerais and Espírito Santo) prosecutors, public defenders and attorney general, among other parties ("TacGov Agreement"), improving the governance mechanism of Renova Foundation and establishing, among other things, a process for potential revisions to the remediation programs under the Framework Agreement.

Under the Framework Agreement, Samarco has primary responsibility for funding Fundação Renova's annual calendar year budget for the duration of the Framework Agreement. However, to the extent that Samarco does not meet its funding obligations, each of Vale and BHPB have secondary funding obligations under the Framework Agreement in proportion to its 50 per cent shareholding in Samarco.

Samarco began to gradually recommence operations in December 2020, however, there remains significant uncertainty regarding Samarco's long-term cash flow generation. In light of these uncertainties and based on currently available information, Vale has a provision for its obligations under the Framework Agreement programs in the amount of US\$2,953 at September 30, 2022 (December 31, 2021: US\$2,910).

#### b) Germano Dam

In addition to the Fundão tailings dam, Samarco owns the Germano dam, which was also built under the upstream method and has been inactive since the Fundão dam rupture. Due to the safety requirements set by the Brazilian National Mining Agency ("ANM"), Samarco prepared a project for the de-characterization of this dam, resulting in a provision for the de-characterization of the Germano tailings dam. As of September 30, 2022, Vale has a provision for de-characterization of Germano tailings dam in the amount of US\$191 (December 31, 2021: US\$202).

#### c) Changes on the provisions in the period

	2022	2021
<b>Balance at January 1,</b>	<b>3,112</b>	<b>2,074</b>
Additional provision	89	560
Disbursements	(114)	(131)
Present value adjustment	(44)	(101)
Translation adjustment	101	(137)
<b>Balance at September 30,</b>	<b>3,144</b>	<b>2,265</b>

  

	September 30, 2022	December 31, 2021
Current liabilities	2,027	1,785
Non-current liabilities	1,117	1,327
<b>Liabilities</b>	<b>3,144</b>	<b>3,112</b>

#### d) Samarco's working capital

In addition to the provision, Vale S.A. made available US\$21 during the nine-month period ended September 30, 2021, which was fully used to fund Samarco's working capital. This amount was recognized in Vale's income statement as an expense in "Equity results and other results in associates and joint ventures". In 2022, Vale was not required to fund Samarco's working capital.

#### e) Judicial recovery of Samarco

In April 2021, Samarco announced the request for Judicial Reorganization ("RJ") that was filed with the Minas Gerais Court to renegotiate its debt, which is held by bondholders abroad. The purpose of RJ is to restructure Samarco's debts and establish an independent and sustainable financial position, allowing Samarco to keep working to resume its operations safely and to fulfill its obligations related to the Renova Foundation.

In addition, the ongoing discussions in the context of the RJ may lead to the loss of deductibility of part of the expenses incurred with the Renova Foundation and of the deferred taxes over the total provision, depending on the method determined for restructuring Samarco's debts. As of September 30, 2022, the exposure is US\$1,471 (R\$7,951 million), of which US\$439 (R\$2,376 million) are expenses already incurred and considered as part of the Company's uncertain tax positions.

The Company is working in the perspective that the mechanisms resulting from the RJ will continue allowing the deductibility of these expenses. However, future decisions resulting from the negotiations regarding Samarco's capital structure, which are not under Vale's control, could materially change the deferred tax recognized by the Company.

#### f) Contingencies related to Samarco accident

These proceedings include public civil actions brought by Brazilian authorities and multiple proceedings involving claims for significant amounts of damages and remediation measures. The Framework Agreements represents a model for the settlement of the public civil action brought by the MPF and other related proceedings. There are also putative securities class actions in the United States against Vale and some of its current and former officers and a criminal proceeding in Brazil. The main updates regarding the lawsuits in the period were as follows:



(f.i) Public civil action brought by federal prosecutors and framework agreements

Vale is a defendant in several legal proceedings brought by governmental authorities and civil associations claiming socioenvironmental and socioeconomic damages and a number of specific remediation measures as a result of the rupture of Samarco's Fundão dam, including a claim brought by the Federal Public Prosecution Office in 2016 seeking US\$29 billion (R\$155 billion) (full amount of the claim, the effect for Vale would be 50% of this amount), which has been suspended from the date of ratification of the TacGov Agreement.

However, pre-requisites established in the TacGov Agreement, for renegotiation of the Framework Agreement were not implemented during the two-year period and on September 30, 2020, and Brazilian Federal and State prosecutors and public defenders filed a request for the immediate resumption of the US\$29 billion (R\$155 billion) claim.

Therefore, Vale, Samarco, BHPB and Federal and State prosecutors have been engaging in negotiations to seek a definitive settlement of the obligations under the Framework Agreement and the US\$29 billion (R\$155 billion) Federal Public Prosecution Office claim. The goal with a potential agreement is to provide a stable framework for the execution of reparation and compensation programs. The potential agreement is still uncertain as it is subject to conclusion of the negotiations and approval by the Company, relevant authorities and Intervient parties.

The estimate of the economic impact of a potential agreement will depend mainly on (i) a detailed assessment of the estimates of the amounts to be spent on the reparation and compensation projects being discussed, (ii) an analysis of the detailed scope of such projects to determine their overlap with the initiatives and amounts already provisioned; and (iii) the timing of the execution of projects and disbursements, which will impact the present value of the obligations.

Therefore, until any revisions to the Programs are agreed, Fundação Renova will continue to implement the Programs in accordance with the terms of the Framework Agreement and the TacGov Agreement, for which the expected costs are reflected in the Company's provision.

(f.ii) Criminal proceeding

In September 2019, the federal court of Ponte Nova dismissed all criminal charges against Vale representatives relating to the first group of charges, which concerns to the results of the Fundão dam failure, remaining only the legal entity in the passive pole. The second group of charges against Vale S.A. and one of the Company's former employee, which concerns the accusation of alleged crimes committed against the Environmental Public Administration, remained unchanged. The Company is defending itself and cannot estimate when a final decision on the case will be issued.

**g) Insurance**

Since the Fundão dam rupture, the Company negotiated with insurers the indemnification payments based on its general liability policies. In the nine-month period ended September 30, 2021, the Company received US\$33, which was recorded as a gain in the income statement as "Equity results and other results in associates and joint ventures". The Company did not receive any further insurance in 2022 and does not expect to receive any material amounts in the future.

**23. Provision for de-characterization of dam structures and asset retirement obligations**

The Company is subject to laws and regulations that requires the decommissioning of the assets and mines sites at the end of the operation and, therefore, decommissioning expenditures are incurred predominantly when the Company ceases the operating activities. Depending on the geotechnical characteristics of the structures, the Company is required to de-characterize the structures, as described below.

**a) De-characterization of upstream and centerline geotechnical structures**

As a result of the Brumadinho dam rupture (note 21), the Company has decided to speed up the plan to "de-characterize" all of its tailings dams built under the upstream method, certain "centerline structures" and dikes, located in Brazil. The Company also operates tailings dams in Canada, including upstream compacted dams. However, the Company has decided that these dams will be decommissioned using other methods, and so, the provision to execute decommissioning of dams in Canada is recognized as "Asset retirement obligations and environmental obligations", presented in item (b) below.

In September 2020, the federal government enacted Law no. 14,066, which modified the National Dam Safety Policy (Law no. 12,334/2020), reinforcing the prohibition of constructing and raising upstream dams in Brazil. The statute also requires companies to de-characterize the structures built using the upstream method by 2022, or by a later date if it is proven that the de-characterization is not technically feasible by 2022. A substantial part of the Company's de-characterization projects will be completed in 15 years, which exceeds the date established in the regulation due to the characteristics and safety levels of the Company's geotechnical structures.

Thus, in February 2022, the Company filed with the relevant bodies a request for an extension to perform the projects and, as a result, signed a Term of Commitment establishing legal and technical certainty for the process of de-characterization of the upstream dams, considering that the deadline defined was technically unfeasible, especially due to the necessary actions to increase safety during the works. With the signing of the agreement, the Company recorded an additional provision of US\$37 to make investments in social and environmental projects over a period of 8 years.

### Changes on the provisions in the period

	2022	2021
Balance at January 1,	3,523	2,289
Additional provision	72	-
Disbursements	(247)	(254)
Present value adjustment	(23)	(81)
Translation adjustment	129	(97)
Balance at September 30,	3,454	1,857

  

	September 30, 2022	December 31, 2021
Current liabilities	472	451
Non-current liabilities	2,982	3,072
Liabilities	3,454	3,523

In addition, due to the de-characterization projects, the Company has suspended some operations due to judicial decisions or technical analysis performed by Vale on its upstream dam structures located in Brazil. The Company has been recording losses in relation to the operational stoppage and idle capacity of the ferrous mineral segment in the amounts of US\$202 for the nine-month period ended on September 30, 2022 (US\$256 for the nine-month period ended on September 30, 2021). The Company is working on legal and technical measures to resume all operations at full capacity.

### b) Asset retirement obligations and environmental obligations

	Liability		Discount rate		Cash flow duration
	September 30, 2022	December 31, 2021	September 30, 2022	December 31, 2021	
Liability by geographical area					
Brazil	1,334	1,398	5.74%	5.48%	2119
Canada	1,463	2,727	1.39%	0.00%	2150
Oman	123	123	4.86%	3.03%	2035
Indonesia	69	77	4.49%	4.20%	2061
Other	183	255	0.02 - 2.55%	0.00 - 7.79%	-
	3,172	4,580			

## Changes on the provisions in the period

	2022			2021		
	Asset retirement obligations	Environmental obligations	Total	Asset retirement obligations	Environmental obligations	Total
<b>Balance at January 1,</b>	<b>4,283</b>	<b>297</b>	<b>4,580</b>	<b>4,220</b>	<b>302</b>	<b>4,522</b>
Present value adjustment (i)	(1,169)	(4)	(1,173)	(432)	(8)	(440)
Disbursements	(73)	(41)	(114)	(60)	(32)	(92)
Revisions on projected cash flows	40	1	41	-	-	-
Translation adjustment	(116)	5	(111)	(56)	(10)	(66)
Transfer to assets held for sale (note 14)	(49)	(2)	(51)	-	-	-
<b>Balance at September 30,</b>	<b>2,916</b>	<b>256</b>	<b>3,172</b>	<b>3,672</b>	<b>252</b>	<b>3,924</b>

  

	September 30, 2022			December 31, 2021		
	Asset retirement obligations	Environmental obligations	Total	Asset retirement obligations	Environmental obligations	Total
Current	131	97	228	72	98	170
Non-current	2,785	159	2,944	4,211	199	4,410
<b>Liability</b>	<b>2,916</b>	<b>256</b>	<b>3,172</b>	<b>4,283</b>	<b>297</b>	<b>4,580</b>

(i) Mainly refers to the increase in the discount rate of the asset retirement obligation in Canada, which increased from 0.00% to 1.39% in the nine-month period ended September 30, 2022. The adjustment in provision was recorded as the property, plant and equipment (note 16).

## c) Financial guarantees

The Company has issued letters of credit and surety bonds of US\$566 as of September 30, 2022 (US\$605 as of December 31, 2021), in connection with the asset retirement obligations for its Base Metals operations.

## 24. Provisions

	Current liabilities		Non-current liabilities	
	September 30, 2022	December 31, 2021	September 30, 2022	December 31, 2021
Provisions for litigation (note 25)	100	93	1,089	1,012
Employee post-retirement obligations (note 26)	105	99	1,260	1,533
Payroll, related charges and other remunerations	724	816	-	-
Onerous contracts (note 14)	-	37	-	874
	<b>929</b>	<b>1,045</b>	<b>2,349</b>	<b>3,419</b>

## 25. Litigations

The Company is defendant in numerous legal actions in the ordinary course of business, including civil, tax, environmental and labor proceedings.

The Company makes use of estimates to recognize the amounts and the probability of outflow of resources, based on reports and technical assessments and on management's assessment. Provisions are recognized for probable losses of which a reliable estimate can be made.

Arbitral, legal and administrative decisions against the Company, new jurisprudence and changes of existing evidence can result in changes regarding the probability of outflow of resources and on the estimated amounts, according to the assessment of the legal basis.

### a) Provision for legal proceedings

The Company has considered all information available to assess the likelihood of an outflow of resources and in the preparation on the estimate of the costs that may be required to settle the obligations.

**Tax litigations** - Mainly refers to the lawsuit filed in 2011 by Valepar (merged by Vale) seeking the right to exclude the amount of dividends received in the form of interest on capital ("JCP") from the PIS and COFINS tax base. The amount reserved for this proceeding as of September 30, 2022 is US\$434 (2021: US\$402). This proceeding is guaranteed by a judicial deposit in the amount of US\$502 as of September 30, 2022 (2021: US\$463).

**Civil litigations** - Refers to lawsuits for: (i) indemnities for losses, payments and contractual fines due to contractual imbalance or non-compliance that are alleged by suppliers, and (ii) land claims referring to real estate Vale's operational activities.

**Labor litigations** - Refers to lawsuits for individual claims by in-house employees and service providers, primarily involving demands for additional compensation for overtime work, moral damages or health and safety conditions.

**Environmental litigations** - Refers mainly to proceedings for environmental damages and issues related to environmental licensing.

	Tax litigation	Civil litigation	Labor litigation	Environmental litigation	Total of litigation provision
<b>Balance at December 31, 2021</b>	<b>456</b>	<b>284</b>	<b>358</b>	<b>7</b>	<b>1,105</b>
Additions and reversals, net (note 5)	3	39	47	7	96
Payments	(1)	(51)	(43)	-	(95)
Indexation and interest	22	28	13	-	63
Translation adjustment	13	5	12	-	30
Transfer to held for sale (note 14)	(1)	(7)	(2)	-	(10)
<b>Balance at September 30, 2022</b>	<b>492</b>	<b>298</b>	<b>385</b>	<b>14</b>	<b>1,189</b>
Current liabilities	15	22	61	2	100
Non-current liabilities	477	276	324	12	1,089
	<b>492</b>	<b>298</b>	<b>385</b>	<b>14</b>	<b>1,189</b>

  

	Tax litigation	Civil litigation	Labor litigation	Environmental litigation	Total of litigation provision
<b>Balance at December 31, 2020</b>	<b>485</b>	<b>260</b>	<b>335</b>	<b>11</b>	<b>1,091</b>
Additions and reversals, net (note 5)	-	5	61	1	67
Payments	(5)	(20)	(41)	(4)	(70)
Indexation and interest	5	22	28	-	55
Acquisition of NLC (note 14)	(22)	(11)	(15)	-	(48)
Translation adjustment	-	1	8	-	9
<b>Balance at September 30, 2021</b>	<b>463</b>	<b>257</b>	<b>376</b>	<b>8</b>	<b>1,104</b>
Current liabilities	7	15	57	1	80
Non-current liabilities	456	242	319	7	1,024
	<b>463</b>	<b>257</b>	<b>376</b>	<b>8</b>	<b>1,104</b>

## b) Contingent liabilities

	September 30, 2022	December 31, 2021
Tax litigations	6,286	8,731
Civil litigations	1,196	1,503
Labor litigations	549	516
Environmental litigations	1,030	954
<b>Total</b>	<b>9,061</b>	<b>11,704</b>

In addition, as reported in the financial statements for the year ended December 31, 2021, the Company is a counterparty in several actions and the main updates on contingent liabilities since then, are discussed as follows:

### (b.i) Tax proceedings - PIS/COFINS

The Company is a party to several collections related to the alleged improper use of PIS and COFINS credits (federal taxes levied on the companies' gross revenue). Brazilian tax legislation authorizes taxpayers to use PIS and COFINS tax credits, such as those referring to the acquisition of inputs for the production process and other items. The tax authorities mainly claim that (i) some credits were not related to the production process, and (ii) the right to use the tax credits was not adequately proven. During 2022 the Company received new proceedings in the amount of US\$529 (R\$2,862 million), for which the likelihood of loss is deemed possible.

### (b.ii) Tax proceedings - Value added tax on services and circulation of goods ("ICMS")

Vale is engaged in several administrative and court proceedings relating to additional charges of ICMS by the tax authorities of different Brazilian states. In each of these proceedings, the tax authorities claim that (i) use of undue tax credit; (ii) failing to comply with certain accessory obligations; (iii) the Company is required to pay the ICMS on acquisition of electricity (iv) operations related to the collection of tax rate differential ("DIFAL") and (v) incidence of ICMS on its own transportation. During 2022, the Company received new proceedings in the amount of US\$84 (R\$453 million), for which the likelihood of loss is deemed possible.

### c) Judicial deposits

	September 30, 2022	December 31, 2021
Tax litigations	1,009	957
Civil litigations	137	100
Labor litigations	131	141
Environmental litigations	12	22
<b>Total</b>	<b>1,289</b>	<b>1,220</b>

### d) Guarantees contracted for legal proceedings

In addition to the above-mentioned tax, civil, labor and environmental judicial deposits, the Company contracted US\$2,181 in guarantees for its lawsuits, as an alternative to judicial deposits.

## 26. Employee post-retirement obligations

### a) Long-term incentive programs

The Company has long-term reward mechanisms that include the Matching program and the Performance Shares Units ("PSU") for eligible executives to retain and stimulate their performance.

On March 30, 2022, a new cycle of the Matching program started and the fair value was calculated on the Company's share price and their respective ADRs at the grant date, which was R\$95.87 and US\$20.03 per share. The Company will grant 1,437,588 shares for the new cycle (2021: 1,046,255 shares).

During the third quarter of 2022, a new cycle of the PSU program has started and the Company will grant 1,709,955 shares (2021: 1,474,723 shares). The fair value was calculated based on the performance factor using Monte Carlo simulations for the Return to Shareholders Indicator and health and safety and sustainability indicators. The assumptions used for the Monte Carlo simulations are shown in the table below, as well as the result used to calculate the expected value of the total performance factor.

PSU	2022
Granted shares	1,709,955
Date shares were granted	1/3/2022
VALE (BRL)	78.00
VALE ON (USD)	13.81
Expected volatility	39.00% p.y.
Expected term (in years)	3
Expected shareholder return indicator	51.20%
Expected performance factor	53.08%

The fair value of the program will be recognized on a straight-line basis over the required three-year period of service, net of estimated losses.

### b) Reconciliation of assets and liabilities recognized in the balance sheet

	September 30, 2022			December 31, 2021		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
<b>Balance at beginning of the period</b>	<b>919</b>	-	-	<b>864</b>	-	-
Interest income	51	-	-	58	-	-
Changes on asset ceiling	249	-	-	60	-	-
Translation adjustment	27	-	-	(63)	-	-
<b>Balance at end of the period</b>	<b>1,246</b>	-	-	<b>919</b>	-	-
<b>Amount recognized in the balance sheet</b>						
Present value of actuarial liabilities	(4,942)	(592)	(1,089)	(2,833)	(3,983)	(1,428)
Fair value of assets	6,188	316	-	3,752	3,779	-
Effect of the asset ceiling	(1,246)	-	-	(919)	-	-
<b>Liabilities</b>	<b>-</b>	<b>(276)</b>	<b>(1,089)</b>	<b>-</b>	<b>(204)</b>	<b>(1,428)</b>
Current liabilities	-	(41)	(64)	-	(47)	(52)
Non-current liabilities	-	(235)	(1,025)	-	(157)	(1,376)
<b>Liabilities</b>	<b>-</b>	<b>(276)</b>	<b>(1,089)</b>	<b>-</b>	<b>(204)</b>	<b>(1,428)</b>

## 27. Stockholders' equity

### a) Share capital

As of September 30, 2022, the share capital was US\$61,614 corresponding to 4,778,889,263 shares issued and fully paid without par value.

	September 30, 2022		
	Common shares	Golden shares	Total
<b>Shareholders with more than 5% of total capital</b>	<b>1,317,200,871</b>	-	<b>1,317,200,871</b>
Previ	408,743,556	-	408,743,556
Capital World Investors	319,508,101	-	319,508,101
Blackrock, Inc	302,602,159	-	302,602,159
Mitsui&co	286,347,055	-	286,347,055
Free floating	3,225,390,427	-	3,225,390,427
Golden shares	-	12	12
<b>Total outstanding (without shares in treasury)</b>	<b>4,542,591,298</b>	<b>12</b>	<b>4,542,591,310</b>
Shares in treasury	236,297,953	-	236,297,953
<b>Total capital</b>	<b>4,778,889,251</b>	<b>12</b>	<b>4,778,889,263</b>

### b) Cancellation of treasury shares

- On February 24, 2022, the Board of Directors approved the cancellation of 133,418,347 common shares issued by the Company and held in treasury, without reducing the value of its share capital. The effect of US\$2,830 was recorded in shareholders' equity as "Treasury shares used and cancelled".
- On July 28, 2022, the Board of Directors approved the cancellation of 220,150,800 common shares issued by the Company and held in treasury, without reducing the value of its share capital. The effect of US\$3,786 was recorded in shareholders' equity as "Treasury shares used and cancelled".
- On September 16, 2021, the Board of Directors approved the cancellation of 152,016,372 common shares of the Company acquired in previous buyback programs and held in treasury, without reducing its capital stock. The effect of US\$2,401 was recorded in shareholders' equity as "Treasury shares used and cancelled".

### c) Remuneration approved

- On February 24, 2022, the Board of Directors approved the remuneration to shareholders in the amount of US\$3,500, which was fully paid on March 16, 2022.
- On July 28, 2022, the Board of Directors approved the remuneration to shareholders in the amount of US\$3,000, which was fully paid on September 1, 2022.
- On February 25, 2021, the Board of Directors approved the remuneration to shareholders in the amount of US\$3,972, which was fully paid on March 15, 2021.
- On June 17, 2021, the Board of Directors approved an additional remuneration to shareholders in the amount of US\$2,200, which was fully paid on June 30, 2021.
- On September 16, 2021, the Board of Directors approved the stockholder's remuneration in the total amount of US\$7,391 million, which was fully paid on September 30, 2021.

### d) Share buyback

- On May 16, 2022, the Company reached the approved limit for the buyback program of up to 470,000,000 shares. Of this amount, 178,815,500 common shares and their respective ADRs were repurchased in 2022, corresponding US\$3,251, of which US\$1,750 were acquired through wholly owned subsidiaries and US\$1,501 by the Parent Company.
- On May 16, 2022, the Company started a new share buyback program to repurchase 500,000,000 common shares and their respective ADRs over the next 18 months. During the nine-month period ended September 30, 2022, the Company repurchased

119,114,479 common shares and their respective ADRs, corresponding to US\$1,819, of which US\$964 were acquired through wholly owned subsidiaries and US\$855 by the Parent Company.

- As of September 30, 2022, the Company hold 236,297,953 shares, being 125,456,849 through its wholly owned subsidiaries and 110,841,104 directly by the Parent Company, of which US\$2,127 through its wholly owned subsidiaries and US\$1,887 million by the Parent Company.
- During the nine-month period ended September 30, 2021, the Company repurchased 238,860,947 common shares at an average cost of US\$20.28 per share (R\$105.76 per share), being 99,842,600 through wholly owned subsidiaries and 139,018,347 directly by the parent company. The amount acquired was US\$4,845, being US\$1,837 through wholly owned subsidiaries and US\$3,008 by the Parent Company.

## 28. Related parties

The Company's related parties are subsidiaries, joint ventures, associates, stockholders and its related entities and key management personnel of the Company.

Related party transactions were made by the Company on terms equivalent to those that prevail in arm's-length transactions, with respect to price and market conditions that are no less favorable to the Company than those arranged with third parties.

Net operating revenue relates to sale of iron ore to the steelmakers and right to use capacity on railroads. Cost and operating expenses mostly relates to the variable lease payments of the pelletizing plants.

Purchases, accounts receivable and other assets, and accounts payable and other liabilities relate largely to amounts charged by joint ventures and associates related to the pelletizing plants operational lease and railway transportation services.

### a) Transactions with related parties

	2022			Three-month period ended September 30, 2021		
	Net operating revenue	Cost and operating expenses	Financial results	Net operating revenue	Cost and operating expenses	Financial results
<b>Joint ventures</b>	<b>104</b>	<b>(273)</b>	<b>(6)</b>	<b>177</b>	<b>(280)</b>	<b>(1)</b>
Companhia Siderúrgica do Pecém	92	-	1	177	-	4
Aliança Geração de Energia S.A.	-	(34)	-	-	(30)	-
Pelletizing companies (i)	-	(81)	(8)	-	(129)	(5)
MRS Logística S.A.	-	(118)	-	-	(86)	-
Norte Energia S.A.	-	(37)	-	-	(34)	-
Other	12	(3)	1	-	(1)	-
<b>Associates</b>	<b>73</b>	<b>(9)</b>	<b>(2)</b>	<b>69</b>	<b>(6)</b>	<b>(1)</b>
VLI	72	(8)	(1)	68	(6)	(1)
Other	1	(1)	(1)	1	-	-
<b>Major stockholders</b>	<b>67</b>	<b>-</b>	<b>88</b>	<b>52</b>	<b>-</b>	<b>(113)</b>
Bradesco	-	-	88	-	-	(114)
Mitsui	67	-	-	52	-	-
Banco do Brasil	-	-	-	-	-	1
<b>Total of continuing operations</b>	<b>244</b>	<b>(282)</b>	<b>80</b>	<b>298</b>	<b>(286)</b>	<b>(115)</b>

(i) Aggregated entities: Companhia Coreano-Brasileira de Pelotização, Companhia Hispano-Brasileira de Pelotização, Companhia Ítalo-Brasileira de Pelotização and Companhia Nipo-Brasileira de Pelotização.

## Notes to the Interim Financial Statements

Expressed in millions of United States dollar, unless otherwise stated



	Nine-month period ended September 30,					
	2022			2021		
	Net operating revenue	Cost and operating expenses	Financial results	Net operating revenue	Cost and operating expenses	Financial results
<b>Joint ventures</b>	<b>379</b>	<b>(738)</b>	<b>(29)</b>	<b>516</b>	<b>(610)</b>	<b>(9)</b>
Companhia Siderúrgica do Pecém	347	-	(1)	516	-	2
Aliança Geração de Energia S.A.	-	(87)	-	-	(80)	-
Pelletizing companies (i)	-	(249)	(28)	-	(219)	(11)
MRS Logística S.A.	1	(296)	-	-	(216)	-
Norte Energia S.A.	-	(100)	-	-	(88)	-
Other	31	(6)	-	-	(7)	-
<b>Associates</b>	<b>219</b>	<b>(21)</b>	<b>(3)</b>	<b>196</b>	<b>(15)</b>	<b>(2)</b>
VLI	218	(20)	(2)	195	(15)	(2)
Other	1	(1)	(1)	1	-	-
<b>Major stockholders</b>	<b>224</b>	<b>-</b>	<b>270</b>	<b>166</b>	<b>-</b>	<b>(31)</b>
Bradesco	-	-	270	-	-	(33)
Mitsui	224	-	-	166	-	-
Banco do Brasil	-	-	-	-	-	2
<b>Total of continuing operations</b>	<b>822</b>	<b>(759)</b>	<b>238</b>	<b>878</b>	<b>(625)</b>	<b>(42)</b>
Discontinued operation - Coal (note 14)	-	-	-	-	(95)	15
<b>Total</b>	<b>822</b>	<b>(759)</b>	<b>238</b>	<b>878</b>	<b>(720)</b>	<b>(27)</b>

(i) Aggregated entities: Companhia Coreano-Brasileira de Pelotização, Companhia Hispano-Brasileira de Pelotização, Companhia Ítalo-Brasileira de Pelotização and Companhia Nipo-Brasileira de Pelotização.

### b) Outstanding balances with related parties

	September 30, 2022			December 31, 2021		
	Cash and cash equivalents	Accounts receivable	Dividends receivable, financial instruments and other assets	Cash and cash equivalents	Accounts receivable	Dividends receivable, financial instruments and other assets
<b>Joint ventures</b>	<b>-</b>	<b>96</b>	<b>36</b>	<b>-</b>	<b>75</b>	<b>96</b>
Companhia Siderúrgica do Pecém	-	92	17	-	74	39
Pelletizing companies (i)	-	-	-	-	-	37
MRS Logística S.A.	-	-	19	-	-	19
Other	-	4	-	-	1	1
<b>Associates</b>	<b>-</b>	<b>22</b>	<b>17</b>	<b>-</b>	<b>18</b>	<b>3</b>
VLI	-	18	-	-	16	-
Other	-	4	17	-	2	3
<b>Major stockholders</b>	<b>481</b>	<b>2</b>	<b>70</b>	<b>1,825</b>	<b>4</b>	<b>5</b>
Bradesco	445	-	70	1,746	-	5
Mitsui	-	2	-	-	4	-
Banco do Brasil	36	-	-	79	-	-
<b>Pension plan</b>	<b>-</b>	<b>15</b>	<b>-</b>	<b>-</b>	<b>12</b>	<b>-</b>
<b>Total</b>	<b>481</b>	<b>135</b>	<b>123</b>	<b>1,825</b>	<b>109</b>	<b>104</b>

(i) Aggregated entities: Companhia Coreano-Brasileira de Pelotização, Companhia Hispano-Brasileira de Pelotização, Companhia Ítalo-Brasileira de Pelotização and Companhia Nipo-Brasileira de Pelotização.



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Expressed in millions of United States dollar, unless otherwise stated



	September 30, 2022		December 31, 2021	
	Supplier and contractors	Financial instruments and other liabilities	Supplier and contractors	Financial instruments and other liabilities
<b>Joint ventures</b>	<b>340</b>	<b>136</b>	<b>70</b>	<b>393</b>
Pelletizing companies (i)	267	136	13	393
MRS Logística S.A.	41	-	41	-
Other	32	-	16	-
<b>Associates</b>	<b>8</b>	<b>88</b>	<b>9</b>	<b>47</b>
VLI	6	88	6	47
Other	2	-	3	-
<b>Major stockholders</b>	<b>1</b>	<b>116</b>	<b>2</b>	<b>265</b>
Bradesco	-	116	-	265
Mitsui	1	-	2	-
<b>Pension plan</b>	<b>8</b>	<b>-</b>	<b>10</b>	<b>-</b>
<b>Total</b>	<b>357</b>	<b>340</b>	<b>91</b>	<b>705</b>

(i) Aggregated entities: Companhia Coreano-Brasileira de Pelotização, Companhia Hispano-Brasileira de Pelotização, Companhia Ítalo-Brasileira de Pelotização and Companhia Nipo-Brasileira de Pelotização.