Votorantim S.A.

Consolidated financial statements and independent auditor's report

2022

VOTORANTIM

(A free translation of the original in Portuguese)

Independent auditor's report

To the Board of Directors and Stockholders
Votorantim S.A.

Opinion

We have audited the accompanying consolidated financial statements of Votorantim S.A. (the "Company") and its subsidiaries, which comprise the consolidated balance sheet as at December 31, 2022 and the consolidated statements of income, comprehensive income, changes in equity and cash flows for the year then ended, and notes to the financial statements, including significant accounting policies and other explanatory information.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Votorantim S.A. and its subsidiaries as at December 31, 2022, and their financial performance and their cash flows for the year then ended, in accordance with accounting practices adopted in Brazil and with the International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

Basis for opinion

We conducted our audit in accordance with Brazilian and International Standards on Auditing. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Company and its subsidiaries in accordance with the ethical requirements established in the Code of Professional Ethics and Professional Standards issued by the Brazilian Federal Accounting Council, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Other matters

Statements of Value Added

The consolidated Statement of Value Added for the year ended December 31, 2022, prepared under the responsibility of the Company's management and presented as supplementary information for IFRS purposes, was submitted to audit procedures performed in conjunction with the audit of the Company's consolidated financial statements. For the purposes of forming our opinion, we evaluated whether this statement is reconciled with the financial statements and accounting records, as applicable, and if its form and content are in accordance with the criteria defined in Technical Pronouncement CPC 09 - "Statement of Value Added". In our opinion, this Statement of Value Added has been properly prepared in all material respects, in accordance with the criteria established in the Technical Pronouncement, and is consistent with the consolidated financial statements taken as a whole.

PricewaterhouseCoopers Auditores Independentes Ltda., Al. Dr. Carlos de Carvalho, 417, 11º,
Curitiba Trade Center, Curitiba, PR, Brasil, 80410-180
T: 4004-8000, www.pwc.com.br

Responsibilities of management and those charged with governance for the consolidated financial statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting practices adopted in Brazil and with the International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB), and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the financial reporting process of the Company and its subsidiaries.

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Brazilian and International Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Brazilian and International Standards on Auditing, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal control of the Company and its subsidiaries.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the ability of the Company to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether these financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Curitiba, April 4, 2023

PricewaterhouseCoopers
Auditores Independentes Ltda.
CRC 2SP000160/O-5

Carlos Eduardo Guaraná Mendonça
Contador CRC 1SP196994/O-2

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Year ended December 31
All amounts in millions of brazilian real unless otherwise stated

VOTORANTIM
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	Note	2022	2021
Assets			
Current assets			
Cash and cash equivalents	9	10,526	13,680
Financial investments	10	2,965	3,132
Derivative financial instruments	6.1.1	72	4,810
Trade receivables	11	3,284	3,679
Inventory	12	8,082	7,167
Taxes recoverable	14	1,545	2,709
Dividends receivable	15	401	305
Electric power futures contracts	1.1 (d)		845
Other assets		1,012	944
		27,887	37,271
Assets classified as held-for-sale	1.1 (a) and 32	85	1,281
Total current assets		**27,972**	**38,552**
Non-current assets			
Long-term receivables			
Financial investments		383	
Financial instruments - shares	13	6,613	2801
Derivative financial instruments	6.1.1	813	847
Taxes recoverable	14	2,068	2,033
Related parties	15	239	225
Deferred income tax and social contribution	22 (b)	2,045	2,696
Judicial deposits	23 (b)	346	214
Electric power futures contracts	1.1 (d)		2,962
Securitization of receivables		218	211
Other assets		634	705
		13,359	**12,694**
Investments	16	20,157	13,691
Advance for investment property		153	58
Property, plant, and equipment	17 (a)	35,885	35,078
Intangible assets	18 (a)	14,538	16,703
Right to use assets arising from leases	20 (a)	1,211	1,492
Biological assets		72	90
Total non-current assets		**85,375**	**79,806**
Total assets		**113,347**	**118,358**

All amounts in millions of brazilian real unless otherwise stated

	Note	2022	2021
Liabilities and equity			
Current liabilities			
Borrowing	19 (a)	647	603
Derivative financial instruments	6.1.1	326	556
Financial instruments - offtake agreement	1.1 (b)	9	
Lease liabilities	20 (b)	206	330
Confirming payables	21	3,219	3,405
Trade payables		7,406	6,914
Salaries and payroll charges		1,329	1,377
Taxes payable		742	1,627
Advances from clients		164	188
Provision	23 (a)	190	145
Dividends payable	15	1,262	1,624
Use of public assets	24	119	175
Electric power futures contracts	1.1 (d)	153	800
Deferred revenue - silver streaming		137	185
Other liabilities		1,040	1,529
		16,949	19,458
Liabilities related to assets held-for-sale	1.1 (a)		1,163
Total liabilities		**16,949**	**20,621**
Non-current liabilities			
Borrowing	19 (a)	22,223	24,401
Derivative financial instruments	6.1.1	640	526
Financial instruments - offtake agreement	1.1 (b)	105	
Lease liabilities	20 (b)	1,071	1,221
Deferred income tax and social contribution	22 (b)	3,966	3,824
Related parties	15	141	75
Provision	23 (a)	3,529	3,606
Use of public assets	24	1,744	1,692
Pension plan and post-employment health care benefits	25	417	563
Electric power futures contracts	1.1 (d)	94	3,063
Deferred revenue - silver streaming		553	637
Other liabilities		1,022	841
Total non-current liabilities		**35,505**	**40,449**
Total liabilities		**52,454**	**61,070**
Equity			
Share capital	26 (a)	28,656	28,656
Revenue reserves		18,977	14,741
Carrying value adjustments	26 (c)	5,236	6,517
Total equity attributable to the owners of the Company		**52,869**	**49,914**
Non-controlling interests		8,024	7,374
Total equity		**60,893**	**57,288**
Total liabilities and equity		**113,347**	**118,358**

All amounts in millions of brazilian real unless otherwise stated

	Note	2022	2021
Continuing operations			
Net revenue from products sold and services rendered	27	52,895	49,008
Cost of products sold and services rendered	28	(42,254)	(37,934)
Gross profit		**10,641**	**11,074**
Operating income (expenses)			
Selling	28	(1,110)	(901)
General and administrative	28	(2,876)	(2,841)
Other operating results	29	979	605
		(3,007)	**(3,137)**
Operating profit before equity results and finance results		**7,634**	**7,937**
Results from equity investments			
Equity in the results of investees	16 (c)	1,471	585
Realization of other comprehensive income on disposal of investments			20
		1,471	**605**
Finance results, net	30		
Finance income		2,611	5,538
Finance costs		(4,114)	(3,258)
Foreign exchange losses, net		14	(505)
		(1,489)	**1,775**
Profit before income tax and social contribution		**7,616**	**10,317**
Income tax and social contribution	22 (a)	**(2,169)**	**(3,432)**
Profit from continuing operations		**5,447**	**6,885**
Discontinued operations			
Profit on discontinued operations		16	235
Profit for the period attributable to the owners of the Company		**5,463**	**7,120**
Profit attributable to the owners of the Company		4,762	6,400
Profit attributable to non-controlling interests		701	720
Profit for the period		**5,463**	**7,120**
Weighted average number of shares - thousands (to the owners of the Company)		18,278,789	18,278,789
Basic and diluted earnings per thousand shares, in reais		**260.52**	**350.13**
From continuing operations			
Basic and diluted earnings per thousand shares, in reais		**259.64**	**337.27**
From discontinued operations			
Basic and diluted earnings per thousand shares, in reais		**0.88**	**12.86**

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All amounts in millions of brazilian real unless otherwise stated

	Note	2022	2021
Net income for the period		**5,463**	**7,120**
Other components of comprehensive income to be subsequently reclassified to profit or loss			
Attributable to the owners of the Company	26 (c)		
Foreign exchange variations		(1,191)	1,203
Hedge accounting for net investments abroad, net of taxes		(108)	(12)
Hedge accounting for the operations of subsidiaries		(11)	601
Fair value of assets available for sale		(3)	(3)
Realization of comprehensive results on the sale of investments	1.1 (a)	(80)	
Participation in other comprehensive results of investees		107	(58)
Attributable to non-controlling			
Foreign exchange variations of investees		(586)	82
Hedge accounting of investments abroad, net of tax effects		36	47
		(1,836)	**1,860**
Other components of comprehensive income that will not be reclassified to profit or loss			
Attributable to the owners of the Company	26 (c)		
Realization of comprehensive results on the sale of shares			(265)
Adjustment to fair value of shares, net of tax effects		50	144
Remeasurement of retirement benefits, net of taxes		118	37
Credit risk of debts measured at fair value		(8)	(9)
Attributable to non-controlling			
Remeasurement of retirement benefits, net of tax			12
Participation in other comprehensive results of investees		(5)	
Credit risk of debts valued at fair value		1	6
Other components of comprehensive income for the period		**(1,680)**	**1,785**
Of operations			
Continued operations		3,767	8,670
Discontinued operations		16	235
		3,783	**8,905**
Comprehensive income attributable to			
Owners of the Company		3,636	8,038
Non-controlling interests		147	867
		3,783	**8,905**

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	Note	Share capital	Tax incentives	Legal	Profit retention	Retained (loss) earnings	Carrying value adjustments	Total	Non-controlling interests	Total equity
		Attributable to the owners of the Company								
			Revenue reserves							
At January 1, 2021		**28,656**	**10**	**1,032**	**7,764**		**4,879**	**42,341**	**4,455**	**46,796**
Profit for the year						6,400		6,400	720	7,120
Other components of comprehensive income							1,638	1,638	147	1,785
Comprehensive income for the year						**6,400**	**1,638**	**8,038**	**867**	**8,905**
Distribution of dividends					(1,016)			(1,016)	(176)	(1,192)
Effect in the dilution on interest in investee - McInnis					1,513			1,513	1,314	2,827
Gain in the dilution on interest in investee - CBA					214			214	914	1,128
Net gain on sale of shares of investee - CBA					344			344		344
Mandatory minimum dividends						(1,520)		(1,520)		(1,520)
Constitution of reserves				320	4,560	(4,880)				
Total contributions and distributions to shareholders				**320**	**5,615**	**(6,400)**		**(465)**	**2,052**	**1,587**
At December 31, 2021		**28,656**	**10**	**1,352**	**13,379**		**6,517**	**49,914**	**7,374**	**57,288**
At January 1, 2022		**28,656**	**10**	**1,352**	**13,379**		**6,517**	**49,914**	**7,374**	**57,288**
Profit for the year						4,762		4,762	701	5,463
Other components of comprehensive income							(1,126)	(1,126)	(554)	(1,680)
Comprehensive income for the year						**4,762**	**(1,126)**	**3,636**	**147**	**3,783**
Distribution of dividends	26 (b)				(1,429)			(1,429)	(371)	(1,800)
Effect of the corporate transaction Auren - Deconsolidation of Votorantim Geração de Energia	1.1 (d)								469	469
Net gain on sale of shares - Companhia Brasileria de Alumínio	1.1 (h)				318			318	412	730
Acquisition of Alux Brasil Indústria e Comércio Ltda.	1.1 (c)								21	21
Acquisition of non-controlling interest - Alux Brasil Indústria e Comércio Ltda.	1.1 (c)				(47)			(47)	(28)	(75)
Adjustments for hyperinflationary operating environments	1.1 (f)				88			88		88
Reversed dividends	26 (b)				1,520			1,520		1,520
Reclassification of fair value of shares in the acquisition of an investment	1.1 (m)				155		(155)			
Mandatory minimum dividends	26 (b)					(1,131)		(1,131)		(1,131)
Constitution of reserves				238	3,393	(3,631)				
Total contributions and distributions to shareholders				**238**	**3,998**	**(4,762)**	**(155)**	**(681)**	**503**	**(178)**
At December 31, 2022		**28,656**	**10**	**1,590**	**17,377**		**5,236**	**52,869**	**8,024**	**60,893**

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All amounts in millions of brazilian real unless otherwise stated

	Note	2022	2021
Cash flow from operating activities			
Profit before income tax and social contribution		7,616	10,317
Profit of discontinued operations		16	235
Adjustments to items that do not represent changes in cash and cash equivalents			
Depreciation, amortization and depletion	28	3,983	3,637
Depreciation, amortization and depletion - discontinued operations	28		90
Equity in the results of investees	16 (c)	(1,471)	(585)
Interest, indexation and foreign exchange variations		1,473	1,851
Reversal for the impairment of fixed and intangible assets	29	(51)	(559)
Reversal for the impairment of investments	29	(827)	827
Loss (gain) on sales of fixed and intangible assets, net		(55)	104
Adjustment to fair value of loans and financing	19 (b)	(45)	(53)
Constitution of provisions, net		688	602
Derivative financial instruments		(161)	(4,386)
Derivative financial instruments - Offtake agreement		(127)	
Electric power future contracts	29	156	(171)
Loss (gain) net revenue on sale of investments	29	756	(629)
Gain from valuation at fair value of assets on loss of control of investee	29	(1,284)	
Gain on purchase of investee	29	(21)	(243)
Gain on valuation at fair value of investee in business combination	29	(82)	
Renegotiation of hydrological risk			(448)
Charges for debt renegotiation		3	382
		10,567	**10,971**
Decrease (increase) in assets			
Financial investments		214	2,910
Derivative financial instruments		(177)	(840)
Trade accounts receivable		(425)	(592)
Inventory		(1,472)	(2,425)
Taxes to recover		493	62
Related parties		(27)	(25)
Judicial deposits		(189)	(30)
Other accounts receivable and other assets		66	38
Increase (decrease) in liabilities			
Trade payables		1,190	1,642
Salaries and social charges		10	230
Use of public assets		64	158
Taxes payable		(581)	352
Advances from customers		(5)	50
Confirming payables		29	974
Other obligations and other liabilities		(365)	280
Cash provided by operating activities		**9,392**	**13,755**
Interest paid on borrowing and use of public assets		(1,635)	(1,425)
Income tax and social contribution paid		(1,024)	(1,163)
Net cash provided by operating activities		**6,733**	**11,167**

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	Note	2022	2021
Cash flow from investing activities			
Proceeds from disposals of fixed and intangible assets		231	840
Acquisition of financial instruments - shares	1.1 (h)	904	910
Sale of financial instruments - shares			1,615
Acquisition of financial instruments - shares		(33)	(1,368)
Dividends received		457	471
Acquisitions of property, plant and equipment	17 (a)	(5,064)	(5,346)
Acquisition of investment property		(2)	(58)
Receipt for sale of investments		60	
Acquisition of net cash investment received from investee		(478)	
Increase (decrease) in biological assets		18	
Acquisition of investments	1.1 (c) and 1.1 (m)	(1,418)	(593)
Acquisition of intangible assets	18 (a)	(1,088)	(666)
Net cash used in investing activities		**(6,413)**	**(4,195)**
Cash flow from financing activities			
New borrowing	19 (b)	4,467	4,414
Repayment of borrowing	19 (b)	(5,118)	(6,779)
Repayment of leasing contracts	20 (b)	(412)	(363)
Derivative financial instruments		(170)	42
Dividends paid		(1,845)	(1,132)
Cash received on initial public offering of investee			657
Net cash used in financing activities		**(3,078)**	**(3,161)**
Increase (decrease) in cash and cash equivalents		**(2,758)**	**3,811**
Effect of companies included from consolidation		16	
Effect of companies excluded from consolidation		(25)	(133)
Effect of fluctuations in exchange rates		(387)	219
Cash and cash equivalents at the beginning of the year		**13,680**	**9,783**
Cash and cash equivalents at end of the year		**10,526**	**13,680**
Non-cash transactions			
Acquisition of investments with stock issues			2,827
Capitalization of interest on equity	1.1 (i)	(175)	

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All amounts in millions of brazilian real unless otherwise stated

	Note	2022	2021
Revenue			
Sales of products and services (unless returns and sales rebates)		60,764	56,586
Estimated loss on doubtful accounts	6.1.1 (b)	13	68
Other operating income, net	29	928	46
		61,705	**56,700**
Inputs acquired from third parties			
Raw materials and other production inputs		(36,050)	(31,516)
Materials, energy, outsourced services and others		(936)	(887)
Impairment of assets	29	51	559
Gross value added		**24,770**	**24,856**
Depreciation, amortization and depletion	17, 18 and 20	(3,983)	(3,638)
Net value added generated by the Company		**20,787**	**21,218**
Value added received through transfers			
Equity in the results of investees	16	1,471	585
Finance income and foreign exchange losses		8,610	9,695
		10,081	**10,280**
Total value added to distribute		**30,868**	**31,498**
Distribution of value added			
Personnel and payroll charges			
Direct remuneration		3,469	3,373
Social charges		1,270	1,151
Benefits		767	737
		5,506	**5,261**
Taxes and contributions			
Federal		4,031	4,645
State		4,392	4,089
Municipal		27	23
Deferred taxes		652	1,631
		9,102	**10,388**
Third-party capital remuneration			
Finance costs and foreign exchange losses		10,248	8,351
Rentals		549	378
		10,797	**8,729**
Own capital remuneration			
Non-controlling interests		701	720
Dividends		(1,131)	(2,712)
Reinvested profits		5,877	8,877
Loss on discontinued operations		16	235
		5,463	**7,120**
Value added distributed		**30,868**	**31,498**

1 General considations

Votorantim S.A. ("the Company", "the Parent Company", or "VSA"), is a long-term Brazilian holding company. With its headquarters in the city of São Paulo, Brazil, the Company's purpose is to manage assets and companies, and to invest in other companies in order to further its objectives.

The Company, through its subsidiaries and associates, operates in the following segments: building materials, finance, aluminum, clean and renewable energy, metals and mining, agrobusiness, long steel, real estate and infrastructure.

1.1 Main events that occurred during the year of 2022

(a) Sale of investment – APDR

On January 20, 2022, the Company completed the sale of its subsidiary, APDR. The transaction generated revenue of R$ 103, with a decrease in investment of R$ 928, recognition of foreign exchange variation in the item "Adjustment to equity", in the amount of R$ 80, and consulting expenses of R$ 12, totaling a loss of R$ 757. As a result of the sale, the impairment constituted in November 2021 in the amount of R$ 827 was reversed. The impacts of the transaction were recognized in the item "Other operating results". As a result of the sale of the investment, the amounts classified in the items "Assets classified as held for sale" and "Liabilities related to assets held for sale" on the balance sheet, ceased to be included in the consolidation.

(b) Future sale agreement - Nexa Resources S.A. ("Nexa")

On January 25, 2022, the subsidiary Nexa signed an Offtake Agreement, in which it committed to sell 100% of the copper concentrate that will be produced by the Aripuanã mine for a period of 5 years from October 2022, instead of making future royalty payments related to mining rights obtained. The sale was conditioned up to a total of 30,810 tons, at the lower of the market price or limited to a maximum price established in the contract. The agreement was structured to completely extinguish the obligation to make royalty payments, and the impacts of the transaction were recognized in the item "Derivative financial instruments" in the liability, for the updated amount of R$ 114.

The offtake agreement resulted from negotiations with the Offtaker to sell the copper concentrate in lieu of paying future royalties related to the previous acquisition of mineral rights for the Aripuanã project. The amount of R$ 208, representing the fair value of the contract on its inception date, was recognized as an intangible asset and will be amortized over the life of the mine according to the Production Units ("UoP") method.

Additionally, the subsidiary chose to voluntarily and irrevocably designate the entire offtake contract at fair value through the result within CPC 48 / IFRS 9 - Financial Instruments, instead of separating the value of the embedded derivative associated with the price cap, recognizing a non-monetary income of R$ 127 in the statement of income on December 31, 2022.

(c) Acquisition of 80% of Alux do Brasil Indústria e Comércio Ltda. ("Alux") - Companhia Brasileira de Alumínio ("CBA")

On November 3, 2021, the subsidiary CBA entered into a contract to acquire 80% of the share capital of Alux for R$ 133, subject to adjustments at closing, as provided in the purchase and sale agreement. The completion of the transaction was subject to the fulfillment of customary obligations and conditions precedent, as well as approval by the Administrative Council for Economic Defense - CADE, which was formalized without restrictions on January 6, 2022.

On January 31, 2022, the acquisition of the stake in Alux was completed, after the fulfillment of all the conditions precedent.

On November 18, 2022, the subsidiary CBA executed the first addendum to the Quotas Purchase and Sale Agreement for the acquisition of 20% of the remaining share capital of Alux, at a purchase price of R$ 98.

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(d) Reverse merger - Votorantim Geração de Energia S.A. ("VGE")

On February 3, 2022, the subsidiary VGE was reverse merged by the indirect subsidiary VTRM Energia Participações S.A. ("VTRM"), and VTRM gained the following assets after the merger:

(i) 50.00% ownership in Pinheiro Machado Participações S.A. ("Pinheiro Machado");
(ii) 66.67% ownership in CBA Energia Participações S.A. ("CBA Energia");
(iii) 66.67% ownership in Pollarix S.A. ("Pollarix");
(iv) 100.00% ownership in Auren Comercializadora de Energia Ltda. ("Auren Comercializadora").

As a result of the reverse merger, 992,547,441 (nine hundred ninety-two million, five hundred forty-seven thousand, four hundred forty-one) shares that VGE held in VTRM were canceled and replaced with an equal number of shares of VTRM and allocated to VSA. Due to the assets incorporated by VTRM, 612,874,904 (six hundred twelve million, eight hundred seventy-four thousand, nine hundred four) new ordinary shares were issued by the investee, allocated to VSA.

As a result of the corporate restructuring, the Company ceased to consolidate the previously controlled VGE and Auren Comercializadora, which held energy futures contracts in the amount of R$ 3,972 in assets and R$ 3,936 in liabilities. The balance sheet of the companies excluded from consolidation is shown below:

Balance sheets as of January 31, 2022	VGE	Elimination of VTRM investment	Net book value of VGE merger	Auren Comercializadora
Assets				
Cash and cash equivalents	25		25	
Financial investments				34
Trade receivables				272
Dividends receivable	72		72	
Other assets	8		8	96
Investments	2,963	(2,313)	650	20
Intangible assets	548		548	25
Total assets	**3,616**	**(2,313)**	**1,303**	**447**
Liabilities				
Trade payables				262
Salaries and payroll charges	11		11	18
Other liabilities	60		60	45
Total liabilities	**71**		**71**	**325**
Equity	**3,545**	**(2,313)**	**1,232**	**122**
Total liabilities and equity	**3,616**	**(2,313)**	**1,303**	**447**

Additionally, due to the restructuring of energy assets, there was a reduction in the percentage of the Company's equity interest in the indirect subsidiaries CBA Energia, Pollarix, and Pinheiro Machado, which are controlled by CBA, Nexa, and Votorantim Cimentos S.A. ("VCSA"), respectively. The effect of this reduction was R$ 469, recorded in the "Statement of changes in equity" account.

Below is the balance sheet of the investments and the effect of the transaction on non-controlling shareholders:

All amounts in millions of brazilian real unless otherwise stated

Balance Sheets as of March 31, 2022	CBA Energia	Pollarix	Pinheiro Machado
Assets			
Cash and cash equivalents	22	32	
Financial investments	10		
Dividends receivable	42	73	
Other assets	9	2	
Investments	317	331	31
Total assets	**400**	**438**	**31**
Liabilities			
Trade payables	11	8	
Dividends payable	43	50	
Total liabilities	**54**	**58**	
Equity			
Share capital	206	180	24
Revenue reserves	112	173	
Retained earnings	28	28	7
Total equity	**346**	**381**	**31**
Total liabilities and equity	**400**	**439**	**31**

	CBA Energia	Pollarix	Pinheiro Machado
Interest percentage attributed to non-controlling interests	**66.67%**	**66.67%**	**50.00%**
Total equity of non-controlling shareholders	231	254	16
(+) Disproportionate equity	3	7	
(-) Profit attributed to non-controllers on March 31,2022	(19)	(19)	(4)
Effect of the corporate transaction Auren Energia S.A. for non-controlling shareholders	**215**	**242**	**12**

In the reverse acquisition process of VGE, the book value attributed to its net assets, excluding the value of the participation held in VTRM, was R$ 1,232, which was contributed to the investment, as shown in the table below:

Shareholders' equity of VGE as of January 31, 2022	3,545
(-) VGE's investment in VTRM	(2,226)
(-) Added value of wind power plant	(132)
(+) Deferred taxes on the added value of wind power plant	45
Addition by incorporation of VGE by VTRM	**1,232**

Due to the fact that the transaction had characteristics of a business combination (CPC 15) for VTRM, the assets were contributed by VSA at fair value, with a value increase of R$ 959 for the Company, recorded in the "Other operating results" account, considering net the effects of the change in equity interest. The effects of asset valuation are shown in the table below:

Pollarix	460
CBA Energia	161
Pinheiro Machado	76
Auren	262
Revaluation at fair value of investees:	**959**

As a result of capital contributions made by other shareholders of VTRM, VSA recorded a gain of R$ 325 in the dilution of equity participation, recorded in the item "Other operating results".Therefore, the total gain of the transaction for the Company was R$ 1,284, with a tax impact of R$ 237 due to the recognition of deferred income tax and social contribution, as shown below:

All amounts in millions of brazilian real unless otherwise stated

Gain in the fair value of the assets merged into VGE by VTRM	959
Loss in the dilution of participation in the capital contribution of the Canada Pension Plan Investment Board ("CPP")	(104)
Gain in the change of participation in the merger of CESP shares	429
Total gain from the operation	**1,284**
(-) Permanent exclusion of participation from dilution of share	(325)
(-) Exclusion of goodwill from investee Auren	(262)
Tax basis for deferred taxes	**697**
Deferred income tax and social contribution	237

Considering the impacts mentioned above, there was an addition of R$ 2,471 in the investments held by the Company, as shown in the table below:

Investment held in VTRM in December 2021	**2,361**
Addition by the merger of VGE by VTRM	1,232
Revaluation at fair value of investees	959
Gain for change of participation	325
Reflection of deferred taxes on added value	(45)
Equity income in the period	(2)
Investment held in VTRM in March 2022	**4,830**

Incorporation of Companhia Energética de São Paulo ("CESP"):

On March 25, 2022, VTRM incorporated all of the shares of CESP, excluding the shares held by VTRM and the shares held in CESP's treasury. With the completion of the corporate restructuring, VTRM acquired the shares traded on the Stock Exchange of the investee CESP, which were being traded at a value of R$ 25.08 (twenty-five brazilian real and eight cents) per share. As a result of the shares incorporated, 307,622,529 (three hundred and seven million, six hundred and twenty-two thousand, five hundred and twenty-nine) new ordinary shares were issued, which were allocated to the CESP shareholders. At the end of the transaction, the Company held 37.74% of the capital of VTRM. The accounting effect of this transaction for the Company was R$ 429 and is presented jointly with the other effects of changes in equity participation in the result in the amount of R$ 1,284.

On March 28, 2022, VTRM changed its corporate name to Auren Energia S.A. ("Auren"), and its shares started trading on the Novo Mercado of B3 under the ticker "AURE3", at an initial price of R$ 16.80 (sixteen brazilian real and eighty cents) per share.

Change of corporate name - Auren Comercializadora

On June 28, 2022, with the purpose of standardizing the governance of Votener Comercializadora de Energia Ltda. ("Votener") and Auren, there was a change in Votener's articles of association. Among the changes, there was a change in its corporate name to Auren Comercializadora.

(e) Full redemption of Senior Notes - Nexa Resources Perú S.A.A. ("Nexa Peru")

On March 28, 2022, the indirect subsidiary Nexa Peru completed the early redemption and cancellation of all Senior Notes outstanding with maturity in 2023. Noteholders offered a principal amount of R$ 616 (USD 128 million). In this transaction, the indirect subsidiary Nexa Peru paid R$ 616 (USD 128 million) in principal, R$ 16 (USD 3 million) in accrued interest, and R$ 16 (USD 3 million) in premium on the notes, recognized in the item "Net financial results" (Note 30).

(f) Effects of hyperinflationary economy - VCSA

Controlled company VCSA recorded in its financial statements on December 31, 2022 the effects of inflation, as well as the devaluation of the functional currency of its investments located in Turkey. As of April 1, 2022, Turkey's economy was considered hyperinflationary, in accordance with CPC 42 - Accounting in Hyperinflationary Economies / IAS 29 - Financial Reporting in Hyperinflationary Economies.

CPC 42 / IAS 29 requires that the financial statements of entities whose functional currency is that of a hyperinflationary economy be adjusted for the effects of changes in an appropriate general price index and be expressed in terms of the current unit of measure at the end of the reporting period. To determine whether an economy is classified as hyperinflationary under CPC 42 / IAS 29, the standard details a number of factors to be considered, including the existence of a cumulative inflation rate over three years that approaches or exceeds 100%.

CPC 42 / IAS 29 must be applied as if the economy had always been hyperinflationary. In accordance with this principle, the financial statements of a company that reports in the currency of a hyperinflationary economy must be expressed in terms of the current unit of measure at the date of the financial statements.

All balances in the balance sheet that are not expressed in terms of the current unit of measure at the date of the financial statements must be updated by applying a general price index. Thus, inflation produced from the date of acquisition or revaluation, as applicable, must be recorded in non-monetary items. All components of the income statement must be presented in the current unit of measure at the date of the financial statements, applying the variation of the general price index that occurred since the date on which revenues and expenses were originally recognized in the financial statements.

The main procedures for the above adjustment are as follows:

(a) Monetary assets and liabilities recorded at current values on the balance sheet date are not updated because they are already expressed in current monetary units on the balance sheet date;
(b) Non-monetary assets and liabilities that are not recorded at current values on the balance sheet date and components of equity are adjusted by applying the applicable conversion factors;
(c) All items in the income statement are restated by applying the applicable conversion factors;
(d) The effects of inflation on the Company's net monetary position are presented in the income statement under "Exchange variations and hyperinflation effects, net";
(e) All balance sheet (assets and liabilities) and income statement (revenues and expenses) balances must be converted at the closing rate on the date of the most recent financial statements.

The comparative financial statements of controlled company VCSA presented in stable currency have not been adjusted for subsequent changes in price levels or exchange rates. This results in an initial difference, resulting from the initial adoption of hyperinflation accounting, between the closing equity of the previous year and the opening balance of the current year's equity. The controlled company recognizes this initial difference directly in the statement of changes in equity as "Effect of initial hyperinflation accounting adjustment".

The ongoing application of the conversion of comparative values at closing rates under IAS 21 - "The Effects of Changes in Foreign Exchange Rates" and the hyperinflation adjustments required by IAS 29 will lead to an additional difference to that arising from the initial adoption of hyperinflation accounting. These additional differences will be presented in the comprehensive income statement under the item "Foreign exchange variations of operations located abroad". The table below presents the main impacts on non-monetary assets and liabilities included in the balance sheet as a result of the adoption of CPC 42 / IAS 29:

All amounts in millions of brazilian real unless otherwise stated

	Note	Effects of first-time adoption - IAS 29
Assets		
Inventory		1
Property, plant, and equipment	17 (a)	110
Right to use assets arising from leases	20 (a)	2
Total assets		**113**
Liabilities and equity		
Taxes payable		23
Total liabilities		**23**
Equity		
Revenue reserves		88
Non-controlling interests		2
Total equity		**90**
Total liabilities and equity		**113**

(g) Renegotiation of contractual terms - VCSA and Votorantim Cimentos N/NE ("VCNNE")

In April 2022, the subsidiary VCSA and its subsidiary VCNNE renegotiated the contractual conditions of loans under Law No. 4,131/1962, contracted in 2020 in the amounts of R$ 493 (USD 100 million) and R$ 247 (USD 50 million), respectively. VCSA and VCNNE extended the maturity period from 2025 to 2028 and contracted a new swap (derivative financial instrument) for the exchange of a fixed rate in USD for a floating rate in CDI, as well as the exchange of currency, dollar for real. The previous swap was extinguished upon renegotiation of the main loan agreement.

On June 6, 2022, the indirect subsidiary Itacamba renegotiated the contractual conditions of a bilateral loan, contracted with a local financial institution in May 2019, with a remaining principal balance of R$ 158 (BOB 205 million). Itacamba extended the maturity from 2028 to 2034 and reduced the borrowing cost.

(h) Public offering of shares and sale of shares – CBA and VSA

On April 6, 2022, the Company and its subsidiary CBA concluded the public offering ofsecondary distribution of common shares ("Restricted Offer"), nominative, book-entry, with no fair value, free and clear of any encumbrances held by Company.

The Company's Board of Directors set the price per share of R$ 19.00 (nineteen brazilian real) on this date, totaling the Restricted Offer of R$ 904, through the sale of 47,600,000 (forty-seven million and six hundred thousand) shares held, resulting in a net gain of R$ 318 by the Company, recognized under the heading "Statement of Shareholders' Equity".

After the sale, the Company holds 404,483,333 common shares, corresponding to 67.89% of the total and voting capital of CBA.
The operation reinforces the initiatives to increase the liquidity of shares issued by CBA in the market, consequently reaching the minimum free float requirement set out in the Novo Mercado regulation of B3, in addition to being part of the Company's portfolio diversification strategy.

(i) Capital increase with capitalization of Interest on Equity ("JCP") – Banco Votorantim S.A. ("BV bank")

On April 29, 2022, Banco BV carried out the capital increase through the capitalization of part of the JCP declared and not yet paid to its shareholders, referring to the year 2021. The capital increase was carried out without financial transactions, with the issuance of new shares of Banco BV, in the amount of R$ 350, R$ 175 for each partner, maintaining the respective equity interests.

(j) Tender-offer by Votorantim Cimentos International S.A. ("VCI") – VCSA

On May 13, 2022, the indirect subsidiary VCI announced the tender-offer of its bonds ("bonds") in US dollars, with maturity in 2041. On June 1, 2022, the repurchase was settled with the total cash disbursement of USD 224 million (R$ 1,173), with the principal amount settled being USD 195 million (R$ 1,023).

To settle the offer to buy back the bonds, VCSA used the funds raised through its 14th issue of debentures. Also during 2022, the indirect subsidiary VCI repurchased and canceled in the secondary market the amount of USD 42 million (R$ 219) of principal referring to its bonds maturing in 2041. At the end of 2022, the remaining principal balance of the bonds maturing in 2041 was approximately USD 334 million (R$ 1,742).

(k) 14th issuance of debentures by VCSA

On May 17, 2022, VCSA, the subsidiary, made its 14th public issuance of debentures, with restricted placement efforts, in the amount of R$ 1,000 and due in 2029. As part of its liability management strategy, VCSA used the funds raised from this issuance to settle the tender offer announced by VCI as per Note 1.1 (m).

(l) New Committed Credit Facility – VCSA

In replacement of the revolving credit facility (Committed Credit Facility) contracted in August 2019 in the amount of USD 290 million (R$ 1,568) with maturity in 2024, the indirect subsidiaries VCI, Votorantim Cimentos EAA Inversiones S.L. ("VCEAA") and St. Marys Cement Inc. ("St. Marys") and its subsidiaries, in June 2022, contracted a new revolving credit line with a syndicate of banks in the amount of USD 300 million (R$ 1,622). The new line matures in June 2027 and is characterized as Sustainability-Linked, in accordance with the long-term sustainability commitments of the subsidiary VCSA and its subsidiaries. At the end of 2022, the total amount of USD 300 million (R$ 1,565) was available to the Company's subsidiaries for further withdrawals, if necessary.

(m) Acquisition of shares of CCR S.A. ("CCR")

On July 5, 2022, the Company, together with Itaúsa S.A. ("Itaúsa"), signed the purchase and sale agreement for the acquisition of the entirety of Andrade Gutierrez Participações S.A.'s ("AG") stake in CCR S.A. The agreement involved the purchase of 300,149,836 (three hundred million, one hundred and forty-nine thousand, eight hundred and thirty-six) common shares, representing 14.9% of CCR's capital. The transaction was completed on September 12, 2022, after approval by the Administrative Council for Economic Defense - CADE and fulfillment of the conditions precedent set forth in the contract.

Considering the 5.8% stake acquired by the Company in the investee in 2021, VSA now holds 10.33% of CCR's capital. As a result of the new percentage of participation after this acquisition and the representation on CCR's Board of Directors, VSA has significant influence over the investee, classifying the investment as an associate, and being evaluated by the equity method, in compliance with CPC 18 / IAS 28 - Investment in Associates, Subsidiaries and Joint Ventures.

After the acquisition of the stake previously held by AG, the amounts related to the first acquisition made in 2021, which were previously classified as a financial instrument measured at fair value through other comprehensive income, were reclassified to the "Investments" category.

All amounts in millions of brazilian real unless otherwise stated

The following table details CCR's balances as of August 31, 2022, and the accounting impacts of the transaction for the Company:

	Value
Reclassification of the first acquisition of shares - cost	1,348
Reclassification of the first acquisition of shares - fair value	235
Acquisition of additional participation	1,235
Total transferred consideration classified as investment	**2,818**

According to CPC 48 / IFRS 9 – Financial instruments, the reclassification of changes in fair value recognized in other comprehensive income should not pass through profit or loss for the year, and may be transferred to retained earnings in equity. Considering this, the Company opted for the reclassification of the fair value of the financial instrument, net of deferred taxes, recognized until then under the caption "Equity valuation adjustments", in shareholders' equity, to the caption "Profit retention", as detailed below:

	Value
Reclassification of the first acquisition of shares - fair value	235
Deferred income tax and social contribution	(80)
Reclassified net value	**155**

The summary of CCR's balances, at book value and at fair value on the date of the second acquisition, are detailed below, considering the results obtained in the preliminary PPA valuation report “Purchase Price Allocation”. The legal deadline for finalizing the report is one year from the date of acquisition. The variation between the carrying amount and the fair value arises from adjustments resulting from the valuation and identification of assets and liabilities in accordance with IFRS3 / CPC 15 (R1) – “Business combinations”.

In accordance with CPC 46 / IFRS 13 - Fair value measurement, the concept of fair value is defined as the price that would be received for the sale of an asset or that would be paid for the transfer of a liability in an orderly transaction between market participants. market at the measurement date. Considering the best market practices, the PPA valuation report adopted the following valuation approach: Income approach. This method is based on the present value of estimated cash flows for the remaining useful life of the assessed asset and liability. Its application is carried out through:

(i) Estimate of the cash flow generated by the asset; It is
(ii) Calculation of cash flow at present value by applying a rate of return that reflects the value of money over time and the risk of the asset. Fair value will be equal to the sum of cash flows and residual value discounted to present value.

	Value
Book value of identifiable assets and liabilities	1,268
Fair value of identifiable assets and liabilities	2,762
Added value in the acquisition of investment	**1,494**
(-) Deferred income tax and social contribution on added value	(509)
Net added value	985
Goodwill	**565**

All amounts in millions of brazilian real unless otherwise stated

Methodology used to determine the fair value

Added value of concession contracts	1,584
Added value of property, plant and equipment	(3)
Added value of CCR's pre-existing goodwill	(87)
Added value in the acquisition of investment	**1,494**

Added value over the concession contracts: the concession contracts guarantee CCR's subsidiaries the exclusive use of infrastructure and services in their respective segments. Concessions have specific durations for each contract. Its evaluation comprised assumptions based on the remaining useful life, with cash flow projections for the generation of future economic benefits.

Added value of property, plant and equipment: the valuation criteria adopted to determine the market value of these assets consisted of valuation based on the rate of return, with an estimated market value for the property, plant and equipment appraised.

Added value pf CCR's preexisting goodwill: the calculation disregards the goodwill formed on the acquisition of CCR's investees, since the revaluation of the cash flow is based on the estimate, at present value, of the future cash flows generated by the investees of CCR.

(n) Sale of the São Miguel Paulista nickel refinery – CBA

In July 2022, the conditions precedent for closing the transaction for the sale of the São Miguel Paulista nickel refinery were concluded, pursuant to the purchase agreement entered into between the subsidiary CBA and Jervois Mining Limited ("Jervois").

In order to carry out the sale of the nickel refinery, on July 1, 2022, the transfer of assets and the assignment of the respective liabilities was carried out by CBA to a new legal entity called Cristal Mineração e Metalurgia Ltda. ("Crystal"). The transfer of assets to Cristal was carried out partly via a capital increase, in the amount of R$ 142, and partly via the assignment of liabilities, in the amount of R$ 23, totaling the transferred net assets of R$119.

The total nominal value of the sale transaction corresponds to the amount of R$ 125, received as an advance on December 7, 2020 in the amount of R$ 15, R$ 48 on July 15, 2022 at the closing of the contract and the remaining balance of R$ 62 will be paid until June 30, 2023. The fair value totaled R$ 119.

Due to the conclusion of the conditions precedent and the completion of the sale of the refinery, the subsidiary CBA recognized in June 2022 the reversal of the impairment of assets in the amount of R$ 169.

(o) Contracting a loan pursuant to Law No. 4,131/1962 by VCSA

On July 26, 2022, the subsidiary VCSA entered into a loan agreement pursuant to Law 4,131/1962 in the total amount of USD 80 million (R$ 435) with maturity in 2028. The operation has a swap contract that aims both at exchanging exposure to the fixed rate in dollars for a floating CDI rate and at exchanging the currency from dollar to brazilian real. This swap was contracted along with the same financial institution as the loan (fixed rate debt in USD and swap for floating rate CDI + spread). In line with the liability management strategy, the proceeds from this funding were used for the early repayment of Euro-denominated loans of the indirect subsidiary VCEAA..

All amounts in millions of brazilian real unless otherwise stated

(p) Acquisition of stake in Enercan – Campos Novos Energia S.A. (“Enercan”)

On August 8, 2022, Companhia Estadual de Geração e Transmissão de Energia Elétrica (“CEEE-G”) negotiated the totality of its shareholding in Enercan of 6.51% due to the holding of the public privatization auction. The transaction was priced by the seller at the amount of R$ 97.

In October 2022, the indirect subsidiaries CBA Energia and Pollarix notified CEEE-G of the exercise of their preemptive right, as provided for in the shareholders' agreement, to acquire their rightful portions of the Offered Shares. CBA Energia increased its stake by 1.6571%, for an amount of R$ 25 and Pollarix had an increase of 1.4620% in its stake, for an amount of R$22. completed, and on November 17, 2022, the parties signed the purchase and sale agreement for the stake, and the new Enercan shareholder agreement.

	11/30/2022
Transferred consideration	25
Value of the portion of equity of the investee acquired at fair value	(14)
Goodwill for expected future profitability	**11**

As of that date, Enercan ceased to be recognized as a joint operation, and the subsidiaries CBA Energia and Pollarix ceased to recognize assets, liabilities, revenues and expenses, starting to recognize it as an associate evaluated by the equity method, since it still has significant influence over this entity. In the deconsolidation, the already existing goodwill of Enercan in the amount of R$ 31 was reclassified and is presented under “Investments” (Note 16 (c)).

The following table shows the assets and liabilities of Enercan that are no longer consolidated, proportional to the equity interests of CBA Energia and Pollarix until November 30, 2022:

All amounts in millions of brazilian real unless otherwise stated

Balance sheet on November 30, 2022	
Assets	
Current assets	50
Financial investments	55
Trade receivables	1
Taxes recoverable	1
Other assets	107
Non-current assets	
Deferred income tax and social contribution	8
Other assets	2
Property, plant and equipment	175
Intangible assets	56
	241
Total assets	**348**
Liabilities and equity	
Current liabilities	
Trade payables	6
Taxes payable	48
Dividends payable	52
Use of public assets	1
Other	4
	111
Non-current liabilities	
Provision	2
Use of public assets	10
Deferred income tax and social contribution	28
Other	2
	42
Total liabilities	**153**
Equity	**195**
Total liabilities and equity	**348**

(q) Issuance of carbon credits – CBA and Reservas Votorantim ("Reservas")

On August 30, 2022, the first issue of 316,000 (three hundred and sixteen thousand) carbon credits was carried out by CBA, in partnership with the company Reservas.

Reservas is a enterprise in the Company's portfolio that specializes in land management and nature-based solutions for traditional and new economy businesses, and manages CBA's environmental areas.
The initiative was made possible through Legado Verdes do Cerrado, a private sustainable development reserve located in Niquelândia (GO) and owned by CBA, with 32 thousand hectares.
The credits were audited and registered by the Verra platform, which created the Verified Carbon Standards (VCS), standards that are considered a global reference in the carbon market.

On December 31, 2022, CBA had 316,000 (three hundred and sixteen thousand) tons not yet approved, referring to carbon credits generated in 2017 and 2021, for which the subsidiary did not make any sales until December 31, 2022. Revenues are recognized only when the carbon credit is sold.

(r) Funding via bilateral operations and issue bonus redemption - CBA

On August 30 and September 2, 2022, the subsidiary CBA entered into three loan agreements through export financing lines in the aggregate amount of US$ 96 million (R$ 498).

The average cost of funding is SOFR + 3.03% p.a. and is conditioned to annual targets for reducing the emission of greenhouse gases in the production of primary aluminum, which may result in an increase or decrease in cost depending on whether or not the established targets are achieved.

The average term of these funding is 5.6 years, with final maturity in August and September 2027 and September 2029.

On September 26, 2022, the subsidiary CBA redeemed the entire outstanding balance of the bonds in the amount of US$ 79 million (R$ 408), aiming at reducing the concentration of maturities in 2024. A premium in the amount of R$ 2, recognized in income, in the financial expenses line.

On June 14, 2022, the subsidiary CBA had already carried out the repurchase in the secondary market and the partial cancellation of the bonds in the amount of US$ 11 million.

Adding the two operations together, the amount of principal paid in the period was R$462, in addition to accrued and due interest of a total of R$ 16. These bonds were guaranteed by the Company.

In November 2022, the subsidiary CBA entered into an agreement with Financiadora de Estudos e Projetos (FINEP) to finance innovation and research and development projects in the amount of R$ 109 and final maturity in 2032. In December 2022, the first release referring to this loan in the amount of R$ 36.

In December 2022, the subsidiary CBA entered into two contracts with the National Bank for Economic and Social Development (BNDES) to finance projects to modernize the furnaces at CBA and the implementation of a scrap processing line at Metalex in the aggregate amount of R$ 611. The financing will be through the Finem Fundo Clima and Finem Meio Ambiente lines, with total terms of 12 and 20 years and final maturity in 2034 and 2042, respectively. The release of funds will occur throughout the execution of the projects and there has been no release so far.

(s) Hiring of a revolving credit line (Committed Credit Facility) – CBA

On September 22, 2022, the subsidiary CBA completed obtaining a revolving credit facility (Committed Credit Facility) in the amount of US$ 100 million. This transaction replaced the Company's current line of US$ 200 million, in which CBA was one of the parties.

In this operation, the CBA must measure and report the annual greenhouse gas emissions indicator until 2025, and if the defined targets are achieved, it will have a cost benefit. On the other hand, if they are not, there will be an increase in its annual cost. This line of credit brings even more transparency and demonstrates the Company's commitment to reducing greenhouse gas emissions. The operation relied on the opinion of Sustainalytics, a global external consultancy specializing in research, ratings and ESG data for financial operations (Second-Party Opinion), which evaluated the environmental indicator used.

This operation has a five-year term and can be accessed at any time, and to date this revolving credit has not been used.

All amounts in millions of brazilian real unless otherwise stated

(t) Acquisition of business in southern Spain - VCEAA

On November 2, 2022, the indirect subsidiary VCEAA completed the acquisition of Heidelberg Cement's business in southern Spain, which includes a modern integrated cement plant, three aggregate quarries and eleven precast concrete plants. The cement plant is located in the city of Málaga and has an installed production capacity of 1.4 million tons of cement per year. This acquisition is in line with the subsidiary's growth and positioning strategy and will reinforce its presence in Spain and the Iberian Peninsula in general. The acquisition also generates significant synergy with existing assets and represents advances in the subsidiary's decarbonization journey.

With the conclusion of this acquisition, the installed production capacity in Spain increases to 6 million tons of cement per year, through the operation of six integrated cement plants.

The initial acquisition price of the investment was set at R$ 485, with a price adjustment of R$ 5, totaling a transferred consideration of R$ 490.

The net assets of the acquired investment are detailed below:

	11/02/2022
Cash and cash equivalents	18
Trade receivables	65
Inventory	63
Other	9
Propriedade para investimento	70
Property, plant, and equipment	342
Intangible assets	38
Intangible assets - CO2 emission rights	19
Right to use assets arising from leases	9
Borrowing	(7)
Trade payables	(69)
Provision	(36)
Leasing liabilities	(10)
Deferred income tax and social contribution	(15)
Acquired identifiable net assets	**496**
Gain on investment acquisition	(6)
Total assets and liabilities	**490**

As indicated in IFRS 3, the subsidiary has 12 months to fulfill the allocation of the purchase price ("PPA") of the assets and liabilities acquired, and to complete the initial acquisition accounting. The fair value balances above are presented as provisional until the PPA work is finalized.

Acquired Receivables

The fair value of the acquired receivables is R$ 65 (EUR 12 million). The contractual gross value of the receivables to be collected is R$ 72 (EUR 14 million), with an expected loss provision of R$ 7 (EUR 1 million) recognized in the acquisition.

Contribution to profit and revenue

The acquired business contributed revenue of R$ 59 (EUR 11 million) and net profit of R$ 34 (EUR 7 million) to the indirect subsidiary VCEAA for the period from November 1 to December 31, 2022.

Acquisition-related costs

The acquisition-related costs, in the amount of R$ 11 (EUR 2 million), of which R$ 9 (EUR 2 million) are included in the income statement in Note 29 "Other operating results".

(u) Indemnity agreement for the reversal of assets of the Três Irmãos hydroelectric power plant ("UHE") of the affiliate CESP

After several infra-legal acts providing for the exploitation of the Três Irmãos HPP, until then carried out by CESP, controlled by the Auren joint venture, the Ministry of Mines and Energy ("MME") determined that ANEEL promote, in March 28, 2014, auction for the concession of the Três Irmãos HPP.
Due to the end of the concession for the operation of the HPP, it was defined, through Interministerial Ordinance No. 129/14, issued jointly by the MME and the Ministry of Finance ("MF"), the indemnity amount to be paid to the affiliate CESP , "referenced to June 2012 prices, considering the accumulated depreciation and amortization from the date of entry into operation of the facilities, until March 31, 2013". The indemnity amount was established at R$ 1,717 (base date June 2012), which would be paid in seven years.

Understanding that the proposed value did not reflect the reversible assets not yet depreciated and/or amortized, on April 7, 2014 the affiliate CESP expressed its opposition to Interministerial Ordinance No. 129/14, filing, on July 9, 2014, with a lawsuit for discuss the compensation due to the non-renewal of the concession.

In view of the existence of a contingent asset, in compliance with CPC 25, CESP made, in January 2013, an adjustment to reduce the recoverable value, in the amount of R$ 1,812 (disputed amount), starting to reflect the indemnity amount proposed by the granting power (uncontroversial value).

On December 7, 2022, CESP entered into a court agreement with the Federal Government, which provides for the receipt of compensation pursuant to the terms of Interministerial Ordinance MME/MF No. 129/2014, for the historical amount of R$ 1,717, duly updated by the rate of Special System of Liquidation and Custody ("SELIC") in the compound capitalization system, since June 15, 2012 to be paid in 84 monthly and consecutive installments, calculated according to the Constant Amortization System ("SAC"), with the start of payment of the first installment by October 15, 2023. Therefore, as of September 15, 2023, the entire balance restated on that date will begin to be recognized as principal and be restated by SELIC.

Based on the criteria established in the agreement, considering a no longer questionable right, disregarding the undisputed amount as a contingent asset, the amount of R$ 1,806 was recognized referring to monetary restatement, net of adjustment to present value,

Additionally, there was a reversal of impairment of indemnifiable assets, in the amount of R$634 and write-off of non-indemnifiable canal and sluice assets, in the amount of R$249, with a net impact of R$2,191 on CESP's result and impact of R$827 in the Company's results, recognized using the equity method.

(v) Early amortization of loans - VCEAA

Throughout 2022, the indirect subsidiary VCEAA early amortized a total amount of R$ 422 (EUR 80 million) of bilateral loan agreements entered into in 2020. The resources came from a loan raised under Law No. 4,131/1962 by the subsidiary VCSA. At the end of 2022, the remaining balance of the loans of VCEAA and its Spanish subsidiary was R$ 584 (EUR 105 million).

(w) ESG performance

The ESG agenda is one of the strategic pillars of the Company and its subsidiaries. For Votorantim, sustainability is based on influencing portfolio companies to adopt best practices, contributing to the long-term sustainability of the portfolio; integrating ESG criteria in the evaluation of companies to contribute to the monitoring of social, environmental, and governance risks; and transparently and consistently reporting its actions and those of portfolio companies.

Below are the ESG initiatives of the Company and its investments during the year ended December 31:

The Company's history of investments in renewables was presented in FCLTGlobal's 5th Anniversary Book. The case study mentioned the pioneering wind-solar hybrid project being developed in Brazil by Auren. FCLTGlobal is a non-profit organization that develops studies, research, and tools to promote long-term investments and strategies.

The subsidiary CBA was recognized as the only aluminum company in the world to have carbon emission reduction targets validated by the Science Based Targets Initiative ("SBTi"). And, it raised R$ 96.5 million through a loan linked to sustainability. The operation is linked to the annual goal of reducing greenhouse gas emissions in the production of primary aluminum and reinforces its commitment to climate change and its mandate to guarantee the supply of low-carbon aluminum.

The subsidiary VCSA also had its target for reducing CO2 emissions in Scope 1 approved by the SBTi with 475kg of CO2 per ton of cement by 2030, in line with the objectives of the Paris Agreement.

The joint venture Citrosuco S.A. Agroindústria (“Citrosuco”) has published its ESG 2030 commitments which highlights its goal of achieving a 100% sustainable supply chain.

Reservas Votorantim launched a public consultation for a new methodology for measuring ecosystem services in the Atlantic Forest, including forest carbon, called PSA Carbonflor. The objective of this methodology is to create alternatives aimed at conservation, biodiversity and the generation of carbon credits in the Atlantic Forest. Subsidiary Nexa announced long-term environmental, social and governance (“ESG”) commitments. Aligned with the Paris Agreement and focused on reducing the impacts of climate change, Nexa plans to achieve net zero emissions of greenhouse gases (“GHG”) by 2050 and net neutrality – the balance between emissions and carbon absorption – by 2040.

The subsidiaries VCSA and CBA, and the Auren joint venture with the objective of contributing to the evolution of the voluntary carbon market, joined the Company and other companies from different sectors in the “Brazilian Initiative for the Voluntary Carbon Market”. The group's objective, coordinated by McKinsey & Company, is to structure key actions to develop the voluntary carbon market in Brazil and contribute to the global market of high integrity carbon credits.

The CDP (Carbon Disclosure Project) recognized the portfolio companies for their commitments to transparency and reporting of GHG emissions. The subsidiary VCSA obtained an A- grade, while the subsidiary CBA was awarded an A, becoming part of the 'A list'. Subsidiary Nexa achieved grade C and jointly controlled Citrosuco improved its grade from B to A-.

(x) Impacts of the Russian government's invasion of Ukraine and sanctions on Russia and allied countries

The Company is monitoring the situation resulting from the conflict resulting from Russia's invasion of Ukraine, and the retaliatory measures by the global community that have created global security concerns and economic uncertainty, including the possibility of the expansion of regional or global conflicts, which have had and will likely continue to have adverse effects and social and economic impacts around the world.

As of the date of this report, we have not identified any relevant impacts on the Company's operations, financial situation, or cash flow related to the conflict. The Company and its affiliates cannot measure the future impact that the conflict may have on their businesses and operations, and continues to monitor the situation promptly.

2 Presentation of the consolidated financial statements

2.1 Basis of preparation

(a) Consolidated financial statements

The consolidated financial statements have been prepared and are being presented in accordance with the accounting practices adopted in Brazil, in effect on December 31, 2022, which includes the pronouncements issued by the Accounting Pronouncements Committee (“CPCs”) and in accordance with the International Financial Reporting Standards (International Financial Reporting Standards (“IFRS”) issued by the International Accounting Standards Board (IASB) and interpretation of (“IFRIC”) and evidence all relevant information specific to the financial statements and are consistent with those used by Management in its management.

The Company voluntarily discloses its consolidated statement of value added, according to the accounting practices adopted in Brazil, applicable to public companies and presented as an integral part of these financial statements. In accordance with international practice, this statement is presented as additional information, without prejudice to the set of financial statements.

The financial statements require the use of certain critical accounting estimates. It also requires management to exercise judgment in the process of applying the Company’s accounting practices. The areas involving a higher degree of judgment or complexity or areas where assumptions and estimates are significant to the consolidated financial statements are disclosed in Note 4.

(b) Approval of the financial statements

The Board of Directors approved the consolidated financial statements for issue on April 4, 2023.

2.2 Consolidation

(a) Main controlled companies, affiliates, and jointly controlled enterprises.

Subsidiaries are fully consolidated from the date on which control is transferred to the Company.

Unrealized balances and gains on transactions between companies are eliminated. Unrealized losses are also eliminated, unless the transaction provides evidence of a loss (impairment) of the transferred asset. In the acquisition, the accounting policies of the subsidiaries are changed when necessary, to ensure consistency with the policies adopted by the Company.

The consolidated financial statements were prepared separately from the individual financial statements, issued on April 4, 2023.

Joint operations are accounted for in the financial statements in order to represent the Company's contractual rights and obligations. Therefore, the assets, liabilities, revenues and expenses related to its interests in joint operations are individually accounted for in its financial statements.

Investments in associates and joint ventures are accounted for using the equity method and are initially recognized at cost.

The Company's investments in associates and joint ventures includes goodwill identified on acquisition, net of any accumulated impairment loss.

Dilution gains and losses on investments in associates and joint ventures are recognized in the statement of income.

All amounts in millions of brazilian real unless otherwise stated

Main consolidated companies	Percentage of		Headperiods	Main activity
	2022	2021		
Subsidiaries				
Acerbrag S.A.	100.00	100.00	Argentina	Steel
Altre Empreendimentos e Investimento Imobiliários S.A.	100.00	100.00	Brazil	Real estate
Cementos Artigas S.A.	51.00	51.00	Uruguay	Cement
Companhia Brasileira de Alumínio	67.89	75.87	Brazil	Aluminum
Compañia Minera Atacocha S.A.A.	58.85	58.85	Peru	Mining
Janssen Capital B.V.	100.00	100.00	Netherlands	Holding
Nexa Recursos Minerais S.A.	64.67	64.67	Brazil	Zinc
Nexa Resources Cajarmarquilla S.A.	64.61	64.61	Peru	Zinc
Nexa Resources Perú S.A.A	51.77	51.77	Peru	Mining
Nexa Resources S.A.	64.67	64.67	Luxembourg	Holding
Silcar Empreendimentos, Comércio e Participações Ltda.	100.00	100.00	Brazil	Holding
St. Marys Cement Inc.	83.00	83.00	Canada	Cement
Votorantim Cement North America Inc.	83.00	83.00	USA	Holding
Votorantim Cimentos EAA Inversiones, S.L.	100.00	100.00	Spain	Holding
Votorantim Cimentos International S.A.	100.00	100.00	Luxembourg	Holding
Votorantim Cimentos N/NE S.A.	100.00	100.00	Brazil	Cement
Votorantim Cimentos S.A.	100.00	100.00	Brazil	Cement
Votorantim Energia Ltda.	100.00	100.00	Brazil	Holding
Votorantim Finanças S.A.	100.00	100.00	Brazil	Finance
Votorantim FinCO GmbH	100.00	100.00	Austria	Trading
Votorantim RE	100.00	100.00	Luxembourg	Insurance
Joint operations				
Baesa - Energética Barra Grande S.A.	15.00	15.00	Brazil	Electric power
Great Lakes Slag Inc.	50.00	50.00	Canada	Cement
Exclusive investment funds				
Pentágono VC Multimercado Investment Fund – Private Credit	100.00	100.00	Brazil	Finance
Pentágono CBA Multimercado Investment Fund – Private Credit	100.00	100.00	Brazil	Finance
Odessa Multimercado Private Credit	94.19	94.19	Brazil	Finance
Odessa Multimercado Private Credit Investment Fund VC	100.00	100.00	Brazil	Finance
Odessa Multimercado Private Credit Investment Fund VM	100.00	100.00	Brazil	Finance
Main non-consolidated companies				
Associates				
CCR S.A.	10.33		Brazil	Infrastructure
Cementos Avellaneda S.A.	49.00	49.00	Argentina	Cement
Campos Novos Energia S.A.	47.88	44.76	Brazil	Electric power
Alunorte - Alumina do Norte S.A. (i)	3.03	3.03	Brazil	Mining
IMIX Empreendimentos Imobiliários Ltda.	25.00	25.00	Brazil	Mining
Mineração Rio do Norte S.A.	10.00	10.00	Brazil	Mining
Supermix Concreto S.A.	25.00	25.00	Brazil	Concrete
Cementos Especiales de las Islas S.A.	50.00	50.00	Spain	Cement
Joint ventures				
Auren Energia S.A.	37.34	50.00	Brazil	Electric power
Banco Votorantim S.A.	50.00	50.00	Brazil	Finance
Citrosuco GmbH	50.00	50.00	Austria	Agribusiness
Citrosuco S.A. Agroindústria	50.00	50.00	Brazil	Agribusiness
Juntos Somos Mais Fidelização S.A.	45.00	45.00	Brazil	Services
Hutton Transport Ltda.	25.00	25.00	Canada	Transportation
Midway Group, LLC.	50.00	50.00	USA	Cement
RMC Leasing, LLC.	50.00	50.00	USA	Equipment leasing

(i) The participation in the voting capital of Alunorte is 3.52%

(b) Transactions with non-controlling interests

The Company treats transactions with non-controlling shareholders as transactions with owners of the Company's assets. For purchases of non-controlling interests, the difference between any consideration paid and the acquired portion of the carrying amount of the subsidiary's net assets is recorded in equity. Gains or losses arising from the sale of non-controlling interests are also recorded directly in equity, in the “Retained earnings” account.

(c) Loss of control of subsidiaries

When the Company ceases to have control, any retained interest in the entity is remeasured to its fair value, with the change in book value recognized in the income statement. The amounts previously recognized in equity value adjustments are reclassified to the result.

2.3 Foreign currency conversion

(a) Functional and presentation currency of the financial statements

The functional currency of the Company is the Brazilian Real ("R$" or "BRL”).

(b) Transactions and balances

Foreign currency transactions are translated into brazilian real. When items are remeasured, the exchange rates prevailing at the dates of the transactions or the dates of valuation are used. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year exchange rates of monetary assets and liabilities denominated in foreign currencies are recognized in the statement of income, except when deferred in equity as net investment hedges.

(c) Subsidiaries with a different functional currency

The results and financial positions of all the Company entities that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

(i) Assets and liabilities for each balance sheet presented are translated at the closing rate at the date of that balance sheet;
(ii) Income and expenses for each statement of income are translated at average exchange rates;
(iii) All resulting exchange differences are recognized as a separate component of equity, in "Carrying value adjustments".

The amounts presented in the cash flow are extracted from the translated movements of the assets, liabilities and profit or loss, as detailed above.

On consolidation, exchange differences arising from the translation of the net investment in foreign operations, and of borrowings and other foreign currency instruments designated as hedges of such investments, are recognized in equity. When a foreign operation is partially disposed of or sold, exchange differences that were recorded in equity are recognized in the statement of income as part of the gain or loss on sale.

Goodwill and fair value arising from the acquisition of an entity abroad are treated as assets and liabilities of the entity abroad and converted at the closing rate. Below are the functional currencies defined for the significant foreign subsidiaries:

All amounts in millions of brazilian real unless otherwise stated

Company	Country	Functional currency	Main activity
Acerbrag S.A.	Argentina	Argentine Peso	Steel
St. Marys Cement Inc - "St. Mary's"	Canada	Canadian Dollar	Cement
Votorantim Cimentos EAA Inversiones, S.L. - "VCEAA"	Spain	Euro	Cement
Nexa Resources Cajamarquilla S.A.	Peru	US Dollar	Zinc
Nexa Resources Perú S.A.A.	Peru	US Dollar	Mining
Nexa Resources S.A.	Luxembourg	US Dollar	Holding
Votorantim Cimentos International S.A. - "VCI"	Luxembourg	US Dollar	Holding
Votorantim FinCo GmbH	Austria	US Dollar	Trading
Janssen Capital B.V.	Netherlands	US Dollar	Holding

3 Changes in accounting policies and disclosures

3.1 New standards issued and amendments to the accounting standards adopted by the Company and its subsidiaries

New accounting standards, interpretations, and amendments to accounting standards have been published, but they are not yet effective. We intend to adopt the new standards, interpretations, and amendments, if applicable, when they become effective. The Company and its subsidiaries have conducted a preliminary analysis of the applicability of these changes and have identified the impacts on their accounting policies resulting from the change in CPC 32/IAS 12 "Income Taxes," described below:

(a) Amendment to CPC 32 / IAS 12 "Taxes on Income"

The amendment requires the recognition of deferred taxes on transactions that give rise to the initial recognition of an asset or liability, resulting in equal amounts of taxable and deductible temporary differences, such as lease agreements or obligation to decommission assets. The amendment is effective for periods beginning January 1, 2023 and the subsidiary VCSA has identified additional temporary differences in certain subsidiaries, which will lead to the recognition of deferred tax assets and liabilities in the amounts of R$ 14 and R$ 16, respectively.

(b) Other amendments

Other standards, interpretations and amendments to accounting standards have been published, however, they are not yet mandatory for the year ended December 31, 2022 and were not early adopted. The Company understands that the adoption of these standards, interpretations and amendments will not have a material impact on the preparation of financial statements for the current year and future periods.

4 Critical accounting estimates and judgments

Based on assumptions, the Company and its subsidiaries make estimates regarding the future. By definition, accounting estimates and judgments are continuously reviewed and are based on historical experience and other factors, including expectations of future events, which are considered reasonable for the circumstances. Revisions to the estimates are recognized prospectively.

The accounting estimates will rarely be the same as the actual results. Estimates and assumptions that present a significant risk and are likely to cause a material adjustment to the carrying amounts of assets and liabilities for the next fiscal year are described in the respective notes below:

(i) Fair value of financial instruments and derivatives (Note 6.1.1);
(ii) Trade receivables (Note 11);
(iii) Inventory (Note 12);
(iv) Investments (Note 16);
(v) Property, plant and equipment (Note 17);
(vi) Intangible assets (Note 18);
(vii) Lease liabilities (Note 20);

(viii) Current and deferred income and social contribution taxes (Note 22);
(ix) Provision (Note 23);

4.1 Impairment of goodwill and non-current assets

(a) Accounting policy

Non-financial assets with indefinite useful lives, such as goodwill, are not subject to amortization, and the impairment test is performed at least annually. Assets subject to depreciation or amortization undergo impairment testing periodically or when events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. An impairment loss is recognized as an expense in the "Other operating results" line item (Note 29) to the extent that the carrying amount of the asset exceeds its recoverable amount. The recoverable amount is the higher of the asset's fair value less costs to sell or its value in use. For the purpose of assessing recoverable amount, assets are grouped at the lowest level for which there are identifiable cash flows (cash-generating units - CGUs). Non-financial assets, except goodwill, that have suffered impairment, are subsequently reviewed for possible reversal of the impairment provision at the balance sheet date.

Goodwill resulting from a business combination is allocated to a CGU or group of CGUs, with each CGU or group of CGUs being the lowest level at which the goodwill is monitored for internal management purposes and not being larger than an operating segment. Goodwill related to operations in North America and in Europe, Asia, Africa, and Latin America is allocated to each operating segment. See more details in Note 18 (b) for the goodwill allocation detail.

When an impairment loss is reversed, the carrying amount of the asset or CGU is adjusted to the revised estimate of its recoverable amount, but in such a way that the revised carrying amount does not exceed the carrying amount that would have been determined if no impairment loss had been recognized for the asset or CGU in previous years. The reversal of an impairment loss is recognized as revenue in the "Other operating results" line item (Note 29).

(b) Impairment test

An impairment test is performed at least annually for all CGUs to which goodwill is allocated, as well as for other CGUs that do not contain goodwill but present indicators of impairment. The recoverable amount is measured by the discounted cash flow model and determined based on the value in use of each CGU. The process of estimating these values involves the use of assumptions, judgments, and estimates of future cash flows and represents the best estimate of the Company and its subsidiaries.

These calculations use projections of cash flows after taxes based on the Strategic Planning approved by the Board of Directors of the Company and its subsidiaries, covering a period of five years. A period of up to ten years may be considered in specific circumstances, such as economic crises, to better reflect the business and economic cycle of the CGU. The perpetuity cash flows are calculated using the projections of the last year (with zero growth rate).

The Company and its subsidiaries considered the projected sales price and volume and the discount rate as the main assumptions for calculating the recoverable amount of the CGUs. The projections were made based on past performance and future market development expectations. The discount rates used are after taxes and reflect specific risks related to the operating segment (geographical region) or the CGU being tested.

(c) Impairment test results – Nexa, VCSA, CBA, and CESP

The subsidiary Nexa recognized, during the year 2022, the reversal of impairment in its Cash Generating Unit (“CGU”) Cerro Pasco in the amount of R$ 527 and an impairment recognition of R$ 461 in the Peruvian mining segment recognized in the item "Other operating results" (Note 29).

For the subsidiary VCSA, impairment tests did not result in material losses to be recognized. The subsidiary recognized an increase in impairment loss of R$ 5 in the CGU Cajamar (Brazil operating segment).

During the year 2022, the subsidiary CBA, based on qualitative analysis, did not identify indications of loss of recoverable value during impairment tests, except for impairment related to the adjustment of obligations with asset decommissioning (Asset Retirement Obligation - "ARO") added to fixed assets, referring to the Niquelândia unit (Note 1.1 (n)).

The affiliate CESP reversed impairment of indemnifiable assets, in the amount of R$ 634, referring to the indemnification agreement of the assets of the Três Irmãos HPP, as shown in Note 1.1 (u).

5 Social and environmental risk management

The Company, through its subsidiaries and affiliates, operates in several segments and, therefore, its activities are subject to numerous national and international environmental laws, regulations, treaties and conventions, including those that regulate the discharge of materials into the environment, which require the removal and cleaning of contamination from the environment, or relating to environmental protection. Violations of existing environmental regulations expose violators to substantial fines and pecuniary sanctions and may require technical measures or investments to ensure compliance with mandatory emission limits.

The Company and its subsidiaries periodically carry out surveys in order to identify potentially impacted areas and record, based on the best cost estimate, the estimated amounts for investigation, treatment and cleaning of potentially impacted locations.

6 Financial risk management

6.1 Financial risk factors

The activities of the Company and its subsidiaries expose them to a variety of financial risks, namely: (a) market risk (including currency, commodity price and interest rate risk), (b) credit risk and (c) liquidity risk.

A significant portion of the products sold by the Company and its subsidiaries, such as aluminum, nickel and zinc are commodities, with prices pegged to international indexes and denominated in US Dollars. Their costs, however, are mainly denominated in brazilian real, and therefore, there is a mismatch of currencies between revenues and costs. Additionally, the Company and its subsidiaries have debts linked to different indexes and currencies, which may have an impact on their cash flow.

In order to mitigate the various effects of each market risk factor, the Company and its subsidiaries follow a Market Risk Management Policy, approved by the Finance Committee, with the objective of establishing governance and the overall guidelines of the process of managing these risks, as well as the metrics for their measurement and monitoring.

The financial risk management process aims to protect the cash flow and its operational (revenues and costs) and financial (financial assets and liabilities) components against adverse market events, such as fluctuations in the prices of currencies, interest rates and commodity prices, and against adverse credit events. In addition, it aims to preserve liquidity.

The following financial instruments may be taken out in order to mitigate and manage risk: conventional swaps, call options, put options, collars, currency futures contracts, interest or commodities and non-deliverable forward contracts. Strategies that include simultaneous purchases and sales of options are authorized only when they do not result in a net short position in volatility of the underlying asset. The Company and its subsidiaries do not carry out transactions involving financial instruments for speculative purposes.

All amounts in millions of brazilian real unless otherwise stated

(a) Market risk

(i) Foreign exchange risk

The Company and its subsidiaries have certain investments in foreign operations, the net assets of which are exposed to foreign exchange risk. The foreign exchange exposure arising from the Company's and its subsidiaries' participation in foreign operations is mainly hedged by borrowing in the same currency as these investments, classified as net investment hedges.

Presented below are the accounting balances of assets and liabilities indexed to a foreign currency at the closing date of the balance sheets:

	Note	2022	2021
Assets denominated in foreign currency			
Cash and cash equivalents		2,353	3,554
Financial investments		90	95
Derivative financial instruments		152	239
Trade receivables		421	661
Related parties		15	6
		3,031	**4,556**
Liabilities denominated in foreign currency			
Borrowing		9,808	11,044
Derivative financial instruments		203	314
Lease liabilities		605	640
Confirming payables		102	414
Trade payables		1,925	1,783
Deferred revenue - silver streaming		690	822
		13,333	**15,017**
Net exposure		**(10,302)**	**(10,462)**

(ii) Hedge of net investments in foreign operations

Hedge of net investment in operations abroad is accounted for similarly to cash flow hedge.

Any gain or loss on the hedging instrument related to the effective portion of the hedge is recognized in equity, under "Carrying value adjustments". The gain or loss related to the ineffective portion is immediately recognized in profit or loss. Accumulated gains and losses in shareholders' equity are included in profit or loss for the period when the investment abroad is made or sold.

The investments presented in the following table were designated as hedged objects and the debt portion of the Company and its subsidiaries CBA, Votorantim Cimentos International S.A. ("VCI") and St. Marys, denominated in euros and dollars.

										2022
	Investor					Hedge item			Instrument	Loss
Entity	Currency	Investment	Currency	Designated percentage	Designated net amount	Amount in reais	Currency	Original amount	Amount in reais	Other comprehensive income
St. Marys Cement Inc. (Canadá)	CAD	VCNA US, Inc.	USD	44.96%	500	2609	USD	500	2609	(163)

	Investor					Hedge item			Instrument	Gain
Entity	Currency	Investment	Currency	Designated percentage	Designated net amount	Amount in reais	Currency	Original amount	Amount in reais	Other comprehensive income
St. Marys Cement Inc. (Canadá)	CAD	VCNA US, Inc.	USD	44.41%	500	2790	USD	500	2790	17
Votorantim S.A.	BRL	Nexa Resources Cajamarquilla S.A.	USD	10%	92	512	USD	90	500	41
										58

The Company and its subsidiaries document and evaluate the effectiveness of the investment hedge operations prospectively, as required by CPC 48 / IFRS 9 - "Financial instruments".

(iii) Cash flow and fair value interest rate risk

The interest rate risk arises from the fluctuations of each of the main indexes of interest rates from borrowing and from financial investments, which have an impact on the payments and receipts of the Company and its subsidiaries. Borrowing at fixed rates exposes the Company and its subsidiaries to fair value interest rate risk.

(iv) Commodity price risk

The Financial Policies of the Company's operating subsidiaries establishes guidelines to mitigate the risk of fluctuations in commodity prices that have an impact on the cash flow of the Company's operating subsidiaries.

The exposure to each commodity price considers the monthly projections of production, purchases of inputs and flows of maturities of the related hedges. Hedge transactions, when executed, are classified into the following categories:

Fixed-price commercial transactions - hedge transactions that switch, from fixed to floating, the price contracted in commercial transactions with customers interested in purchasing products at a fixed price;

Hedges for "quotation periods" - hedges that set a price for the different "quotation periods" between the purchases of certain inputs (metal concentrate) and the sale of products arising from the processing of these inputs;

Hedges for "costs of inputs" - intended to ensure protection against volatility in the prices or costs of its operating subsidiaries for commodities such as oil and natural gas;

Hedges for "operating margin" - intended to set the operating margin for a portion of the production of certain operating subsidiaries.

(b) Credit risk

Derivative financial instruments and financial investments create exposure to credit risk of counterparties and issuers. The Company and its subsidiaries adopt a policy of working with issuers which have, at a minimum, been assessed by two of the following three rating agencies: Fitch Ratings, Moody's or S&P Global Ratings. The minimum rating required for the counterparties is "A" (Brazilian scale) or "BBB-" (international scale), or equivalent.

For financial assets where issuers do not meet the minimum credit risk ratings, criteria proposed by the Finance Committee are applied as an alternative, criteria approved by the Board of Directors.

The credit quality of financial assets is disclosed in Note 8. The ratings disclosed in this Note always represent the most conservative ratings of the agencies in question.

The pre-settlement risk methodology is used to assess counterparty risk on derivatives transactions, determining (via Monte Carlo simulations) the likelihood of a counterparty not honoring the financial commitments defined by the contract. The use of this methodology is described in the VSA Financial Policy.

(c) Liquidity risk

The following table analyzes the financial liabilities of the Company and its subsidiaries, by maturity, corresponding to the period remaining from the balance sheet date up to the contractual maturity date. The amounts disclosed in the table represent the undiscounted contractual cash flows, and these amounts may not be reconciled with the amounts disclosed in the balance sheet.

All amounts in millions of brazilian real unless otherwise stated

	Up to one year	From one to three years	From three to five years	From five to ten years	From ten years	Total
At December 31, 2022						
Borrowing (i)	1,795	2,449	15,711	8,683	3,489	32,127
Derivative financial instruments	326	378	194	67	1	966
Financial instruments - offtake agreement	9	78	27			114
Lease liabilities	224	206	109	124	614	1,277
Confirming payables	3,219					3,219
Trade payables	7,406					7,406
Dividends payable	1,262					1,262
Related parties		141				141
Use of public assets	145	250	405	1,029	1,897	3,726
	14,386	**3,502**	**16,446**	**9,903**	**6,001**	**50,238**
At December 31, 2021						
Borrowing (i)	1,826	2,331	10,400	14,869	6,235	35,661
Derivative financial instruments	556	272	123	102	29	1,082
Lease liabilities	371	235	277	637	31	1,551
Confirming payables	3,405					3,405
Trade payables	6,914					6,914
Dividends payable	1,624					1,624
Related parties		75				75
Use of public assets	128	181	326	829	1,960	3,424
	14,824	**3,094**	**11,126**	**16,437**	**8,255**	**53,736**

(i) For "borrowing" balances, financial charges are projected until the final maturity of the contracts. These figures do not consider an adjustment to the fair value of the operations contracted in Law No. 4131/1962.

6.1.1 Derivatives contracted

Accounting policy

Initially, derivatives are recognized at fair value on the date of their contracting and are subsequently re-measured at their fair value.

The fair value of financial instruments that are not traded on active markets is determined using valuation techniques. The Company and its subsidiaries use their judgment to choose between different methods and to define assumptions that are mainly based on the market conditions existing at the balance sheet date.

The method for recognizing the resulting gain or loss depends on whether the derivative is designated or not as a hedge instrument in cases of adoption of hedge accounting.

This being the case, the method depends on the nature of the item being hedged. The Company and its subsidiaries adopt hedge accounting and designate certain derivatives as:

(i) Cash flow hedge

With a view to ensuring a fixed operating margin in brazilian real for a portion of the production of the metal businesses, the subsidiaries enter into commodity forward contracts (zinc, aluminum and nickel) on sales of certain commodities combined with the sale of US Dollar forward contracts. There is also the quotation period hedge, which seeks to equalize the periods between the purchase of concentrate and the sale of the final product of the non-integrated plants, in order to mitigate exposures. These subsidiaries adopt hedge accounting for the derivative instruments entered into for this purpose.

The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges is recognized in equity within "Carrying value adjustments". The gain or loss relating to the ineffective portion is recognized as “Operating income (expenses)”. The amounts recognized in equity are recorded in the statement of income (in the same line item affected by the transaction originally hedged) upon realization of the hedged exports and/or sales referenced to London Metal Exchange ("LME") prices.

(ii) Fair value hedges

With the objective of maintaining the flow of the metal businesses' operating revenue pegged to LME prices, the subsidiaries enter into hedging transactions under which they convert sales at fixed prices to floating prices in commercial transactions with customers interested in purchasing products at a fixed price. Changes in the fair values of derivatives that are designated derivatives are recognized in the income for the year.

All amounts in millions of brazilian real unless otherwise stated

(a) Effects of derivative financial instruments on the balance sheet and cash flow

The following are the derivative financial instruments and the objects protected by them:

	Principal Value			2021	2022 Changes in fair value										2022	Fair value at maturity			
Programs	2022	2021	As per unit	Total (net between assets and liabilities)	Inventory	Intangible asset	Net revenue (expense) from products sold and services rendered	Cost of products sold and services rendered	Other operating income (expenses), net	Finance results, net	Foreign exchange variation	Other comprehensive income	Reclassification of financial instrument	Gain (loss) Realized	Total (net between assets and liabilities)	2023	2024	2025	2026+
Hedges for sale of zinc at a fixed price																			
Zinc forward	8,297	8,787	ton	19			(15)		2					5	1	1			
				19			(15)		2					5	1	1			
Hedges for mismatches of quotational period																			
Zinc forward	209,319	194,272	ton	(55)	(6)		(20)	108	3			(7)		35	(12)	(12)			
				(55)	(6)		(20)	108	3			(7)		35	(12)	(12)			
Operating margin hedging																			
Aluminum forward		57,200	ton	(217)			(190)					132		(275)					
USD forward		120	USD million	3			51					(2)		52					
				(214)			(139)					130		(223)					
Foreign exchange risk																			
Turkish Lira Term (USD/TRY)	6	4	USD million	2						1				5	(2)	(2)			
Currency NDF										(19)				(19)					
				2						(18)				(14)	(2)	(2)			
Interest rates risk																			
LIBOR floating rate vs. CDI floating rate swaps	50	200	USD million	192						(160)		3		22	13			(15)	28
IPCA floating rate vs. CDI floating rate swaps	1,247	1,236	BRL	(15)						(77)				(71)	(21)			(85)	64
USD vs. CDI floating rate swaps	330	100	USD million	29						(283)		(8)		(105)	(157)			(169)	12
IPCA floating rate vs. USD swaps	160	160	BRL	(68)						39				4	(33)			(4)	(29)
Swaps floating rate vs. fix rate in CDI	7		BRL							(7)					(7)		(7)		
				138						(488)		(5)		(150)	(205)		(7)	(273)	75
Hedge of operational contracts																			
IPCA floating rate vs. USD swaps	823	823	BRL	(19)						156					137			33	104
				(19)						156					137			33	104
Total derivative financial instruments				**(129)**	**(6)**		**(174)**	**108**	**5**	**(350)**		**118**		**(347)**	**(81)**	**(13)**	**(7)**	**(240)**	**179**
Other derivative financial instruments																			
Offtake agreement	30,810		ton			(208)			127		(33)				(114)	(9)	(18)	(18)	(69)
Derivative financial instruments - Put option		4,704	BRL	4,704									(4,704)						
				4,704		(208)			127		(33)		(4,704)		(114)	(9)	(18)	(18)	(69)
Total				**4,575**	**(6)**	**(208)**	**(174)**	**108**	**132**	**(350)**	**(33)**	**118**	**(4,704)**	**(347)**	**(195)**	**(22)**	**(25)**	**(258)**	**110**
Derivative financial asssets				5,657											885				
Derivative financial liabilities				(1,082)											(966)				
Offtake agreement															(114)				
Total derivative financial instruments				**4,575**											**(195)**				

In December 31, 2022, derivative transactions net of taxes recognized in "Equity valuation adjustment" totaled R$ 61 as Note 26 (b).

All amounts in millions of brazilian real unless otherwise stated

6.1.2 Estimated fair value

The main financial assets and liabilities are described below, as well as the assumptions for their valuation:

Financial assets - considering the nature and terms, the amounts recorded are close to the realizable values.

Financial liabilities - are subject to interest at the usual market rates. The market value was calculated based on the present value of the future cash disbursement, using interest rates currently available for issuing debts with similar maturities and terms.

The Company and its subsidiaries disclose the fair value measurements by the following hierarchy:

Level 1 - quoted prices (not adjusted) in active markets for identical assets and liabilities;

Level 2 - information, in addition to quoted prices, included in level 1 that are adopted by the market for the asset or liability, either directly (as prices) or indirectly (derived from prices), and;

Level 3 - inserts for assets or liabilities that are not based on data adopted by the market (that is, unobservable insertions).

The fair value of derivative financial instruments and loans, financing and debentures take into account the credit risk of the Company and its subsidiaries. The amount of change in fair value of the financial liability that is attributable to changes in credit risk is recorded in equity in other comprehensive income.

If classifying credit risk in other comprehensive income creates or increases an accounting mismatch in profit or loss, the entity shall present all gains or losses in profit or loss. The accumulated amount of changes in credit risk remain in other comprehensive income until the settlement of the financial instrument, when they are reclassified to retained earnings, without affecting income.

On December 31, 2022, financial assets measured at fair value and financial liabilities disclosed at fair value were classified in hierarchy levels 1 and 2, see classification below:

		Fair value measured based on		2022
	Note	Prices quoted in an active market (Level 1)	Valuation supported by observable prices (Level 2)	Fair value
Assets				
Cash and cash equivalents	9	7,052	3,474	10,526
Financial investments	10	1,675	1,673	3,348
Derivative financial instruments	6.1.1	885		885
Financial instruments - shares	13		1,330	1,330
		9,612	**6,477**	**16,089**
Liabilities				
Borrowing	19 (a)	10,962	11,017	21,979
Derivative financial instruments	6.1.1	960	6	966
Lease liabilities	20 (b)		1,277	1,277
Confirming payables			3,219	3,219
		11,922	**15,519**	**27,441**

All amounts in millions of brazilian real unless otherwise stated

		Fair value measured based on		2021
	Note	Prices quoted in an active market (Level 1)	Valuation supported by observable prices (Level 2)	Fair value
Assets				
Cash and cash equivalents	9	8,636	5,044	13,680
Financial investments	10	844	2,288	3,132
Derivative financial instruments	6.1.1		5,657	5,657
Financial instruments - shares	13	23	2,778	2,801
		9,503	**15,767**	**25,270**
Liabilities				
Borrowing (i)	19 (a)	17,282	9,200	26,482
Derivative financial instruments	6.1.1		1,082	1,082
Lease liabilities	20 (b)		1,551	1,551
Confirming payables			3,405	3,405
		17,282	**15,238**	**32,520**

(i) The amount of R$ 956 previously classified as Level 2 on December 31, 2021 (valuation technique supported by observable prices), was presented in these financial statements as Level 1 (prices quoted in an active market) after review by the subsidiary VCSA.

6.1.3 Sensitivity analysis

The main risk factors affecting the pricing of cash and cash equivalents, financial investments, loans and financing and derivative financial instruments are exposed to the fluctuation in the US Dollar, Euro, Turkish Lira, New Peruvian Sun, Argentine Peso and Bolivian interest rates, CDI, IPCA, TJLP, LIBOR, US Dollar coupon, commodity prices and electricity purchase and sale contracts. The scenarios for these factors are prepared using both market sources and specialized sources of information, in line with the Company's governance.

The scenarios as at December 31, 2022 are described below:

Scenario I - Considers a shock to the market curves and quotations at December 31, 2022, according to the base scenario defined by management as at March 31, 2023;

Scenario II - Considers a shock of + or - 25% in the market curves at December 31, 2022;

Scenario III - Considers a shock of + or - 50% in the market curves at December 31, 2022.

All amounts in millions of brazilian real unless otherwise stated

										Impacts on profit (loss)					Impacts on comprehensive income
						Scenario I				Scenarios II & III	Scenario I				Scenarios II & III
Risk factors	Cash and cash equivalents and financial investments (i)	Borrowing and related parties (i)	Derivative financial instruments/As per unit		Changes from 2022	Results of scenario I	-25%	-50%	+25%	+50%	Results of scenario I	-25%	-50%	+25%	+50%
Foreign exchange rates															
USD	1,606	8,127	1,233	USD millions	-2.0%	79	979	1,957	(979)	(1,957)	82	1,013	2,025	(1,013)	(2,025)
EUR	50				-7.9%						(4)	(13)	(25)	13	25
MAD	178				-4.1%						(7)	(44)	(89)	44	89
TRY	97	6	6	USD millions	-18.3%	6	(11)	(33)	7	11	(17)	(23)	(46)	23	46
TND	146				-7.3%						(11)	(36)	(73)	36	73
PEN	172	2			-7.4%		1	1	(1)	(1)	(13)	(43)	(86)	43	86
Interest rates															
BRL - CDI	4,611	3,034	3,230	BRL millions	-1 bps	1	230	532	(174)	(305)					
BRL - IPCA	391	2,317	2,230	BRL millions	-29 bps	(22)	(118)	(205)	92	217					
BRL - TJLP		140		BRL millions	17 bps		3	5	(3)	(5)					
USD - LIBOR		1,768	708	USD millions	6 bps		13	26	(13)	(26)					
Dollar coupon			574	USD millions	121 bps	42	(295)	(589)	295	589					
BRL - TR		36	-	USD millions	129 bps		-	-	-	-					
Price of commodities															
Zinc			218	ton	-13.9%	98	110	219	(110)	(219)	(22)	(24)	(49)	24	49

(i) The balances presented do not reconcile with the explanatory notes, since the analysis performed covered all the most significant currencies and the interest rates include only the principal amount.

BRL – National currency (real)
CDI – Interbank Deposit Certificate
EUR – European Union currency (euro)
IPCA – Extended National Consumer Price Index
LIBOR – London Interbank Offered Rate
PEN – Novo sol peruano
TND – Dinar tunisiano
TRY – Lira turca
USD – Dólar americano
TJLP – Long-Term Interest Rate, set by the National Monetary Council. Until December 2017, the TJLP was the basic cost of BNDES financing. As of January 2018, the Long-Term Rate (TLP) became the main financial cost of BNDES financing.
TR – Taxa Referencial

7 Financial instruments by category

Accounting policy

The Company and its subsidiaries classify their financial instruments depending on the purpose for which the financial instruments were acquired. Management determines the classification of financial instruments upon initial recognition, in the following categories:

(a) Financial instruments at fair value through profit or loss

These are financial assets held for active and frequent trading. These assets are measured at their fair value, and the changes are recognized in the statement of income for the year.

(b) Financial instruments at fair value through other comprehensive income

These are financial instruments that meet the criteria of contractual terms, give rise to cash flows that are exclusively the payment of principal and interest and are maintained in a business model, the objective of which is achieved both by obtaining contractual cash flows and by sale of financial assets. The instruments in this classification are measured at fair value through other comprehensive income.

(c) Financial instruments at amortized cost

These are financial instruments maintained in a business model whose purpose is to obtain contractual cash flows and their contractual terms give rise to cash flows that are exclusively the payment of principal and interest. The instruments in this classification are measured at amortized cost.

(d) Impairment of financial assets measured at cost

This is measured as the difference between the book value of the assets and the present value of the estimated future cash flows (excluding future credit losses that were not incurred), discounted at the current interest rate of financial assets. The book value of the asset is reduced and the amount of the loss is recognized in the statement of income.
If, in a subsequent period, the impairment loss decreases and the impairment can be objectively related to an event occurring after recognition of the impairment (such as an improvement in the debtor's credit rating), the reversal of the loss will be recognized in the statement of the results.

All amounts in millions of brazilian real unless otherwise stated

	Note	2022	2021
Assets			
At amortized cost			
Trade receivables		3,284	3,679
Related parties	15	239	225
	13 (a)	5,283	
		8,806	**3,904**
Fair value through profit or loss			
Cash and cash equivalents (i)	9	10,526	13,680
Financial investments	10	3,348	3,132
Derivative financial instruments	6.1.1	813	5,551
Electric power futures contracts			3,807
		14,687	**26,170**
Fair value through other comprehensive income			
Financial instruments - shares	13 (b)	1,330	2,801
Derivative financial instruments	6.1.1	72	106
		1,402	**2,907**
Liabilities			
At amortized cost			
Borrowing	19 (a)	20,937	23,337
Trade payables		7,406	6,914
Lease liabilities	20 (b)	1,277	1,551
Related parties	15	141	75
Confirming payables	21	3,219	3,405
Use of public assets		1,863	1,867
		34,843	**37,149**
Fair value through profit or loss			
Borrowing	19 (a)	1,933	1,667
Derivative financial instruments	6.1.1	440	556
Electric power futures contracts		247	3,863
		2,620	**6,086**
Fair value through other comprehensive income			
Derivative financial instruments	6.1.1	640	526
		640	**526**

(i) In practice, fair value and amortized cost are equivalent, considering, by definition, the characteristics of cash equivalents.

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8 Credit quality of financial assets

The ratings resulting from local and global ratings were extracted from rating agencies (S&P Global Ratings, Moody's and Fitch Ratings). For presentation, the nomenclature standard of S&P Global Ratings and Fitch Ratings and the classification as established in the Financial Policies were considered.

			2022			2021
	Local rating	Global rating	Total	Local rating	Global rating	Total
Cash and cash equivalents						
AAA	2,852		2,852	5,061		5,061
AA+				165		165
AA	304		304	680		680
AA-		181	181		140	140
A+		2,016	2,016	200	3,396	3,596
A		1,362	1,362	137	2,309	2,446
A-		622	622		1,105	1,105
BBB+		199	199		219	219
BBB		612	612		27	27
BBB-		15	15		37	37
BB		14	14		15	15
BB-		267	267		34	34
B		44	44		61	61
B-		85	85			
CCC		89	89			
CCC-		54	54		1	1
Unrated (i)		1,810	1,810	14	79	93
	3,156	**7,370**	**10,526**	**6,257**	**7,423**	**13,680**
Financial investments						
AAA	2,022		2,022	1,397		1,397
AA+	12		12	10		10
AA	132		132	227		227
A+		3	3			
A		88	88		22	22
A-					70	70
BB-					3	3
B					3	3
B-		2	2			
CCC+					92	92
CCC-					18	18
Unrated (ii)		1,089	1,089		1,290	1,290
	2,166	**1,182**	**3,348**	**1,634**	**1,498**	**3,132**
Derivative financial instruments						
AAA	817		817	756		756
AA	30		30	9		9
A+		16	16		144	144
A-		22	22		42	42
B					2	2
	847	**38**	**885**	**765**	**188**	**953**
	6,169	**8,590**	**14,759**	**8,656**	**9,109**	**17,765**

(i) Refers to values invested in offshore banks which are not rated by any ratings agency.

(ii) Refer to amounts invested in liquid assets traded abroad that are not classified by rating agencies.

All amounts in millions of brazilian real unless otherwise stated

9 Cash and cash equivalents

Accounting policy

Cash and cash equivalents include cash, bank deposits and other highly liquid short-term investments whose original maturities are less than three months, and which are readily convertible into a known amount of cash and subject to an insignificant risk of change in value.

(a) Breakdown

Cash and cash equivalents in local currency include deposits in current bank accounts and government securities (overnight operations) or financial institutions, indexed to the interbank deposit rate. Foreign currency cash equivalents are mainly composed of financial instruments in local currency of the company and its investees.

	2022	2021
Local currency		
Cash and banks	90	26
Bank Deposit Certificates - CDBs	2,105	2,437
Repurchase agreements - public securities	609	1,424
Repurchase agreements - private securities	33	
National Treasury Notes - NTNs	140	
Financial Treasury Bills - LFTs		224
	2,977	**4,111**
Foreign currency		
Cash and banks	6,213	6,962
Time deposits	1,336	2,607
	7,549	**9,569**
	10,526	**13,680**

The average return on amounts allocated in cash and cash equivalents in local currency is equivalent to 101.53% of the CDI (December 31, 2021 - 100.19% of the CDI).

10 Financial investments

Accounting policy

Financial investments have, for the most part, immediate liquidity, however, they are classified as financial investments based on the original maturities, considering the expected destination of the funds. Investments in national currency comprise government bonds or financial institutions, indexed to the interbank deposit rate.

Investments denominated in foreign currency are mainly composed of fixed income financial instruments in local currency (time deposits). There are also investments that have immediate liquidity considering the expected allocation of funds by the Investment Policy. Such investments comprise sovereign bonds and ETFs (Exchange Traded Funds) with low risk concentration in specific assets, following restrictions defined in the Investment Policy to safeguard liquidity and mitigate risk of capital loss.

All amounts in millions of brazilian real unless otherwise stated

(a) Breakdown

	2022	2021
Fair value through profit or loss		
Local currency		
Bank Deposit Certificates - CDBs	494	183
Financial Treasury Bills - LFTs	1,354	1,054
Repurchase agreements - Public securities	250	
Investment fund quotas		236
National Treasury Bills - LTNs	11	
Investment fund quotas	60	47
	2,169	**1,520**
Foreign currency		
Assets traded on the market (i)	1,089	1,400
Time deposits	90	212
	1,179	**1,612**
	3,348	**3,132**
Current	2,964	3,132
Non-current	384	
	3,348	**3,132**

(i) Balance refers to assets traded on the market, being investments with a low concentration of risk in specific assets.

The average return on amounts allocated to financial investments in local currency was 100.76% p.a. (December 31, 2021 - 97.26% p.a. of CDI).

11 Trade receivables

Accounting policy

Trade receivables correspond to the amounts referring to the sale of goods or provision of services in the normal course of the activities of the Company and its subsidiaries.

They are initially recognized at fair value and subsequently measured at amortized cost using the effective interest rate method less the estimated loss on allowance for loan losses. Accounts receivable from customers in the foreign market are updated based on the exchange rates in effect on the balance sheet date.

All amounts in millions of brazilian real unless otherwise stated

(a) Breakdown

		2022	2021
Trade receivables - Brazil		1,055	1,445
Trade receivables - customers outside Brazil		2,290	2,349
Related parties	15	80	39
		3,425	**3,833**
Allowance for doubtful accounts - Brazil		(76)	(87)
Allowance for doubtful accounts - customers outside Brazil		(65)	(67)
		(141)	**(154)**
		3,284	**3,679**

(b) Breakdown by currency

	2022	2021
Brazilian real	1,288	1,581
U.S. dollar	1,250	1,489
Euro	380	309
Turkish lira	191	97
Argentine peso	67	83
Uruguayan peso	43	
Moroccan dirham	43	66
Other	22	54
	3,284	**3,679**

(c) Changes in estimated loss for doubtful accounts

	2022	2021
Opening balance	**(154)**	**(222)**
Additions, net	(32)	
Receivables written off as uncollectible	44	69
Effect of subsidiaries included from consolidation	(13)	(5)
Foreign exchange variations	14	4
Closing balance	**(141)**	**(154)**

(d) Aging of trade receivables

	2022	2021
Current	3,040	3,473
Up to three months past due	227	137
Three to six months past due	23	20
Over six months past due	135	203
	3,425	**3,833**

All amounts in millions of brazilian real unless otherwise stated

12 Inventory

Accounting policy

Presented at the lower of cost and net realizable value. The cost is determined using the weighted average cost method. The costs of finished products and products in preparation comprise raw materials, direct labor and other direct and indirect production costs (based on normal operational capacity). The raw materials from biological assets (e.g: trees from a plantation, plants, fruit trees, cattle, etc.) are measured at fair value, less selling expenses at the point of harvest, when they are transferred from non-active assets current to the inventory group.

The subsidiaries, at least once a year, carry out the physical inventory of the goods included in their inventory. Inventory adjustments are recorded under “Cost of goods sold and services provided”.

The provision for inventory losses refers substantially to obsolete and low turnover materials.

(a) Breakdown

	2022	2021
Finished products	1,381	1,609
Semi-finished products	3,058	2,021
Raw materials	1,824	1,610
Auxiliary materials and consumables	1,797	1,588
Imports in transit	352	402
Other	453	415
Provision for inventory losses	(783)	(478)
	8,082	**7,167**

(b) Changes in the estimate of inventory losses

							2022	2021
	Finished products	Semi-finished products	Raw materials	Auxiliary materials and consumables	Maintenance materials	Other	Total	Total
Balance at the beginning of the period	(13)	(64)	(6)	(227)		(168)	(478)	(470)
Addition (i)	(67)	(301)	(10)	(122)	(20)	(27)	(547)	(392)
Reversal	29	17	8	110	11	21	196	326
Low		12				24	36	46
Effect of subsidiaries included in (excluded from) consolidation	(15)	(1)				(5)	(21)	25
Exchange variation	1	2	1	9		18	31	(13)
Balance at the end of the period	**(65)**	**(335)**	**(7)**	**(230)**	**(9)**	**(137)**	**(783)**	**(478)**

(i) Refers substantially to the provision for the inventory of ore and concentrate at Aripuanã at its net realizable value.

13 Financial Instruments - Shares

Accounting policy

The Company holds stakes in shares of companies, and following its business model, these are classified as financial instruments.

(a) Amortized cost

In 2018, the Company started to hold a minority interest of 15% in the combined long steel business of ArcelorMittal Brasil S.A. (“AMB”). In compliance with accounting rules, the investment was recognized as a financial instrument valued at fair value through profit or loss, in accordance with IFRS 9 / CPC 48 – “Financial instruments”.

All amounts in millions of brazilian real unless otherwise stated

On March 30, 2022, the Company exercised the put option in relation to the interest and the matter is being defined under the terms of the agreement. With this decision, the financial instrument started to be measured at amortized cost, and the fair value on the reclassification date was considered as the gross book value. Management made a new assessment of this instrument and reallocated it to the long term in the last quarter of 2022.

	2022
Opening balance previously classified as a derivative financial instrument	4,704
Change in fair value	579
Fair value of the derivative financial instrument reclassified to amortized cost	**5,283**

(b) Fair value through other comprehensive income

The value of financial instruments refers to the portion of shares in Suzano S.A. and Tinka Resources Limited held by the Company and subsidiary Nexa, respectively. The average quotation of the share value of the last ninety days of the closing date is used for the measurement at fair value
Uses the average share price quote for the last ninety days of the closing date.
The value of financial instruments refers to the portion of shares in Suzano S.A. and Tinka Resources Limited held by the Company and subsidiary Nexa, respectively.

				2022				2021
	CCR	Suzano	Tinka	Total	Suzano	Tinka	Tinka	Total
Balance at beginning of the period	1,426	1,355	20	2,801		2,590		2,590
Acquisition			33	33	1,348		37	1,385
Change in fair value	156	(63)	(11)	82	78	141	(17)	202
Investment reclassification (i)	(1,582)			(1,582)				
Foreign exchange variations			(4)	(4)				
Realization of fair value						(999)		(999)
Sale of shares						(377)		(377)
Balance at the end of the period		**1,292**	**38**	**1,330**	**1,426**	**1,355**	**20**	**2,801**

(i) Refers to the acquisition of shares in CCR, as described in Note 1.1 (m).

All amounts in millions of brazilian real unless otherwise stated

14 Taxes recoverable

Accounting policy

The recoverable taxes are held in assets mainly for the purpose of recognizing in the balance sheet of the entity the book values that will be the object of future recovery.

	2022	2021
Corporate Income Tax ("IRPJ") and Social Contribution on Net Income ("CSLL")	1,418	2,343
State Value-added Tax on Sales and Services ("ICMS")	763	661
Social Contribution on Revenue ("COFINS")	625	892
Value-added Tax ("VAT") (foreign companies)	195	263
Social Integration Program ("PIS")	152	233
State Value Added Tax on property, plant and equipment ("ICMS")	163	80
Social Security Credit	49	20
Excise Tax ("IPI")	38	43
Withholding Income Tax ("IRRF")	32	43
Service Tax ("ISS")	1	2
Other	177	162
	3,613	**4,742**
Current	1,545	2,709
Non-current	2,068	2,033
	3,613	**4,742**

15 Related parties

Accounting policy

Transactions with related parties are carried out in such a way that they do not generate any undue benefit to their counterparties or losses to the Company and its investees. In the normal course of operations, contracts are entered into with related parties (affiliates, joint ventures and shareholders and entities under common control), related to the purchase and sale of products and services, loans, leasing of goods, sale of raw materials and services.

Assets	Trade receivables		Dividends and interest on equity receivable		Non-current assets	
	2022	2021	2022	2021	2022	2021
Related companies and joint ventures						
Cementos Avellaneda S.A.	3	3				
Banco Votorantim S.A.			136	298		
Citrosuco S.A. Agroindústria					78	80
Citrosuco GmbH					68	72
Supermix Concreto S.A.	28	24				
Auren Energia S.A.	2	2	240	7	92	47
Auren Comercializadora de Energia Ltda	36					
Other	11	10	25		1	26
	80	**39**	**401**	**305**	**239**	**225**
Current	80	39	401	305		
Non-current					239	225
	80	**39**	**401**	**305**	**239**	**225**

All amounts in millions of brazilian real unless otherwise stated

Liabilities	Trade payables		Dividends payable		Non-current liabilities	
	2022	2021	2022	2021	2022	2021
Parent company						
Hejoassu Administração S.A.			1,131	1,520		
Related companies and joint ventures						
Auren Comercializadora de Energia Ltda	110					
Auren Energia S.A.			46		105	59
Enercan - Campos Novos Energia	76					
Alumina do Norte do Brasil S.A	48				1	
Other	26	10			35	16
	260	**10**	**1,177**	**1,520**	**141**	**75**
Non-controlling interests			85	104		
Current	260	10	1,262	1,624		
Non-current					141	75
	260	**10**	**1,262**	**1,624**	**141**	**75**

Profit and loss	Sales (purchases), net		Finance income (expenses), net
	2022	2021	2021
Related companies and joint ventures			
Cementos Especiales De Las Islas, S.A.	35	39	
Cementos Granadilla S.L.	23	26	
Citrosuco S.A. Agroindústria	11	29	
Midway Group, LLC	47	45	
Supermix Concreto S.A.	415	315	
Auren Comercializadora de Energia Ltda	335		
Superior Materials Holdings, LLC		79	
Others	272	55	(15)
	1,138	**588**	**(15)**

16 Investments

Accounting policy

Investments in affiliates, subsidiaries and joint ventures are accounted for using the equity method of accounting as of the date they become their jointly controlled joint ventures and subsidiaries.
Affiliates are those entities in which the Company, directly or indirectly, has significant influence, but not control or joint control over financial and operating policies. In order to be classified as a jointly controlled entity, there must be a contractual agreement that allows the Company to share control of the entity and gives the Company the right to the net assets of the jointly controlled entity, not the right to its specific assets and liabilities.

The Company also recognizes its assets in accordance with the venturer's participation in the assets, liabilities, revenues and expenses of the controlled entity on a proportional basis. This implies recognizing the venturer's share of the assets, liabilities, income and expenses of the joint ventures by adding such amounts to its own assets, liabilities, revenues and expenses by the straight-line method, and including such amounts in corresponding to the balance sheet and income statement of the same nature.

(i) Impairment of investments

For the calculation of the recoverable amounts of the investments, the Company and its subsidiaries use criteria similar to those used to test goodwill impairment.

All amounts in millions of brazilian real unless otherwise stated

(a) Breakdown

	Information on December 31, 2022		Equivalence result		Balance	
	Equity	Net income (loss) for the period	2022	2021	2022	2021
Investments accounted for under the equity method - Associates						
CCR S.A.	11,465	(227)	(48)		2,710	
Cementos Avellaneda S.A.	1,485	168	31	2	893	825
Enercan - Campos Novos Energia S.A.	413	428	21		492	
Alunorte - Alumina do Norte S.A.	3,272	(795)	(24)	13	99	115
IMIX Empreendimentos Imobiliários Ltda.	16	7	2	1	4	3
Mineração Rio do Norte S.A.	997	163		(1)		90
Supermix Concreto S.A.	377	95	24	18	94	71
Cementos Especiales de las Islas S.A.	211	38	19	27	105	120
Other			3	3	90	100
Joint ventures						
Auren Energia S.A.	15,252	2,671	1,008	25	5,639	2,361
Citrosuco GmbH	5,890	177	42	135	3,885	4,043
Banco Votorantim S.A.	12,532	1,018	509	812	6,761	6,510
Citrosuco S.A. Agroindústria	(1,925)	(187)	(92)	(469)	(710)	(713)
Juntos Somos Mais Fidelização S.A.	24	(89)	(40)	(15)	10	40
Other			16	34	85	126
			1,471	**585**	**20,157**	**13,691**

The balances of goodwill and surplus value are shown below, which are included in investment balances:

	Goodwill		Surplus value	
	2022	2021	2022	2021
Citrosuco GmbH	152	162	789	894
Citrosuco S.A. Agroindústria	194	194	59	57
Cementos Avellaneda S.A.	166	149		
Auren Energia S.A.			1,128	132
CCR S.A. (i)	565		961	

(i) Balance referring to the acquisition of an investment in CCR, as detailed in Note 1.1 (m). The added value balance was amortized by R$ 24 after the acquisition date of the investment.

All amounts in millions of brazilian real unless otherwise stated

(b) Information about the companies investees

The following is a summary of selected financial information of the principal associates and joint ventures as at December 31, 2022:

	Total and voting capital (%)	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Equity	Net revenue	Operation results	Finance income (costs)	Profit (loss) for the year
Investments accounted for based on the equity method - Associates										
CCR S.A	10.33	3,595	17,630	3,018	6,742	11,465	260	(126)	(900)	(227)
Cementos Avellaneda S.A.	49.00	751	2,032	686	612	1,485	2,554	506	(49)	168
Campos Novos Energia S.A.	47.88	152	484	134	89	413	1,251	651	(3)	428
Alunorte - Alumina do Norte S.A.	3.03	12,383		3,764	5,347	3,272	11,248	(1,153)	(44)	(795)
IMIX Empreendimentos Imobiliários Ltda.	25.00	10	6			16	8	8	1	7
Mineração Rio do Norte S.A.	10.00	592	3,295	837	2,053	997	1,893	258	(85)	163
Supermix Concreto S.A.	25.00	460	525	366	242	377	2,814	159	(24)	95
Cementos Especiales de las Islas S.A.	50.00	170	96	45	10	211	376	(327)	1	38
Joint ventures										
Auren Energia S.A.	37.34	2,231	14,880	713	1,146	15,252		(133)	99	2,671
Citrosuco GmbH	50.00	6,064	796	786	184	5,890	5,654	165	72	177
Banco Votorantim S.A.	50.00	110,677	11,089	105,857	3,377	12,532	6,073	855		1,073
Citrosuco S.A. Agroindústria	50.00	3,821	4,541	4,791	5,496	(1,925)	4,771	(44)	(187)	(187)
Juntos Somos Mais Fidelização S.A.	45.00	84	32	92		24	97	(95)	7	(89)
Hutton Transport Ltda.	25.00	48	38	17	19	50	138	(75)	1	30
Midway Group, LLC.	50.00	60	35	20		75	181	(149)		15
RMC Leasing LLC	50.00	11	36			47		(5)		1

All amounts in millions of brazilian real unless otherwise stated

(c) Changes in investes

	2022	2021
Balance at beginning of the year	**13,691**	**12,698**
Equity in the results of investees	1,471	585
Foreign exchange variations	(166)	433
Effect of the loss of control of investee (i)	2,471	
Investment acquisition (ii)	1,235	
Financial instrument reclassification (ii)	1,582	
Effect of the corporate transaction - Enercan (iii)	471	
Effect of acquisition of control of investee		(226)
Increase	188	165
Dividends and interest on equity	(659)	(600)
Hedge for cash flows	(145)	377
Reclassification to assets held for sale (iv)	(83)	
Actuarial benefits	71	259
Other	29	
Balance at the end of the year	**20,157**	**13,691**

(i) Balance basically refers to the reverse merger of VGE, as detailed in Note 1.1 (d).

(ii) Balance referring to the acquisition of an investment in CCR, as detailed in Note 1.1 (m).

(iii) Balance referring to the deconsolidation of Enercan, as detailed in Note 1.1 (p).

(iv) Balance referring to discontinued operations at MRN, as detailed in Note 32.

17 Property, plant, and equipment

Accounting policy

(i) Property, plant and equipment

Property, plant and equipment are stated at their historical cost of acquisition or construction, less accumulated depreciation. Historical cost also includes finance costs related to the acquisition or construction of qualifying assets.

Subsequent costs are included in the asset's carrying amount or recognized as a separate asset, as appropriate, only when it is probable that future economic benefits associated with these costs will flow to the Company and they can be measured reliably. The carrying amount of the replaced items or parts is derecognized.

All other repairs and maintenance are charged to the statement of income during the financial period in which they are incurred. The cost of major refurbishments is included in the carrying value of the asset when future economic benefits exceed the performance initially expected for the existing asset. Refurbishment expenses are depreciated over the remaining useful life of the related asset.

Land is not depreciated. Depreciation of other assets is calculated using the straight-line method to reduce their cost to their residual values over their estimated useful lives.

An asset's carrying amount is written down immediately to its recoverable amount when the asset's carrying amount is greater than its estimated recoverable amount, in accordance with the criteria adopted by the Company in order to determine the recoverable amount.

Gains and losses on disposals are determined by comparing the sales amount with the carrying amount and are recognized within "Other operating income (expenses), net" in the statement of income.

(ii) Impairment of non-financial assets

Assets that are subject to depreciation and amortization are reviewed for impairment whenever events or changes in economic, operating or technological circumstances may indicate impairment or loss of book value. An impairment loss is recognized when the carrying amount of the asset or cash generating unit (“CGU”) exceeds its recoverable amount, adjusting the carrying amount to the recoverable amount.

The recoverable amount is the greater of an asset's fair value less costs to sell and its value-in-use. For the purpose of impairment assessment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (CGUs).

Non-financial assets, except goodwill, which have been impaired, are subsequently reviewed for the analysis of a possible reversal of impairment, at the balance sheet date.

The recoverability of the assets that are used in the activities of the Company and its subsidiaries is evaluated whenever events or changes in circumstances indicate that the book value of an asset or group of assets may not be recoverable based on future cash flows. If the carrying amount of these assets exceeds their recoverable value, the net amount is adjusted and their useful life is adjusted to new levels.

All amounts in millions of brazilian real unless otherwise stated

(a) Breakdown and changes

										2022	2021
	Land and improvements	Buildings and construction	Machinery, equipment and facilities	Vehicles	Furniture and fittings	Construction in progress	Asset retirement obligation	Leasehold improvements	Other	Total	Total
Opening balance for the period											
Cost	2,078	16,677	48,083	1,967	325	6,550	1,269	837	707	78,493	67,770
Accumulated depreciation	(78)	(8,410)	(31,704)	(1,361)	(277)		(689)	(547)	(349)	(43,415)	(37,665)
Net opening balance for the year	**2,000**	**8,267**	**16,379**	**606**	**48**	**6,550**	**580**	**290**	**358**	**35,078**	**30,105**
Additions	2	7	69	1	4	4,811	112		58	5,064	5,346
Disposals	(15)	(10)	(50)	(2)		(11)		(1)	(2)	(91)	(819)
Write-off by corporate transaction (i)		(39)	(107)				(28)			(174)	(5)
Depreciation	(5)	(654)	(1,935)	(144)	(14)		(37)	(39)	(50)	(2,878)	(2,655)
Depreciation - discontinued operations											(90)
Foreign exchange variation	(108)	(322)	(654)	(40)	(4)	(175)	(18)	(30)	82	(1,269)	501
Effect of subsidiaries included in (excluded from) consolidation (ii)	41	(196)	155			26		21		47	2,819
Constitution (reversal) for impairment	(4)	142	166			(32)	61			333	559
Revision of estimated cash flow							(195)			(195)	(266)
Reclassification to assets classified as held-for-sale											(10)
Adjustments to operations in countries with a hyperinflationary economy (iii)	4	36	65	1		4				110	
Transfers (iv)	26	2,513	2,946	231	16	(5,877)		28	(23)	(140)	(407)
Closing balance for the period	**1,941**	**9,744**	**17,034**	**653**	**50**	**5,296**	**475**	**269**	**423**	**35,885**	**35,078**
Cost	2,022	18,041	48,279	2,049	287	5,296	1,171	819	765	78,729	78,492
Accumulated depreciation	(81)	(8,297)	(31,245)	(1,396)	(237)		(696)	(550)	(342)	(42,844)	(43,414)
Net closing balance for the period	**1,941**	**9,744**	**17,034**	**653**	**50**	**5,296**	**475**	**269**	**423**	**35,885**	**35,078**
Average annual depreciation rates - %	**1**	**4**	**9**	**20**	**10**		**5**	**9**			

(i) Refers to the drop down of assets of the São Miguel Paulista unit in the company Cristal and subsequent sale, which took place in July 2022, as per Note 1.1 (n), in the amount of R$ 169.

(ii) Refers, substantially, to the acquisition of the company Alux do Brasil Indústria e Comércio Ltda., as per Note 1.1 (c), to the acquisition of businesses from the indirect subsidiary of VCEAA, as per Note 1.1 (t) and to and from the deconsolidation of Campos Novos Energia S.A (Note 1.1 (p)).

(iii) Refers to the initial recognition of hyperinflation adjustments in Turkey, as per Note 1.1 (f).

(iv) The transfers include the reclassification of “Construction in progress” in the fixed assets group to “Software”, “Exploitation rights over natural resources” and “Others” in the intangible assets group.

All amounts in millions of brazilian real unless otherwise stated

(b) Construction in progress

The balance is composed mainly of expansion and optimization projects related to the industry.

Segment	2022	2021
Nexa Resources	2,378	4,532
Votorantim Cimentos	1,905	1,274
CBA	823	546
Acerbrag	76	42
Energy (i)		31
Other	114	125
	5,296	**6,550**

(i) Companies in the energy segment were included in the movement in the balances of “Works in progress”, due to the corporate transaction carried out in February 2022, as described in Note 1.1 (d).

The main projects in progress by business segment are as follows:

Nexa Resources	2022	2021
Expansion and modernization projects	929	3,410
Sustaining	1,166	859
Security, health and environmental projects	201	213
Information technology	14	19
Other	68	31
	2,378	**4,532**

Votorantim Cimentos	2022	2021
Sustaining	850	614
Modernization industry	619	365
Environment and security	193	88
Expasion	147	92
Other	96	115
	1,905	**1,274**

CBA	2022	2021
Alumina factory project	187	100
Projects oven rooms	200	53
Furnace refurbishment	87	172
Plastic transformation projects	37	25
Security, health and environmental projects	25	23
Foundry projects	22	20
Mining projects	19	11
Rondon projects	14	9
Other	232	133
	823	**546**

Acerbrag	2022	2021
Sustaining	32	34
Security projects, health and environmental projects	28	5
Other	16	3
	76	**42**

18 Intangible assets

Accounting policy

(i) Goodwill

Goodwill represents the excess of the cost of an acquisition over the net fair value of assets and liabilities of the acquired entity.

Goodwill on acquisitions of subsidiaries is recorded as "assets" in the consolidated financial statements. Goodwill is tested annually for impairment and carried at cost less accumulated impairment losses. Impairment losses on goodwill are not reversed. Gains and losses on the disposal of an entity include the carrying amount of goodwill relating to the entity sold.

Goodwill is allocated to CGUs for the purpose of impairment testing. The allocation is made to those CGUs or groups of CGUs that are expected to benefit from the business combination in which the goodwill arose.

Annually, the Company and its subsidiaries review the net book value of goodwill, in order to assess whether there was impairment. The recoverable amounts of CGUs were determined according to the value in use, based on the discounted cash flow model. The recoverable amount is sensitive to the rate used in the discounted cash flow model, as well as the expected future cash receipts and the growth rate used for extrapolation purposes.

(ii) Rights over natural resources

Costs for the acquisition of rights to explore and develop mineral properties and to explore wind resources are capitalized and amortized using the straight-line method over their useful lives, or, when applicable, based on the depletion of the mines in question. Once the mine or wind farm starts operating, these costs are amortized and considered a cost of production.
Depletion of mineral resources and wind farms is calculated based on extraction and utilization, respectively, taking into consideration their estimated productive lives.

(iii) Computer software

Costs associated with software maintenance are amortized over their useful lives.

(iv) Use of public assets

This represents the amounts established in the concession contracts regarding the rights to hydroelectric power generation (onerous concession) under Use of Public Assets agreements.

These transactions are accounted for at the time when the operating permit is awarded, regardless of the disbursement schedule established in the contract. Upon inception, this liability (obligation) and intangible asset (concession right) correspond to the total amount of the future obligations discounted to their present value (present value of cash flow from future payments).

The amortization of the intangible asset is calculated on a straight-line basis over the period of the authorization to use the public asset. The financial liability is updated by the effective interest method and reduced by the payments contracted.

(v) Contractual customer relationships and non-competition agreements

Contractual customer relationships and non-competition agreements acquired in a business combination are recognized at fair value at the acquisition date. The contractual customer relations and non-competition agreements have a finite useful life and are carried at cost less accumulated amortization. Amortization is calculated using the straight-line method over the estimated useful lives.

All amounts in millions of brazilian real unless otherwise stated

(a) Breakdown and changes

	Rights over natural resources	Goodwill	Asset retirement obligation	Use of public assets	Contracts, customer relationships and agreements	Hydrological risk renegotiation	*Software*	Rights over trademarks and patents	Intangible in progress	Other	2022 Total	2021 Total
Opening balance for the year												
Cost	15,468	7,181	611	776	705	448	847	88	15	1,203	27,342	23,630
Accumulated amortization	(8,969)		(237)	(268)	(401)	(14)	(658)	(60)		(32)	(10,639)	(9,036)
Net opening balance for the year	**6,499**	**7,181**	**374**	**508**	**304**	**434**	**189**	**28**	**15**	**1,171**	**16,703**	**14,594**
Additions	123	719	31				12	(1)	201	3	1,088	1,114
Disposals (i)	(12)	(15)	(1)							(176)	(204)	(16)
Amortization and depletion	(494)		(31)	(26)	(42)	(31)	(86)	(10)		(10)	(730)	(657)
Foreign exchange variation	(422)	(1,279)	(49)		(20)		(8)		2	(90)	(1,866)	889
Effect of subsidiaries included (excluded) in consolidation (ii)	39	(578)	12	(5)		(101)		45		20	(568)	607
Offtake agreement (note 1.1 (b))	208										208	
Revision of estimated cash flow			54								54	(32)
Reclassification of assets as sold for sale												(6)
Impairment	253	(325)								(210)	(282)	
Transfers (iii)	81		14		(2)		82	1	(58)	17	135	210
Closing balance for the year	**6,275**	**5,703**	**404**	**477**	**240**	**302**	**189**	**63**	**160**	**725**	**14,538**	**16,703**
Cost	14,936	5,703	635	768	666	341	910	133	160	1,264	25,516	27,342
Accumulated amortization	(8,661)		(231)	(291)	(426)	(39)	(721)	(70)		(539)	(10,978)	(10,639)
Net closing balance for the year	**6,275**	**5,703**	**404**	**477**	**240**	**302**	**189**	**63**	**160**	**725**	**14,538**	**16,703**
Average annual amortization and depletion rates - %	**6**		**5**	**7**	**7**		**20**					

(i) The write-off of R$ 176 in the "Others" column refers mainly to CO2 credits acquired upon the acquisition of Cementos Balboa (as described in Note 1.1 (v) to the individual and consolidated financial statements for the year ended 31 December 2021) which were used to settle the CO2 obligations of the indirect subsidiary VCEEA, referring to the year 2021. Consequently, the provision previously presented in "Other liabilities" in current was reversed for the same amount.

(ii) The amount of R$547 refers to the exclusion of the company VGE from the consolidation, as detailed in Note 1.1 (d). The balance of R$ 101 refers to the deconsolidation of the company Enercan (Note 1.1 (p)).

(iii) The transfers include the reclassification of "Construction in progress" in the fixed assets group to "Software", "Exploitation rights over natural resources" and "Others" in the intangible group.

All amounts in millions of brazilian real unless otherwise stated

(b) Goodwill on acquisitions

Accounting policy

The Company and its subsidiaries use the acquisition method to account for transactions classified as a business combination. The consideration transferred for the acquisition of a subsidiary is the fair value of the assets transferred, liabilities incurred and equity instruments. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration agreement when applicable. Acquisition-related costs are recorded in the income statement for the year as incurred. Identifiable assets acquired and liabilities assumed in a business combination are initially measured at fair values on the acquisition date. The Company and its subsidiaries recognize the non-controlling interest in the acquiree, both at fair value and for the proportionate share of the non-controlling interest in the fair value of the acquiree's net assets. The non-controlling interest to be recognized is determined on each acquisition.

	2022	2021
Votorantim Cimentos		
North America	2,238	2,494
Europe, Asia and Africa	1,721	1,953
Latin America	13	13
Brazil		
Cimento Vencemos do Amazonas Ltda.	64	64
Engemix S.A.	76	76
	4,112	**4,600**
Nexa Resources		
Latin America		
Nexa Resources Perú S.A.A.	744	1,735
Nexa Resources Cajamarquilla S.A.	483	516
Brazil		
Campos Novos Energia S.A.	9	26
Pollarix S.A.	1	1
	1,237	**2,278**
Acerbrag		
Latin America		
Acergroup S.A.	149	149
Acerholding S.A.	3	5
Acerbrag S.A.	1	1
	153	**155**
CBA		
Brazil		
Campos Novos Energia S.A.		31
Metalex Ltda.	49	49
Consórcio Empresarial Salto Pilão	48	
Alux do Brasil	36	
Rio Verdinho Energia S.A.	29	29
Machadinho Energética S.A.	15	15
BAESA - Energética Barra Grande S.A.	7	7
	184	**131**

Holding and other		
Latin America		
Votorantim Andina S.A.	16	16
Fazenda Bodoquena Ltda.	1	1
	17	**17**
	5,703	**7,181**

(c) Impairment test for goodwill

Assets that have an indefinite useful life, for example goodwill, are not subject to amortization and are tested annually for impairment.

The Company and its subsidiaries evaluate at least annually the recoverability of the carrying value of the operating segment of each CGU. The process of estimating these values involves the use of assumptions, judgments and estimates of future cash flows that represent the best estimate of the Company and its subsidiaries.

The Company's management determined the budgeted gross margin based on past performance and its expectations of market development. The discount rates used are pre-tax and reflect specific risks related to the operating segment or the CGU being tested.

The calculations of the value in use are based on cash flow projections, before the calculation of income tax and social contribution, and based on the financial budgets approved by Management for the projected period for the next five years. The amounts referring to cash flows, for the period exceeding five years, were extrapolated based on the estimated growth rates. The growth rate does not exceed the long-term average for the sector.

19 Borrowing

Accounting policy

Borrowings are initially recognized at fair value, net of transaction costs incurred, and subsequently carried at amortized cost. Any difference between the proceeds (net of transaction costs) and the total amount payable is recognized in the statement of income over the period of the borrowings using the effective interest rate method.

Borrowing costs directly related to the acquisition, construction or production of a qualifying asset that requires a substantial period of time to get ready for its intended use or sale are capitalized as part of the cost of that asset when it is probable that future economic benefits associated with the item will flow to the Company and costs can be measured reliably. The other borrowing costs are recognized as finance costs in the period in which they are incurred.

All amounts in millions of brazilian real unless otherwise stated

(a) Breakdown and fair value

		Current		Non-current		Total		Fair value (iii)	
Type	**Average annual charges**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Local currency									
Debentures	112% CDI / CDI+ 1,55% / IPCA + 4,08%	79	93	3,626	2,561	3,705	2,654	3,658	2,608
BNDES	TJLP + 2,77% / 1,86% Pré BRL / SELIC + 3,10% / IPCA + 5,32%	160	129	1,175	1,305	1,335	1,434	1,149	1,216
Export credit notes (i)	134,20% CDI	12	7	252	252	264	259	268	266
Development promotion agency	IPCA + 1,54% / TJLP + 0,86% / TR + 3,30%	11	9	152	87	163	96	142	79
FINAME	4,55% Pré BRL	3	9	1	4	4	13	4	12
Other	11,30% Pré BRL	13	11	13	10	26	21	25	34
National Total		**278**	**258**	**5,219**	**4,219**	**5,497**	**4,477**	**5,246**	**4,215**
Foreign currency									
Eurobonds - USD	6,05% Pré USD	184	228	10,546	13,801	10,730	14,029	10,641	15,980
Export credit notes	LIBOR + 1,54% / 4,71% Pré USD / SOFR 2,50%	96	18	3,004	2,604	3,100	2,622	2,713	2,267
Loans - Law 4.131/1962 (ii)	LIBOR + 1,61% / 2,92% Pré USD	7	2	1,926	1,665	1,933	1,667	1,897	1,667
Eurobonds - BOB	5,38% Pré BOB	14	1	393	437	407	438	321	346
Syndicated loan/bilateral agreements	3,95% Pré BOB / 9,50% Pré UYU / 14,65% Pré TRY / 1,20% CDOR / SOFR 1,20% / 1,62% Pré EUR / 1,61% EURIBOR	52	81	784	1,655	836	1,736	756	1,762
Working capital	0,98% Pré PEN	2	8		2	2	10	2	220
Export credit notes (pre payment)	SOFR 3,28%	8		346		354		392	
Other		6	7	5	18	11	25	11	25
Foreign Total		**369**	**345**	**17,004**	**20,182**	**17,373**	**20,527**	**16,733**	**22,267**
Total		**647**	**603**	**22,223**	**24,401**	**22,870**	**25,004**	**21,979**	**26,482**
Current portion of long-term borrowing		264	237						
Interest on borrowing		377	351						
Short-term borrowing		6	15						
		647	**603**						

(i) Some loan contracts are in the form of Export Credit Notes, which aim to finance export-related operations, and have linked swap contracts (derivative financial instrument), which aim to exchange exposure to the floating rate CDI in brazilian real for a fixed rate in the US dollars, with the exchange of currency from brazilian real to dollars.

(ii) Loans related to Law 4131/1962 have swaps (derivative financial instruments) aimed at both the exchange of floating rates in LIBOR and pre-fixed to floating rates in CDI, as well as the exchange of currency, dollar to real. These swaps were contracted with the financial institution in conjunction with the loan (dollar-denominated debt + swap to brazilian real in % of CDI). The terms and conditions of the loan and derivative are configured as a matched operation, so that economically the resulting is a debt in % of the CDI in brazilian real. The difference in measurement between the two instruments (loan at amortized cost x derivative at fair value) generates an "accounting mismatch" in the result and to eliminate this effect, contracts made as of August 2015, were designated as "fair value", the effect of this designation being the measurement of debt at fair value through profit or loss as per Note 25.

(iii) The Company and its subsidiaries revised the methodology for calculating the fair value of debts for disclosure purposes, which started to use as a reference the individual credit risk rate of the Company and its subsidiaries, and no longer the rate consolidated benchmark, with the exception of the fair values of the bonds, which were calculated using as a reference unit prices published in the secondary market in all quarters.

Key:

BNDES – National Bank for Economic and Social Development.
BRL – Brazilian currency (Real).
BOB – Bolivian.
CAD – Canadian Dollar.
CDI – Interbank Deposit Certificate.
CDOR – Canadian Dollar Offered Rate.
COP – Colombian Peso.
EUR – European Union currency (Euro).
EURIBOR – Euro Interbank Offered Rate.
FINAME – Government Agency for Machinery and Equipment Financing.
IBR – Interbank Rate (Colombia).
INR – Indian Rupee.
IPCA – Extended Consumer Price Index.
LIBOR – London Interbank Offered Rate.
PEN – Peruvian Sol.
SELIC – Special System for Clearance and Custody.
TJLP – Long-term interest rate set by the National Monetary Council. Until December 2017, the TJLP is the BNDES basic cost of financing. As of January 2018, the Long Term Rate (TLP) became the main financial cost of BNDES financing.
TND – Tunisian Dinar.
TRY – Turkish Lira.
USD – US Dollar.
UYU – Uruguayan Peso.

All amounts in millions of brazilian real unless otherwise stated

(b) Changes

	2022	2021
Opening balance for the year	**25,004**	**25,065**
New borrowing	4,467	4,414
Interest	1,492	1,395
Addition of borrowing fees, net of amortization	22	16
Fair value adjustment	(45)	(53)
Foreign exchange variation	(1,385)	1,387
Payments - interest	(1,452)	(1,410)
Payments - principal	(5,118)	(6,779)
Adjustment through other comprehensive income (i)	(121)	404
Charges for debt renegotiation	6	42
Effect of subsidiaries included in consolidation		523
Closing balance for the year	**22,870**	**25,004**

(i) Refers to the curve value of the combined financial instruments designated as hedge accounting.

(c) New borrowing and amortizations

Through the funding and prepayment of certain debts, the Company seeks to extend the average maturities, as well as to balance the exposure to different currencies for loans and financing against cash generation in these currencies.

The main funding operations carried out during the year were as follows:

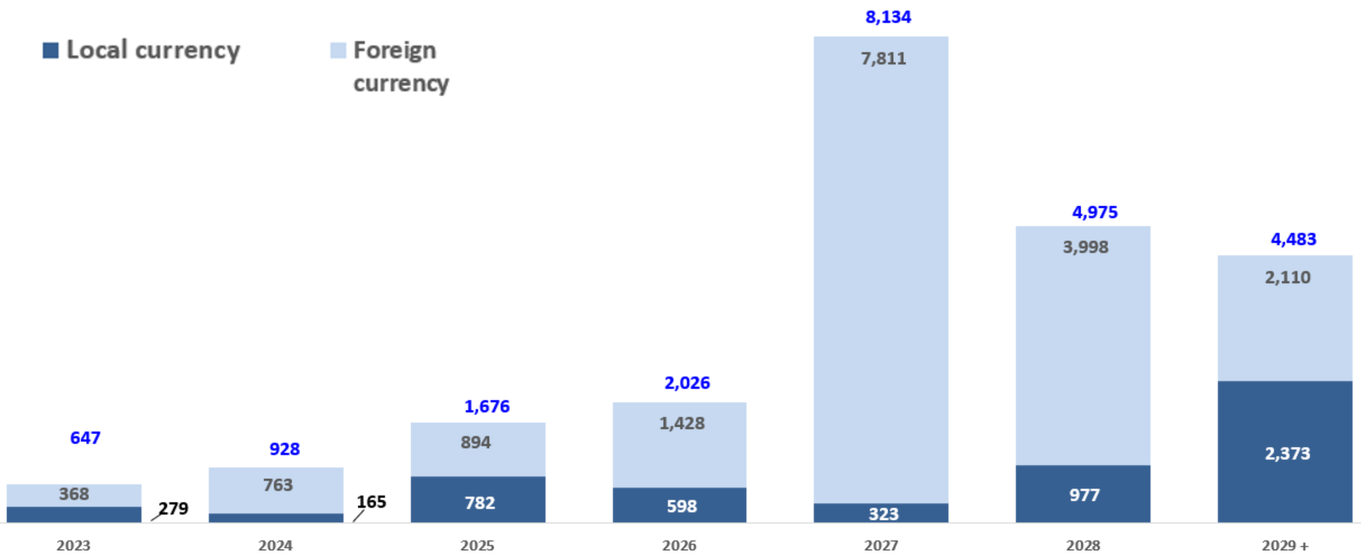
Date	Company	Type	Currency	Principal	Principal BRL	Maturity	Cost
Jan-22	St Marys Cement Inc.	Syndicated loan/bilateral agreements	CAD	(45)	(198)	2024	CDOR 03M + 0,96%
Mar-22	Nexa Recursos Minerais S.A.	Export Credit Note	USD	(90)	(459)	2027	SOFR TERM 06M + 2,5%
May-22	Votorantim Cimentos S.A.	Debentures CRI	BRL	(1,000)	(1,000)	2029	CDI + 1,60%
Jun-22	St Marys Cement Inc.	Syndicated loan/bilateral agreements	USD	(115)	(596)	2024	LIBOR 03M + 0,98%
Jun-22	St Marys Cement Inc.	Syndicated loan/bilateral agreements	USD	(145)	(757)	2027	SOFR TERM 1M + 1,2%
Jun-22	St Marys Cement Inc.	Syndicated loan/bilateral agreements	CAD	(75)	(304)	2027	CDOR 1M + 1,2%
Jul-22	Votorantim Cimentos S.A.	BNDES	USD	(80)	(436)	2028	CDI + 1,35%
Aug-22	Companhia Brasileira de Aluminio	BNDES	USD	(30)	(153)	2027	SOFR TERM 06M + 2,5%
Sep-22	Companhia Brasileira de Aluminio	Loans - Law 4.131/1962	USD	(42)	(216)	2029	SOFR TERM 06M + 3,8%
Sep-22	Companhia Brasileira de Aluminio	Loans - Law 4.131/1962	USD	(25)	(130)	2027	SOFR TERM 06M + 2,4%

The main amortizations made during the year were as follows:

Date	Company	Type	Currency	Principal	Principal BRL	Maturity	Observation
Mar-22	Nexa Recursos Minerais S.A.	Eurobonds	USD	(128)	(617)	2023	Pre payment
Jun-22	Votorantim Cimentos Internacional	Eurobonds	USD	(195)	(933)	2041	Pre payment
Jun-22	St Marys Cement Inc.	Syndicated loan/bilateral agreements	CAD	(80)	(324)	2024	Pre payment
Jun-22	St Marys Cement Inc.	Syndicated loan/bilateral agreements	USD	(145)	(757)	2024	Pre payment
Jul-22	St Marys Cement Inc.	Syndicated loan/bilateral agreements	CAD	(40)	(165)	2027	Pre payment
Jul-22	St Marys Cement Inc.	Syndicated loan/bilateral agreements	USD	(37)	(196)	2027	Pre payment
Aug-22	St Marys Cement Inc.	Syndicated loan/bilateral agreements	USD	(48)	(243)	2027	Pre payment
Sep-22	St Marys Cement Inc.	Syndicated loan/bilateral agreements	USD	(20)	(108)	2027	Pre payment
Sep-22	Companhia Brasileira de Aluminio	Eurobonds	USD	(79)	(406)	2024	Pre payment
Sep-22	Votorantim Cimentos EAA Inversiones S.L.	Syndicated loan/bilateral agreements	EUR	(65)	(328)	2026	Pre payment
Oct-22	St Marys Cement Inc.	Syndicated loan/bilateral agreements	USD	(20)	(105)	2027	Pre payment

All amounts in millions of brazilian real unless otherwise stated

(d) Maturity



(e) Breakdown by currency

	Current		Non-current		Total	
	2022	2021	2022	2021	2022	2021
USD	294	248	15,822	18,237	16,116	18,485
Real	278	258	5,219	4,219	5,497	4,477
Euro (i)	3	(2)	585	1,147	588	1,145
Boliviano	28	35	536	600	564	635
Turkish lira	6	9		8	6	17
Other	38	55	61	190	99	245
	647	**603**	**22,223**	**24,401**	**22,870**	**25,004**

(i) Balances shown as negative refer to debt costs.

(f) Breakdown by index

	Current		Non-current		Total	
	2022	2021	2022	2021	2022	2021
Local currency						
CDI	85	93	2,790	1,791	2,875	1,884
IPCA	17	14	1,157	1,090	1,174	1,104
TLP	94	68	1,018	1,100	1,112	1,168
SELIC	41	37	104	129	145	166
TJLP	29	28	109	98	138	126
TR			36		36	
Fixed rate	12	18	5	11	17	29
	278	**258**	**5,219**	**4,219**	**5,497**	**4,477**
Foreign currency						
Fixed rate	341	340	15,005	17,559	15,346	17,899
SOFR	19		973		992	
LIBOR	8	3	725	1,772	733	1,775
Euribor (i)	1	3	301	850	302	853
Other (i)		(1)		1		
	369	**345**	**17,004**	**20,182**	**17,373**	**20,527**
	647	**603**	**22,223**	**24,401**	**22,870**	**25,004**

(i) Balances shown as negative refer to debt costs.

All amounts in millions of brazilian real unless otherwise stated

(g) Collateral

On December 31, 2022, the Company guaranteed or provided guarantees for the following balance of loans and financing.

Company	2022	2021
Votorantim Cimentos International S.A.	1,774	3,246
Companhia Brasileira de Alumínio	202	722
Other	8	12
	1,984	**3,980**

In addition to these guarantees, the Company provides a guarantee for the R$ 1,244 debt balance of the joint venture Auren (December 31, 2021, R$ 1,293).

On December 31, 2022, the amount of R$1,016 (December 31, 2021 - R$1,111) was secured by property, plant and equipment belonging to the Company's subsidiaries, due to chattel mortgage.

(h) Covenants/financial ratios

Certain borrowing items are subject to compliance with certain financial ratios ("covenants"). Where applicable, such obligations are standardized for all loan and financing agreements.

The Company and its subsidiaries complied with all of these covenants, as applicable.

20 Lease

(a) Changes in rights of use - IFRS 16

							2022	2021
	Land and improvements	Property, buildings and commercial rooms	Machinery, equipment and facilities	IT equipment	Vehicles	Vessels	Total	Total
Opening balance for the year								
Cost	377	247	409	41	388	1,050	2,512	1,349
Accumulated amortization	(68)	(136)	(269)	(32)	(249)	(266)	(1,020)	(552)
Net opening balance for the year	**309**	**111**	**140**	**9**	**139**	**784**	**1,492**	**797**
Principal remeasurement		3					3	(2)
New contracts	39	25	55	2	11	77	209	267
Renegotiation of contracts		3					3	
Amortization	(28)	(45)	(106)	(3)	(64)	(129)	(375)	(325)
Disposals								(5)
Effect of subsidiaries included (excluded) in consolidation	5	(2)	5				8	816
Reclassification to assets held for sale								(126)
Initial adoption of hyperinflationary economy					1		1	
Transfers between classes (i)	193		18		(17)	(195)	(1)	
Foreign exchange variation	(35)	(4)	(6)	(4)	(2)	(78)	(129)	70
Closing balance for the year	**483**	**91**	**106**	**4**	**68**	**459**	**1,211**	**1,492**
Cost	574	257	456	11	345	838	2,481	2,512
Accumulated amortization	(91)	(166)	(350)	(7)	(277)	(379)	(1,270)	(1,020)
Net closing balance for the year	**483**	**91**	**106**	**4**	**68**	**459**	**1,211**	**1,492**

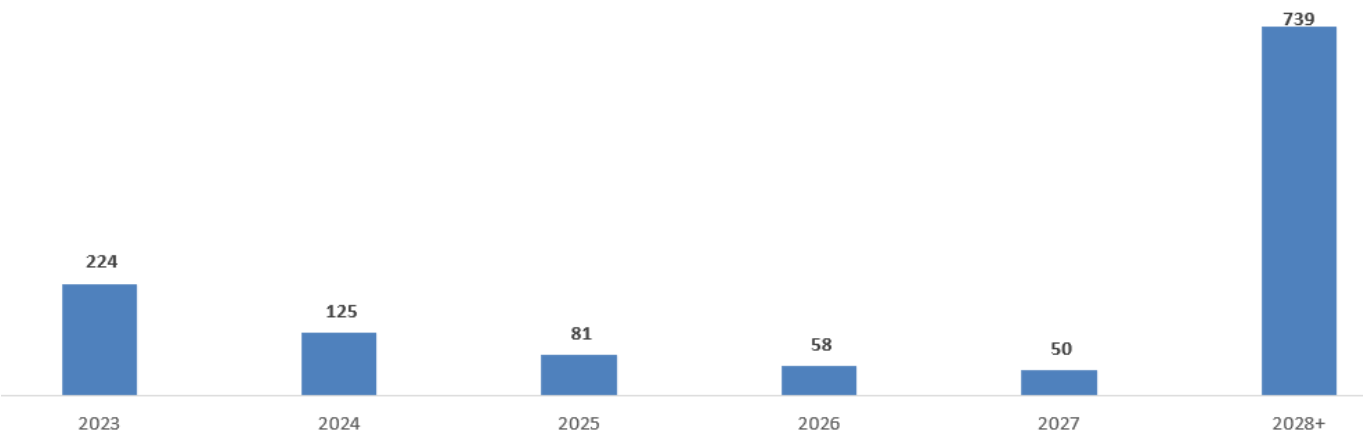
(i) As a result of the Purchase Price Allocation ("PPA") of the business combination of the subsidiary VCSA, the indirect subsidiary St. Marys reclassified from the initial cost of the "Vessels" class the amounts of R$ 193 to the "Land and land" class and R$ 1 to the "Machinery, equipment and facilities" class. Additionally, the amount of R$17 was reclassified from the "Vehicles" class to the "Machinery, equipment and facilities" class. These reclassifications did not generate changes in the final total balance at the beginning of the year, but only between classes.

All amounts in millions of brazilian real unless otherwise stated

(b) Change in lease obligations - IFRS 16

	2022	2021
Opening balance for the year	**1,551**	**858**
Remeasurement of principal	3	(1)
New contracts	208	263
Amortization	(412)	(363)
Fair value adjustment	52	(18)
Renegociation of contracts	(2)	2
Effect of subsidiaries included (exclused) in consolidation	8	820
Foreign exchange variation	(131)	(10)
Closing balance for the year	**1,277**	**1,551**
Current	206	330
Non-current	1,071	1,221
Closing balance for the year	**1,277**	**1,551**

(c) Maturity profile



21 Confirming payables

The Company and its subsidiaries entered into agreements with financial institutions, with the aim of allowing suppliers in the domestic and foreign markets to prepay their receivables. In these operations, suppliers transfer the right to receive securities from the sale of goods to financial institutions and, in exchange, receive these resources in advance from the financial institution, discounted by a discount charged directly by the bank at the time of assignment, which, in turn, become creditors of the operation. Regardless of these agreements with financial institutions, commercial conditions are always agreed between the Company and its subsidiaries and the supplier.

The Company, as part of the normal course of its business, also receives from its suppliers, notification of request for credit assignment to various financial institutions, with the purpose of anticipating its receivables. When notified, the Company pays the bills directly to financial institutions, under the exact terms and conditions agreed with the supplier. These cases, as they are not included in the contractual framework defined by the drawee risk agreements, are not highlighted in this classification and are normally considered in the line of accounts payable to suppliers.

Based on the requirements of IFRS 9 / CPC 48 - Financial Instruments, the Company and its subsidiaries assessed that these transactions do not generate substantial modification of the original liabilities with suppliers and, therefore, the payments of these securities are presented as cash outflows within the group of operating activities in the statement of cash flows, in accordance with IAS 7 / CPC 03 (R2), equivalent to accounts payable with suppliers. The Company also assessed that the economic substance of these transactions is of an operational nature and that the potential effects of adjusting the present value of these transactions are irrelevant for measurement and disclosure.

The Company and its subsidiaries understand that the presentation of the amount due as Drawee risk payable is relevant for understanding its equity position.

Accounts payable included in these contracts are shown below:

Operations - Confirming payables	**2022**	**2021**
Domestic market	587	483
Foreign market	2,632	2,922
	3,219	**3,405**

22 Current and deferred income tax and social contribution

Accounting policy

The income tax and social contribution expense for the period comprises current and deferred taxes. Taxes on profit are recognized in the statement of income, except to the extent that they relate to items recognized directly in equity. In such cases, the taxes are also recognized in comprehensive income or directly in equity.
The current and deferred income tax and social contribution is calculated on the basis of the tax laws enacted or substantively enacted at the balance sheet date in the countries where the entities operate and generate taxable income. Management periodically evaluates positions taken by the Company in income tax returns with respect to situations in which the applicable tax regulation is subject to interpretation. It establishes provision where appropriate on the basis of amounts expected to be paid to the tax authorities.

Income tax and current social contribution are shown net, by taxpayer entity, in liabilities when there are amounts to be paid, or in assets when the amounts paid in advance exceed the total due on the balance sheet date.

Deferred tax assets are recognized only to the extent it is probable that future taxable profit will be available against which the temporary differences and/or tax losses can be utilized.

Deferred income tax assets and liabilities are presented net in the balance sheet when there is a legal right and the intention to offset them upon the calculation of current taxes, generally related to the same legal entity and the same taxation authority. Thus, deferred tax assets and liabilities in different entities or in different countries are presented separately, and not net.

The Company and its subsidiaries are subject to income taxes in all countries in which it operates. The provision for income tax is calculated individually by the entity based on tax rates and rules effective at the entity's location. The Company and its subsidiaries also recognizes liabilities for anticipated tax audit issues based on estimates of whether additional taxes will be due. Where the final tax outcome of these matters is different from the amounts that were initially recorded, such differences will have an impact on the current and deferred tax assets and liabilities in the period in which the determination is made.

All amounts in millions of brazilian real unless otherwise stated

(a) Reconciliation of Corporate Income Tax ("IRPJ") and Social Contribution on Net Income ("CSLL") expenses

The amounts of income tax and social contribution shown in the result for the periods ended on December 31 show the following reconciliation based on the Brazilian nominal rate:

	2022	2021
Profit before income tax and social contribution	**7,616**	**10,317**
Standard rates	**34%**	**34%**
Income tax and social contribution at standard rates	**(2,589)**	**(3,508)**
Adjustments for the calculation of income tax and social contribution at effective rates		
Auren operation effect (i)	200	
Realization of other comprehensive income on the disposal of Investments (ii)	28	65
Credit referring to the non-levy of "IRPJ" and "CSLL" on "SELIC" of debts	9	252
Equity (iii)	526	199
Difference related to the rate of companies abroad	8	181
Tax loss and negative basis without deferred tax constitution	(431)	(644)
Use of tax loss and negative CSLL calculation base		37
Impairment of fixed assets without deferred tax constitution	36	16
Constitution of tax loss and negative CSLL calculation base from previous years	183	
Recognition of deferred charges on exchange variation of fixed assets	58	(157)
Tax Incentive	226	65
Impairment of goodwill without deferred tax constitution	(86)	
Addition of profit abroad IN 1520/14	(807)	(288)
Tax credit paid abroad	439	189
Impairment de tributos diferidos		89
Permanent additions, net	31	72
IRPJ and CSLL calculated	**(2,169)**	**(3,432)**
Current	(1,517)	(1,801)
Deferred	(652)	(1,631)
IRPJ and CSLL on result	**(2,169)**	**(3,432)**
Effective rate - %	**28%**	**33%**

(i) Balance referring to the reverse merger of VGE, as detailed in note 1.1 (d).

(ii) Balance basically referring to the non-recognition of tax on the realization of exchange variation on the sale of APDR, as described in Note 1.1 (a).

(iii) Balance that cannot be reconciled with the Statement Income due to the constitution of deferred charges on the surplus value of the assets incorporated in the Auren operation (Note 1.1 (d)).

All amounts in millions of brazilian real unless otherwise stated

(b) Breakdown of deferred tax balances

	2022	2021
Tax credits on tax losses	**2,652**	**2,437**
Credit referring to the non-incidence of IRCS on SELIC of undue payments (i)		252
Tax credits on temporary differences		
Estimation for losses on investments, fixed and intangible assets (ii)	827	1,178
Tax benefit on goodwill	503	503
Tax, civil and labor provision	476	475
PPR - Provision for profit sharing	230	250
Asset retirement obligation	180	181
Deferred gains on derivative instruments	170	282
Use of public assets	134	134
Environmental liabilities	130	127
Estimation for inventory losses	124	117
Provision for social security obligations	96	111
Financial instruments - firm commitment	84	19
Provision for energy charges	71	67
Provision for loans	29	36
Estimated asset disposals	8	14
Other tax credit	148	223
Tax debts on temporary differences		
Adjustment of useful lives of property, plant, and equipment (depreciation)	(1,689)	(2,976)
Market value assets	(1,906)	(1,896)
Deferred loss on derivative instruments	(2,511)	(1,122)
Adjustment to fair value - financial instruments	(390)	(358)
Goodwill amortization	(305)	(346)
Foreign exchange	(166)	25
Adjustment to present value	(164)	(121)
Deferred on aquisition gain	(132)	(130)
Capitalized interest	(126)	(126)
Hydrological risk renegotiation	(95)	(133)
Fair value adjustments	(35)	(42)
Other tax debts	(264)	(309)
Net	**(1,921)**	**(1,128)**
Net deferred tax assets related to the same legal entity	**2,045**	**2,696**
Net deferred tax liabilities related to the same legal entity	**(3,966)**	**(3,824)**

(i) The subsidiary VCSA and its indirect subsidiary Votorantim Cimentos N/NE S.A. ("VCNNE") set up, in accordance with IAS 12 / CPC 32 "Tax on Income" and Technical Interpretation IFRIC 23 / ICPC 22 "Uncertainty on treatment of income taxes", a provision for credits referring to levy of IRPJ and CSLL on the amounts related to the Special System of Liquidation and Custody (SELIC) fee received due to reimbursement of undue payment. The decision of the Special Appeal (RE) judged by the Federal Supreme Court (STF) on September 24, 2021 is not yet final and unappealable. The subsidiary VCSA and its indirect subsidiary VCNNE filed lawsuits regarding the matter, whose favorable results are considered probable. During the year 2022, an analysis was carried out of the potential impact of the application of said thesis for the sub judice period, resulting in a complement in the amount of R$ 8. Additionally, VCSA reclassified the amount of R$ 74 to the heading of "Income tax and social contribution recoverable", and R$ 173 for "Tax credits on tax loss and negative basis" in deferred charges.

(ii) Variation substantially refers to the reversal of deferred charges on the impairment provision on the APDR investment, as per note 1.1 (a).

All amounts in millions of brazilian real unless otherwise stated

(c) Effect of deferred income tax and social contribution on the result for the semester and on the result

	2022	2021
Opening balance for the year	**(1,128)**	**358**
Effects on the results for the year - continuing operations	(652)	(1,631)
Effect on other components of comprehensive income	(201)	(329)
Deferred income tax from subsidiary included in consolidation	60	474
Closing balance for the year	**(1,921)**	**(1,128)**

(d) Realization of deferred income tax and social contribution on tax losses

	2022	Percentage
In 2023	55	2%
In 2024	362	14%
In 2025	387	15%
In 2026	437	16%
In 2027	764	29%
After 2028	647	24%
	2,652	**100%**

23 Provision

Accounting policy

The Company and its subsidiaries are party to tax, civil, labor and other legal claims in progress at different Court levels. Provision against potentially unfavorable outcomes of litigation in progress is established and updated based on management evaluation, as supported by external legal counsel, and requires a high level of judgment regarding the matters involved.

The judicial deposits are monetarily restated and when they have a corresponding provision they are presented net in "Provision". Judicial deposits that do not have a corresponding provision are presented in non-current assets.

(i) Provision for tax, civil, labor, environmental and other legal claims

The provision for tax, civil, labor, environmental and other legal claims is recognized when: (i) the Company has a present legal or constructive obligation as a result of past events, (ii) it is probable that an outflow of resources will be required to settle the obligation, and (iii) the amount can be reliably estimated. Losses classified as possible are not recognized for accounting purposes, and are disclosed in the notes. Contingencies whose losses are classified as remote are neither provisioned nor disclosed, except when, due to the relevance of the process, the Company and its subsidiaries consider its disclosure justified. A classification of losses between possible, probable and remote, is based on Management's assessment, based on the opinion of its legal advisers.

Provisions are measured at the present value of the expenses that are expected to be necessary to settle the obligation (including any legal fees), that reflects current market assessments of the time value of money and the risks specific to the obligation. The increase in the provision due to time elapsing is recognized as interest expense. Provision does not include future operating losses.

(ii) Asset retirement obligations

The calculation of asset retirement obligations involves judgment about certain assumptions. In environmental terms, they refer to the future obligation to restore the ecological conditions similar to those existing before the beginning of the project or activity, or to carry out compensatory measures, agreed upon with the applicable bodies, as a result of it being impossible to return the areas to the pre-existing condition. These obligations arise from the beginning of the environmental degradation of the area occupied by the operation or from formal commitments made to the environmental body, under which the degradation must be compensated. The dismantling and removal of an asset from an operation occurs when it is permanently retired, through the interruption of its activities, or by its sale or disposal.

All amounts in millions of brazilian real unless otherwise stated

Expenditures relating to mine retirement is recorded as asset retirement obligations. The asset retirement cost, equivalent to the present value of the obligation (liability), is capitalized as part of the carrying amount of the asset, which is depreciated over its useful life. These liabilities are recorded as provisions.

The Company and its subsidiaries recognize a liability based on the fair value for the demobilization of assets in the period in which they occur, against the corresponding intangible asset.

The Company and its subsidiaries consider the accounting estimates related to the recovery of degraded areas and the costs of closing a mine as a critical accounting practice because it involves expressive amounts of provisions and these are estimates that involve several assumptions such as interest rates, inflation, useful life of the assets considering the current stage of exhaustion, the costs involved and the projected depletion dates of each mine. These estimates are reviewed annually by the Company and its subsidiaries.

(iii) Obligation for environmental liabilities

The environmental liability must be recognized when there is an obligation on the part of the Company and its subsidiaries through having incurred an environmental cost which is not yet disbursed.

(a) Breakdown and changes

						2022	2021
		Legal claims					
	Asset retirement obligation	Tax	Labor	Civil	Other	Total	Total
Opening balance for the year	**2,295**	**782**	**338**	**252**	**84**	**3,751**	**3,586**
	163	128	125	48	26	490	824
Reversals		(47)	(97)	(33)	(8)	(185)	(288)
Judicial deposits, net of write-offs		(43)	(7)	6		(44)	2
Settlement with cash effect	(156)	(10)	(56)	(13)	(4)	(239)	(347)
Settlements with judicial deposits			(11)	(2)		(13)	(11)
Effect of subsidiaries included in consolidation	3	(3)					(16)
Present value adjustment	166					166	107
	(6)	124	(7)	(1)	(2)	108	84
Foreign exchange variation	(90)	(5)	(1)	(1)	(1)	(98)	83
Revision of estimated cash flow	(217)					(217)	(273)
Closing balance for the year	**2,158**	**926**	**284**	**256**	**95**	**3,719**	**3,751**
Current	98	15	43	34		190	145
Non-current	2,060	911	241	222	95	3,529	3,606
	2,158	**926**	**284**	**256**	**95**	**3,719**	**3,751**

All amounts in millions of brazilian real unless otherwise stated

(b) Provision for tax, civil, labor, other contingencies, and outstanding judicial deposits

	2022				2021			
	Judicial deposits	Provision	Net amount	Outstanding judicial deposits (i)	Judicial deposits	Provision	Net amount	Outstanding judicial deposits (i)
Tax	(166)	1,092	926	229	(123)	905	782	172
Labor	(127)	411	284	26	(120)	458	338	23
Civil	(12)	268	256	5	(18)	270	252	4
Other	(1)	96	95	86	(1)	85	84	15
	(306)	**1,867**	**1,561**	**346**	**(262)**	**1,718**	**1,456**	**214**

(i) The Company and its subsidiaries have balances deposited in lawsuits classified by Management, following the indications of the legal advisors of the Company and its subsidiaries as of remote or possible loss, therefore, without the respective provision.

(c) Litigation in process with a likelihood of loss considered possible

The Company and its subsidiaries were party to litigations representing a risk of possible losses, for which no provision has been made, as detailed below:

	2022	2021
Tax	13,442	12,311
Civil	9,290	8,770
Environmental	611	606
Labor and social security	373	366
	23,716	**22,053**

(c.1) Comments on contingent tax and public rights liabilities with likelihood of loss considered possible

The following are the main contingent liabilities related to tax proceedings in progress with the likelihood of possible loss, for which there is no provision recorded. In the table below we present an analysis of the relevance of these processes:

Nature	2022	2021
Tax assessment notice - "IRPJ/CSLL"	1,796	1,784
"IRPJ/CSLL" – Profits abroad	1,490	1,445
"ICMS" – Credit	734	837
Disallowances of "PIS/COFINS" credits	1,195	709
Disallowance of "IRPJ/CSLL" negative balance	316	571
Compensation for exploration for mineral resources ("CFEM")	499	501
Collection of ICMS due to divergences regarding the destination of the property	92	267
"ICMS" on electricity charges	453	234
"IRPJ/CSLL" – Transfer costs	211	195
Error in fiscal classification - Importation		191
Tax assessment notice – "ICMS"	140	
"IRPJ/CSLL" – Deduction of expenses	7	7
Other lawsuits	6,508	5,570
	13,442	**12,311**

(i) Tax assessment notice – "IRPJ / CSLL"

In December 2016, the subsidiary VCSA was assessed by the Federal Revenue of Brazil in the historical amount of R$ 470 demanding the collection of IRPJ and CSLL related to the period of 2011, due to alleged undue deduction of expenses and operating costs. In January 2018, VCSA became aware of the lower court decision of the Special Federal Revenue Office, which partially upheld the objection, reducing approximately R$ 114 from the notice. In December 2018, the PGFN's Official Appeal was unfavorably judged and the Voluntary Appeal was partially upheld by the Company. The PGFN filed a Special Appeal which was partially admitted, shortly afterwards, the Company filed Counterarguments to the PGFN's Special Appeal, as well as filed a Special Appeal against the party judged unfavorably by the CARF. The Company is currently awaiting judgment of the Special Appeals by the Superior Chamber of CARF. As of December 31, 2022, the restated amount of the contingency is R$ 618, of which R$ 61 is assessed as probable and has a duly constituted provision, the amount of R$ 208 is assessed as possible and the remainder as remote, totaling sum of R$ 350.

(ii) Profits abroad – "IRPJ/CSLL"

The Company and its subsidiaries have assessments issued by the Brazilian Federal Revenue Service (RFB) for alleged failure to pay IRPJ and CSLL on profits earned abroad by its subsidiaries or affiliates.

In April 2022, the company adjusted the value of one of the lawsuits to reflect the understanding of the higher courts (administrative and judicial), which generated a reduction of R$ 50 in one of the cases.

The assessment notices total, on December 31, 2022, the amount of R$ 1,426. All cases are awaiting judgment at the administrative level.

(iii) ICMS credit

Between 2011 and 2013, eight notices of infraction and fine were issued against its subsidiary Citrovita Agro Industrial Ltda. ("CAI"), aiming mainly at the collection of credited ICMS, as highlighted in transfer invoices from other branches, with the specific purpose of exports, whose outputs are not taxed. The assessment notices total, on December 31, 2022, the amount of R$ 734, an amount reduced in relation to the same period last year, due to the final success of one of the processes in the amount of R$ 150, currently remaining six infraction notices, of which two are already in the judicial phase.

(iv) PIS / COFINS credit statement

Substantially comprised by the subsidiary CBA, which has Decisional Orders and tax assessments relating to the PIS and COFINS credits, referring to the items applied in the production process, which, in the opinion of the Brazilian Federal Revenue Office, would not generate the right to credit of the said contributions. The amount restated as at December 31, 2022 was R$ 767. Currently, all the processes await administrative decisions.

In the opinion of Management and of its independent legal advisors, in light of precedents and case law, the likelihood of loss of the process is considered possible.

(v) Financial Compensation for the Exploration of Mineral Resources - CFEM

The subsidiaries Nexa BR, CBA and VCSA had several assessments drawn up by the National Department of Mineral Production - "DNPM" for alleged failure to pay or lower collection of CFEM from 1991 to 2015. On December 31, 2020, the amount of possible loss amounted to R$ 500.

(vi) IRPJ/CSLL negative balance credit

VSA and its subsidiaries CBA received decisions regarding the gloss of negative balance of IRPJ credits, totaling the updated amount of R$ 317 as at December 31, 2022.

Currently, the cases are awaiting an administrative decision due to the presentation of a challenge by the Company and its Subsidiaries.

In the opinion of Management and in the opinion of its independent legal advisors, it appears that there was a misconception on the part of RFB when assessing the amounts presented by the Company and its subsidiaries, which is why the likelihood of loss in the lawsuits is considered possible.

(vii) Tax assessment notice - ICMS

In the fourth quarter of 2016, the subsidiary CAI received a notice of infraction whose value until December 31, 2021 amounted to the amount of R$ 180. In 2022, there was a favorable decision regarding the reduction of an item of the notice of infraction, so that the debit amount was reduced to R$ 140. The process is currently awaiting judgment of the special appeal filed by the company with the Superior Chamber of the São Paulo Tax and Fee Court.

(viii) ICMS on electricity charges

The subsidiary CBA has judicial and administrative discussions regarding the incidence of ICMS on the sector charges levied on the electricity tariff. As of December 31, 2022, the amount in controversy of these discussions amounts to R$ 246. Currently, the administrative and judicial proceedings are awaiting a decision

In the opinion of Management and in the opinion of its independent legal advisors, the assessment is unfounded, which is why the likelihood of loss of the process is considered possible.

(ix) IRPJ/CSLL – Transfer Price

Between 2007 and 2010, four notices of infraction were issued against its subsidiary Citrovita Agro Industrial Ltda. (“CAI”) aiming at the collection of IRPJ and CSLL and the adjustment in the tax loss base and in the negative base of CSLL, due to disallowances perpetrated in the adjustments made by the company in the calculation of transfer prices, in the fiscal years of 2003 and 2004. In October 2018, one of the cases was closed in favor of CAI, remaining under administrative discussion the amount of R$ 211, restated until December 31, 2022. In 2022, one of the cases migrated to judicial discussion and the other is awaiting judgment of an appeal by the Administrative Board of Tax Appeals.

(x) Tax classification mismatch – Import

In March 2017, the subsidiary CBA was assessed due to an alleged error in the tax classification in the import of input, resulting in the requirement of taxes (IPI, PIS, COFINS and II), whose value in December 2022 amounts to the amount of R $ 209 (remote). Considering that the assessment was improper, the Company presented a defense that was judged favorably at the lower administrative level. On December 19, 2022, in a judgment session, the CARF dismissed the ex-officio appeal and unanimously upheld the decision of the DRF that had canceled the assessment, in view of the expert report favorable to the Company made by an expert appointed by the CARF.

As a result of the availability of a decision favorable to the company's interests and since it is difficult to reverse in a special appeal, the case had its loss classification changed to remote.

(xi) Collection of ICMS due to divergences regarding the destination of the item

The subsidiary CBA was assessed for alleged failure to pay ICMS. As at December 31, 2022, the value of these assessments was R$ 92.

In the opinion of Management and in the opinion of its independent legal advisors, the criteria adopted in relation to the destination of the assets are in accordance with the pertinent legislation and the probability of loss of the process is considered possible.

(xii) IRPJ/CSLL - Expense Deduction

In December 2016, the subsidiary CAI was assessed by the RFB for the collection of IRPJ and CSLL, due to the gloss of exclusions from the calculation base of said taxes in the 2011 calendar year. The amounts required by the tax assessment notice total R$ 78. In the last quarter of 2018, a partial cancellation of the tax assessment notice was filed by the Regional Judgment Office (DRJ), and judgment on the Voluntary Appeal filed is currently awaited.

All amounts in millions of brazilian real unless otherwise stated

(c.2) Comments on contingent civil liabilities with likelihood of loss considered possible

Nature	2022	2021
CADE's Administrative Proceeding and Annulment Action (i)	6,065	5,670
Public Civil Actions – arising from the Administrative Proceeding (ii)	2,280	2,167
Other lawsuits	945	933
	9,290	**8,770**

(i) CADE's Administrative Proceeding and Annulment Action

In 2006, SDE initiated an investigation that culminated in the initiation of an administrative proceeding ("PA") against several companies in the cement sector in Brazil, including the subsidiary VCSA, based on alleged anti-competitive practices, including the formation of a cartel with other companies to fix prices and quantities of products. In January 2011, a technical note was issued by SDE and after the investigation phase was completed, in July 2015, CADE reached the final terms of its decision, determining the following sanctions, among others, to the subsidiary VCSA: (1) fine of approximately BRL 1,564 (20% of gross annual sales in 2016, based on Law No. 12,529/11); (2) several structural penalties, in short: (2.i) sale of all its equity interests in other cement companies and concrete companies in Brazil, (2.ii) sale of 20% of its installed capacity of concreting services in the Brazil, in relevant markets where subsidiary VCSA has more than one concrete plant and (2.iii) sale of a specific cement asset, which, in CADE's opinion, was directly related to the alleged anti-competitive practice; (3) other penalties which, in summary, include: (3.i) the prohibition of carrying out acts of concentration for a period of five years in the cement (among the convicted companies) and concrete (any act) markets and association (among the condemned companies) for greenfield projects in the cement, slag and concrete sectors; (3.ii) the prohibition of contracting with official financial institutions in the case of lines of credit subsidized by public programs or resources; (3.iii) recommendation to the Federal Revenue not to grant federal tax installments or cancel, in whole or in part, tax incentives or public subsidies already granted.

In October 2015, the subsidiary VCSA filed an ordinary action to annul (annulment action) the decision under the PA or, at least, to reduce the penalties applied. At the end of November 2015, an injunction was granted to suspend the effects of the decision in the PA, preventing CADE from demanding compliance with the obligations until judgment on the merits of the annulment action. CADE was summoned and presented its defense, while the subsidiary VCSA presented its reply in November 2016. Expert economic evidence was granted and, in May 2021, the judicial expert's report was presented.

In November 2021, the parties presented their manifestation and technical opinion in relation to the expert report. At the moment, the decision of the court of first degree is awaited. The subsidiary VCSA classified the probability of loss in the annulment action as possible and, therefore, there are no amounts provisioned.

As at December 31, 2022, the updated amount of the possible contingency estimate (comprising exclusively of the fine) of the subsidiary VCSA was R$ 2,280. The subsidiary VCSA emphasizes that this estimate does not represent any agreement with CADE's conviction and any of the penalties imposed in the PA, but a mere estimate for purposes of possible contingency reporting.

(ii) Public Civil Actions – arising from the Administrative Proceeding

(a) Public Civil Actions of the State Public Ministry of Rio Grande do Norte (ACP-MPE/RN)

In January 2012, the State Public Ministry of Rio Grande do Norte ("MPE/RN") filed a Public Civil Action ("ACP") against the subsidiary VCSA, five other cement companies and entities representing the cement and concrete industry, for alleged violation of Brazilian competition law, based on a technical note from the Secretariat of Economic Law ("SDE") of 2011.

MPE/RN made the following generic requests: (1) collective pain and suffering of R$5,600 (corrected until January 2012), with solidarity between the defendants, to the National Fund for Diffuse Rights; (2) homogeneous individual property damage to consumers equivalent to 10% of the amounts paid for cement or concrete purchased by consumers of brands negotiated by the defendants between 2002 and 2006, for settlement and individual collection by each consumer; (3) a fine of 1% to 30% of the gross income of the last fiscal year, not less than the supposed benefits (art. 23, I, Law nº 8,884/1994); and (4) other requests, including: (4.i) prohibition, for a period of at least five years, from obtaining financing from governmental financial institutions or from participating in bidding processes by the federal, state or municipal, government entities or agencies; and (4.ii) determination not to grant federal taxes in installments and cancellation of tax incentives or public subsidies.

In September 2021, the preliminaries raised by the defendants were rejected. The production of expertise was also determined, establishing that the burden of proving the damage is on the MPE/RN. At the moment, the appeals against the decision that rejected the preliminaries are awaiting judgment. There has not yet been an appointment of a judicial expert.

(b) Public Civil Actions of the Federal Public Ministry of São Paulo (ACP-MPF/SP)

In an apparently similar way, also based on the PA, in October 2021, the Federal Public Ministry of São Paulo (MPF/SP) filed an ACP against all persons and entities convicted in the PA, alleging violation of Brazilian competition law, as a result of alleged cartel formation.

Based on the information initially obtained, considering that the subsidiary VCSA has not yet been summoned and has not had access to the entire content of the process, the MPF/SP filed, among others, the following requests in the ACP-MPF/SP: (1) preliminary injunction to prohibit changes in the corporate structure of the defendant companies (and their subsidiaries or affiliates); (2) economic-financial damage with solidarity between the Defendants: (i) total main claim of BRL 28.92 billion (corrected until January 2014) based on an alleged 20% overprice between 1987 and 2007 (49, 78% allocated to VCSA); and (ii) total subsidiary order of R$7.78 billion (corrected until June 2021) based on an alleged 2.7% overprice between 1994 and 2004 (49.78% allocated to VCSA); (3) moral damages of R$10 billion corrected until October 2021 (49.78% allocated to the Company); (4) deposit of the conviction amount; (5) recognition of effects for future individual claims; (6) prohibition of contracting with official financial institutions; and (7) non-payment of taxes or cancellation in whole or in part of incentives and subsidies.

The request for a preliminary injunction (item (1) above) was denied by the lower court in November 2021 and summons are awaited from all defendants, including the Company.

Due to the filing of the ACP-MPF/SP and the similarity between the requests of the ACPs, including those of the same nature, from what could be inferred from the information obtained so far from the ACP-MPF/SP, the subsidiary VCSA revised the values of expectation of possible loss of the ACPs, as a whole, and also of each of the requests made in these ACPs for the evaluation of the amounts included in the possible contingency item. In this sense, the subsidiary VCSA calculated on a consolidated basis the amount of possible contingency reporting for both ACPs, based on the following assumptions: (a) assessment based on the values (of pain and suffering and property damage) indicated by the public ministries, which does not mean that VCSA agrees with these values; (b) given the similarities of orders, the values of orders of the same nature are not duplicated; (c) the calculations represent best estimates, at this time, based on available data (internal and public), on the procedural progress (including the lack of in-depth analysis by the ACP-MPF/SP, since the subsidiary VCSA was not mentioned) on the jurisprudence current and in the assessment of its legal advisors, including in relation to requests that are, at this time, illiquid, invaluable or without material impact for VCSA; (d) finally, the subsidiary VCSA used several assumptions to estimate the amounts and percentages of claims allocated to it, however VCSA cannot guarantee that such assumptions will prevail, including considering the current stage of the proceedings and including the solidarity claims made by the public ministries, as described above, estimating the updated amount of the possible contingency for both ACPs on December 31, 2022 of R$6,065. This estimate does not represent any agreement by the VCSA with the requests made by the MPs, but merely an estimate for possible contingency reporting purposes. The subsidiary VCSA classified the probability of loss of the ACPs as possible and, therefore, there are no provisioned amounts.

All amounts in millions of brazilian real unless otherwise stated

24 Use of public assets

Accounting policy

The amount is originally recognized as a financial liability (obligation) and as an intangible asset (right to use a public asset) which corresponds to the amount of the total annual charges over the period of the agreement discounted to present value (present value of the future payment cash flows).

The subsidiaries own or participate in companies that hold concession contracts in the electrical energy industry. Most of these contracts provide for annual payments from the commencement of operations and are adjusted by the General Market Price Index for the Use of Public Assets.

The contracts have an average duration of 35 years, and the amounts to be paid annually are as follows:

							2022			2021
Plants/Companies	Investor	Concession start date	Concession end date	Payment start date	Ownership interest	Intangible assets (Note 18)	Liabilities	Ownership interest	Intangible assets (Note 18)	Liabilities
Salto Pilão	Companhia Brasileira de Alumínio	Apr-02	Jan-42	Jan-10	60%	147	681	60%	157	695
Salto do Rio Verdinho	Companhia Brasileira de Alumínio	Dec-02	Dec-44	Oct-10	100%	6	31	100%	6	31
Itupararanga	Companhia Brasileira de Alumínio	Feb-04	Feb-24	Jan-04	100%		1	100%	-	1
Piraju	Companhia Brasileira de Alumínio	Dec-98	Nov-38	Feb-03	100%	1	8	100%	1	8
Ourinhos	Companhia Brasileira de Alumínio	Jul-00	Nov-38	Sep-05	100%	1	7	100%	1	7
Fumaça (i)	Companhia Brasileira de Alumínio	Jun-96	Jun-16		100%	53	66	100%	55	55
França (i)	Companhia Brasileira de Alumínio	Jun-96	Jun-16		100%	41	50	100%	42	42
Porto Raso (i)	Companhia Brasileira de Alumínio	Jun-96	Jun-16		100%	26	31	100%	27	27
Serraria (i)	Companhia Brasileira de Alumínio	Jun-96	Jun-16		100%	18	22	100%	18	18
Barra (i)	Companhia Brasileira de Alumínio	Jun-96	Jun-16		100%	71		100%	51	51
Capim Branco I e Capim Branco II	Pollarix S.A.	Aug-01	Sep-36	Oct-07	13%	2	15	13%	2	16
Picada	Pollarix S.A.	May-01	Jun-36	Jul-06	100%	25	107	100%	27	111
Enercan - Campos Novos Energia S.A	CBA Energia Participações S.A.	Apr-00	May-35	Jun-06	24%			24%	3	11
Enercan - Campos Novos Energia S.A	Pollarix S.A.	Apr-00	May-35	Jun-06	21%			21%	3	9
Pedra do Cavalo	Votorantim Cimentos N/NE S.A.	Mar-02	Apr-44	Apr-06	100%	86	746	100%	95	713
						477	1,765		508	1,867
Current							119			175
Non-current						477	1,744		508	1,692
						477	1,863		508	1,867

(i) Concession extension process not finalized, not giving rise to payments.

25 Pension plan and post-employment health care benefits

Accounting policy

The Company, through its subsidiaries abroad (VCNA, VCEAA, and Artigas) and in Brazil (VCNNE) and Votocel Investimentos Ltda. ("Votocel"), participates in pension plans managed by a private pension entity, which provide post-employment benefits to employees.

The liability recognized in the balance sheet in respect of defined benefit pension plans is the present value of the defined benefit obligation at the balance sheet date minus the fair value of plan assets. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using market interest rates that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating the terms of the related pension obligation. In countries where there is no active market related to such obligations, market rates for government securities are used.

Actuarial gains and losses arising from changes in actuarial assumptions are recognized within "Carrying value adjustments" in the period in which they arise.

Past-service costs are recognized immediately in the statement of income, unless the changes to the pension plan are conditional on the employees remaining in service for a specified period of time (the vesting period). In this case, past-service costs are amortized on a straight-line basis over the vesting period.

For defined contribution plans, the Company pays contributions to the pension plan administrators on a compulsory, contractual or voluntary basis. The Company no longer has payment obligations once the contributions are paid. Contributions are recognized as employee benefit expense when due. Prepaid contributions are recognized as an asset to the extent that a cash refund or a reduction in the future payments is available.

The Company's subsidiaries have a defined contribution plan for employees. Certain subsidiaries, however, have a defined benefit plan.

The table below shows where the balances and activities related to post-employment benefit are allocated in the consolidated financial statements.

All amounts in millions of brazilian real unless otherwise stated

	2022	2021
Rights recorded in the balance sheet with:		
Pension plan benefits	126	215
Assets recorded in the balance sheet	126	215
Obligations recorded in the balance sheet with:		
Pension plan benefits	222	272
Post-employment healthcare benefits	195	291
Liabilities recorded in the balance sheet	417	563
Expenses recognized in the statement of income with:		
Pension plan benefits	5	7
Post-employment healthcare benefits	17	16
	22	23
Remeasurement with:		
Pension plan benefits - gross amount	6	(42)
Deferred income tax and social contribution	(66)	(23)
Deferred income tax and social contribution	2	12
Pension plan benefits - net amount	(58)	(53)

(a) Defined contribution pension plan

The Company and its Brazilian subsidiaries sponsor private pension plans available to all employees administered by Fundação Senador José Ermírio de Moraes ("FUNSEJEM"), a private, not for profit, pension fund. Under the terms of the regulations of the fund, the contributions of the employees to FUNSEJEM are matched by the sponsors in accordance with the level of remuneration of the employee. For employees whose remuneration is lower than the threshold established by the regulations, the Company matches the contributions that represent up to 1.5% of their monthly remuneration. For employees whose remuneration exceeds the threshold, the Company matches the contributions of employees that represent up to 6% of their monthly remuneration. Voluntary contributions can also be made to FUNSEJEM. Once the plan contributions are made, no additional contributions are required.

(b) Defined benefit pension plan

The Company has subsidiaries with defined pension plans in North America, South America and Europe, which follow similar regulatory standards. The defined benefit pension plans also offer health care and life insurance, among other benefits. The cost of the retirement benefits and the other benefits of the plan granted to employees are determined by the projected benefit method on a pro rata basis considering the length of service and the best expectations of management regarding the return on plan assets, salary adjustments, costs and mortality trends, and the age of retirement of employees.

The amounts recognized in the balance sheet are determined as follows:

	2022	2021
Present value of funded obligations	588	1,017
Fair value of plan assets	(731)	(1,079)
Deficit of funded plans	(143)	(62)
Present value of non-funded obligations	403	383
Total deficit of defined benefit pension plans	260	321
Impact of the minimum funding requirement/assets ceiling	31	27
Assets and liabilities in the balance sheet	291	348

All amounts in millions of brazilian real unless otherwise stated

The changes in the defined benefit obligation and the fair value of the plan assets during the year were as follows:

					2022	2021
	Present value of funded and unfunded obligations	Fair value of plan assets	Total	Impact of the minimum requirement of the funds/asset	Total	Total
Opening balance for the year	**1,399**	**(1,079)**	**320**	**27**	**347**	**385**
Current service cost	12		12		12	11
Finance cost (income)	52	(31)	21	2	23	11
Past service cost and curtailments	1		1		1	1
	65	**(31)**	**34**	**2**	**36**	**23**
Re-measurements:						
Return on assets, excluding the amount included as finance income		195	195		195	16
Losses (gains) arising from changes in demographic assumptions	(9)		(9)		(9)	
Losses (gains) arising from changes in financial assumptions	(254)		(254)		(254)	(96)
Losses arising from experience	4		4		4	(1)
Changes in the asset ceiling, excluding the amount included as finance cost	2		2	1	3	17
	(257)	**195**	**(62)**	**1**	**(61)**	**(64)**
Foreign exchange gains (losses)	(138)	114	(24)		(24)	17
Contributions:		14	14		14	6
Payments of the plans:						
Payment of benefits	(76)	55	(21)		(21)	(19)
Closing balance for the year	**993**	**(732)**	**261**	**30**	**291**	**348**

The defined benefit obligation and the plan assets, by country, are as follows:

					2022					2021
	Brazil	Europe	North America	América Latina	Total	Brazil	Europe	North America	Uruguay	Total
Present value of the obligation	179	14	537		730	202	16	798		1,016
Fair value of plan assets	(70)		(661)		(731)	(68)		(1,011)		(1,079)
	109	14	(124)		(1)	134	16	(213)		(63)
Present value of non-financial obligations		66	191	4	261		78	302	4	384
of the funds/asset ceiling	31				31	27				27
	140	80	67	4	291	161	94	89	4	348

The actuarial assumptions used were as follows:

			2022			2021
	Change in premise	Increase in premise	Reduction in premise	Change in premise	Increase in premise	Increase in premise
Discount rate	0.50%	Decrease of 3.24%	Increse of 4.7%	0.50%	Decrease of 5.54%	Increase of 6.26%
Future salary increases	0.50%	Increase of 0.57%	Decrease of 0.53%	0.50%	Increase of 0.80%	Decrease of 0.66%
Increases in future pension plans	0.25%			0.25%	Increase of 4.95%	Decrease of 0.36%

	Increase of one in the premise	Reduction of one in the premise		Increase of one in the premise	Reduction of one in the premis
Life expectancy	Decrease of 5.82%	Increase of 0.96%		Decrease of 1.16%	Increase of 1.27%

(c) Post-employment benefits (pension and health care)

The Company operates post-employment health care plans through indirect subsidiaries in North America, VCNA, and in Europe, VCEAA. The accounting method, assumptions and frequency of evaluations are similar to those used for the defined benefit pension plans. Most of these plans are not funded.

The obligations relating to these plans are included in the movement of the defined benefit obligations previously presented.

26 Equity

Accounting policy

(i) Share capital

Share capital is represented exclusively by common shares classified as equity.

(ii) Dividends

This is recognized as a liability in the Company's financial statements at year-end based on the Company's bylaws. Any amount that exceeds the minimum required, 25% of the profit for the year, is only recognized on the date it is approved by the stockholders at a General Meeting. When a Company presents a loss in the year, there is no dividend.

(iii) Earnings per share

Earnings per share are calculated by dividing the profit attributable to the controlling stockholders by the weighted average number of common shares during the year. The weighted average number of shares is calculated based on the periods in which the shares were outstanding.

(iv) Statutory reserve and retained earnings reserve

The statutory reserve is constituted by the appropriation of 5% of the net income for the fiscal year or remaining balance, limited to 20% of the capital stock. Its purpose is to ensure the integrity of social capital. It can only be used to offset losses and increase capital. When the Company presents a loss in the year, there will be no legal reserve.

The retained earnings reserve refers to the retention of the remaining balance of retained earnings in order to meet the business growth plan established in the Company's investment plan.

(v) Government grants

The tax incentive reserve is credited with tax incentive benefits, which are recognized in the income statement for the year and allocated to retained earnings for this reserve. These incentives are not included in the calculation of the mandatory minimum dividend.

(vi) Equity valuation adjustments

The equity valuation adjustments include:

(a) The effective portion of the cumulative net change in fair value of hedge instruments used in hedge of cash flow until the recognition of the cash flows that were hedged.
(b) Cumulative translation adjustments with the exchange differences arising from the translation of the financial statements of foreign operations.
(c) Effective portion with exchange differences of hedge of the Company's net investments in a foreign operation.
(d) Actuarial losses (gains) and measures with retirement benefits.

(a) Share capital

On December 31, 2022 and December 31, 2021, the fully subscribed and paid-up capital of the Company was R$ 28,656, consisting of 18,278,789 thousand common shares.

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(b) Dividends

During the one-year period ended December 31, 2022, the Company decided to pay its parent company Hejoassu Administração S.A. the amount of BRL 1,429 corresponding to dividends related to part of the balance of the "Profit reserves" account accumulated until December 31, 2021 and also resolved on the mandatory minimum dividends for the year 2022, in the amount of BRL 1,1138 as detailed in the chart below.

Additionally, on April 29, 2022, at the annual general meeting, the Company's shareholders decided not to distribute and consequently reverse the mandatory minimum dividends in the amount of R$1,520, related to the year 2021, which will be retained in the profit reserves.

	2022	2021
Net income (loss) attributable to controlling shareholders	4,762	6,400
Legal reserve	(238)	(320)
Dividend calculation basis	4,524	6,080
Dividends	1,131	1,520
Additional dividends	1,429	1,016
Reversed dividends	(1,520)	
Total distributions	1,040	2,536
Value of dividends distributed per share	0.06	0.14

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(c) Carrying value adjustments

								Attributable to the owners of the Company
	Exchange variation of investees located abroad	Hedge accounting for net investments abroad, net of taxes	Hedge accounting for the operations of subsidiaries, net of taxes	Fair value of available-for-sale financial assets	Shares fair value	Remeasurement of retirement benefits, net of taxes	Other comprehensive income	Total
At January 1, 2021	**10,677**	**(5,281)**	**(651)**	**210**	**418**	**(356)**	**(138)**	**4,879**
Exchange variation of investees located abroad	620							620
Hedge accounting for net investments abroad, net of taxes		(12)						(12)
Hedge accounting for the operations of subsidiaries, net of taxes			601					601
Remeasurement of retirement benefits, net of taxes						37		37
Fair value of available-for-sale investment assets				(3)				(3)
Adjustment for hyperinflationary economies	583							583
Adjustment to the fair value of shares, net of taxes					144			144
Realization of comprehensive results on the sale of shares					(265)			(265)
Participation in other comprehensive results of investees							(58)	(58)
Fair value - measurement of the credit risk of investees							(9)	(9)
At December 31, 2021	**11,880**	**(5,293)**	**(50)**	**207**	**297**	**(319)**	**(205)**	**6,517**
At January 1, 2022	**11,881**	**(5,293)**	**(50)**	**207**	**297**	**(319)**	**(206)**	**6,517**
Currency translation of investees located abroad	(2,008)							(2,008)
Hedge accounting for net investments abroad, net of taxes		(108)						(108)
Hedge accounting for the operations of investees			(11)					(11)
Reclassification of fair value of shares in the acquisition of an investment					(155)			(155)
Adjustment to the fair value of shares, net of taxes					50			50
Adjustment for hyperinflationary economies	817							817
Achieving comprehensive results	(80)							(80)
Realization of other comprehensive results on the sale of investments				(3)				(3)
Remeasurement of retirement benefits, net of taxes						118		118
Credit risk of debt valued at fair value							(8)	(8)
Participation in other comprehensive results of investees							107	107
At December 31, 2022	**10,610**	**(5,401)**	**(61)**	**204**	**192**	**(201)**	**(107)**	**5,236**

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(d) Non-controlling interests

12/31/2022	Interest of non-controlling shareholders (%)	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Non-controlling interests
Nexa Resources S.A.	35.32	1,087	4,903	852	2,405	2,733
St Marys Cement Inc.	17.00	272	2,036	259	763	1,286
Companhia Brasileira de Alumínio	32.11	1,145	2,598	611	1,494	1,638
Votorantim Resources Cajamarquilla S.A.	0.01		749			749
Nexa Resources Perú S.A.A	16.27	605	340	229	187	529
Cementos Artigas S.A.	49.00	112	307	91	62	267
Yacuces, S.L.	49.00		156			157
Itacamba Cemento S.A.	33.33	101	236	32	179	126
CBA Energia Participações S.A.	66.67	21	237	30		228
Pollarix S.A.	66.67	28	268	31		265
Outros			46			46
		3,371	11,877	2,134	5,090	8,024

12/31/2021	Interest of non-controlling shareholders (%)	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Non-controlling interests
Nexa Resources S.A.	35.32	1,158	5,071	821	2,619	2,788
St Marys Cement Inc.	17.00	398	2,402	299	958	1,544
Companhia Brasileira de Alumínio	24.13	903	1,763	438	1,188	1,040
Votorantim Resources Cajamarquilla S.A.	0.01	731				731
Nexa Resources Perú S.A.A	16.27	539	508	270	343	435
Cementos Artigas S.A.	49.00	184	243	92	74	261
Yacuces, S.L.	49.00	1	161			162
Itacamba Cemento S.A.	33.33	94	272	36	201	130
Outros	-	283				283
		4,008	10,420	1,956	5,382	7,373

27 Net revenue from products sold and services rendered

Accounting policy

Revenue represents the fair value of the consideration received or receivable from the sale of goods in the ordinary course of business of the subsidiaries. Revenue is shown net of value added tax, rebates and discounts after elimination of sales among consolidated companies.

The subsidiaries recognize revenue when: (i) the amount of revenue can be measured reliably; (ii) is probable that future economic benefits will flow to the entity; and (iii) specific criteria have been met for each of the Company's and its subsidiaries' activities.

Revenue will not be reliably measured if all terms of sale are not resolved. The subsidiaries bases their estimates on historical results, taking into account the type of customer, the type of transaction and the specificities of each agreement.
Revenue recognition is based on the following principles:

(i) Sales of products and service

Revenue is shown net of value added tax, returns, rebates and discounts, after eliminating sales within the consolidated companies.

(ii) Sale of surplus energy

The Company's energy sales contracts are carried out in the free and regulated environments of Brazilian commercialization, being fully registered with CCEE, the agent responsible for accounting and settlement of the entire national integrated system (SIN).
The accounting recognition of revenue results from the amounts to be billed to customers in accordance with the methodology and prices established in each contract, adjusted to the amounts of energy actually generated, when applicable. These

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adjustments result from the CCEE mechanism that verifies the net exposure of the subsidiary Votener (sales, generation, purchases and consumption), called energy balance.

The mechanisms explained above result in the recognition of gross revenue, at its fair value, presented net of any sales tax, to the extent that it is probable that economic benefits will flow to the indirect subsidiary Votener.

(a) Reconciliation of revenue

	2022	2021
Gross sales		
Sales of products - domestic market	30,888	26,810
Sales of products - foreign market	28,391	26,009
Supply of electrical energy	642	3,131
Services provided	1,171	853
	61,092	56,803
Taxes on sales, services and other deductions	(8,197)	(7,795)
Net revenue	**52,895**	**49,008**

(b) Information on geographical areas in which the Company operates

The geographical areas are determined based on the location of the customers. The net revenue of the subsidiaries classified by currency and destination, is as follows:

(i) Revenue by destination

	2022	2021
Brazil	26,027	23,905
United States	6,745	5,760
Peru	4,435	4,182
Argentina	2,837	2,668
Canada	2,489	2,549
Spain	1,408	1,117
Turkey	1,209	780
Singapore	863	309
Switzerland	668	902
Chile	628	307
Morocco	622	702
Uruguay	499	585
Luxembourg	493	526
Bolívia	422	455
Tunisia	369	387
Japan	366	315
Colombia	347	301
Taiwan	334	289
Austria	251	241
Italia	163	122
Belgium	93	74
Equador	79	84
Germany	33	59
Other countries	1,515	2,389
	52,895	**49,008**

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(ii) Revenue by currency

	2022	2021
Real	24,303	22,867
US dollar	19,701	17,563
Canadian Dollar	2,481	2,545
Argentine pesos	2,291	2,119
Euro	1,392	1,174
Turkish lira	926	594
Moroccan Dirham	622	701
Uruguayan peso	412	545
Bolivian	399	432
Dinars tunisia	368	386
Other currencies		82
	52,895	**49,008**

28 Expenses by nature

				2022
	Cost of products sold and services rendered	**Selling**	**General and administrative**	**Total**
Raw materials, inputs and consumables	26,738	39	47	26,824
Employee benefit expenses (a)	3,523	504	1,479	5,506
Depreciation, amortization and depletion	3,781	47	155	3,983
Transportation expenses	3,795	279	7	4,081
Outsourced services	2,044	131	783	2,958
Other expenses	2,373	110	405	2,888
	42,254	**1,110**	**2,876**	**46,240**

				2021
	Cost of products sold and services rendered	**Selling**	**General and administrative**	**Total**
Raw materials, inputs and consumables	24,301	32	6	24,339
Employee benefit expenses (a)	3,257	481	1,523	5,261
Depreciation, amortization and depletion	3,466	48	123	3,637
Transportation expenses	3,157	67	5	3,229
Outsourced services	1,928	83	797	2,808
Other expenses	1,825	190	387	2,402
	37,934	**901**	**2,841**	**41,676**

(a) Employee benefit expenses

	2022	2021
Salaries and bonuses	3,469	3,373
Payroll charges	1,270	1,151
Benefits	767	737
	5,506	**5,261**

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(i) Health care (post-retirement)

The liability related to the health care plan for retired employees is stated at the present value of the obligation, less the market value of the plan assets, adjusted by actuarial gains and losses and past-service costs, in a manner similar to the accounting methodology used for defined benefit pension plans. The post-retirement health care obligation is calculated annually by independent actuaries. The present value of the post-retirement health care obligation is determined based on an estimate of the future cash outflow.

Actuarial gains and losses arising from changes in actuarial assumptions are fully recognized within "Carrying value adjustments" in the period in which they arise.

(ii) Employee profit sharing

Provision is recorded to recognize the expenses related to employee profit sharing. This provision is calculated based on qualitative and quantitative targets established by management and recorded in the statement of income as "Employee benefits".

29 Other operating results

	Note	2022	2021
Gain on revaluation to fair value on loss of control of investees	1.1 (d)	1,284	
Gain (loss) on investment sale	1.1 (a)	(756)	629
Reversal of impairment of investments	1.1 (a)	827	(827)
Financial instruments - offtake agreement	1.1 (b)	127	
Gain on sale of property, plant and equipment and intangible assets, net		55	(104)
Electric power futures contracts		(156)	171
Expenses with non activatable projects		(650)	(647)
Judicial provisions, net		(206)	(232)
Gain on purchase investee		21	243
Loss (gain) on business combination		82	143
Impairment of other assets		(64)	
Recognition at fair value of assets held for sale		(48)	
Estimated loss for obsolescence and low inventory turnover		(54)	(25)
Tax benefits		516	551
Income from rentals and leasing		38	76
Net income from waste sale		19	32
Tax recovery		74	219
Constitution of impairment of property, plant and equipment and intangible assets		51	559
Royalties on natural resources		(15)	(45)
Pre-operating expenses (i)		(175)	
Other incomes (expenses), net		9	(138)
		979	605

(i) Refers to pre-operating expenses related to idle capacity at the Aripuanã mine and power plant from January to October, the period before the unit starts generating revenue. Since November, idleness costs have been accounted for in cost of sales.

30 Finance results, net

Accounting policy

(i) Financial income (expenses)

These comprise interest rates on loans and financial investments, monetary and exchange variation on assets and liabilities, linked to loans with a swap instrument, as a result of the exchange variation net of gains and losses on derivative financial instruments (swap contracts) and various discounts that are recognized in the income for the year on the accrual basis.

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(ii) Foreign exchange variations

A foreign currency transaction will be initially recognized in the functional currency by applying the spot exchange rate between the functional currency and the foreign currency on the transaction date to the amount in foreign currency.
At the end of each reporting period, monetary items in foreign currency must be converted using the closing exchange rate.

Foreign exchange variations arising from the settlement of monetary items or the translation of monetary items at rates different from those for which they were converted at the initial measurement during the period or in previous financial statements will be recognized in the statement of income in the year in which they arise.

	2022	2021
Finance income		
Interest on financial assets	258	70
Income from financial investments	701	299
Derivative financial instruments	985	4,630
Gain on settlement of CO2 loans (i)	49	
Fair value of borrowing and financing	141	163
Monetary updating of assets	154	52
Reversal of monetary restatement of provision	128	144
Discounts obtained	51	33
Other finance income	144	147
	2,611	**5,538**
Finance costs		
Interest on borrowing	(1,654)	(1,546)
Capitalization of borrowing costs	99	110
Interest and monetary restatement - Use of public asset	(134)	(227)
Monetary restatement of provision	(304)	(326)
Derivative financial instruments	(756)	(244)
Premium paid on Bond repurchase (Tender Offer) (ii)	(192)	(70)
Adjustment to present value CPC 12	(165)	(161)
Commissions on financial operations	(136)	(82)
Fair value of borrowing and financing	(90)	(127)
Charges on discount transactions	(87)	(70)
"PIS/COFINS" on financial results	(79)	(76)
Borrowing fees	(34)	(48)
Expenses with foreign exchange closing	(109)	(11)
Interest on silver streaming	(30)	(37)
Income tax on remittances of interest abroad	(19)	(28)
Interest and monetary restatement on ARO	(3)	(22)
Charges on securitization of receivables	(93)	(27)
Debt renegotiation charges	(3)	(42)
Other finance costs	(325)	(224)
	(4,114)	**(3,258)**
Net monetary gain in the hyperinflationary subsidiary	80	24
Foreign exchange variation, net	(66)	(529)
Finance results, net	**(1,489)**	**1,775**

(i) Gain on the settlement of the loan of CO2 emission rights, which took place in January 2022 in cement operations in Spain.
(ii) Substantially due to the repurchase of Eurobond "Voto 41" by the indirect subsidiary VCI, as per Note 1.1 (j).

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31 Tax benefits

The Company and its subsidiaries have tax incentives within certain state and federal industrial development programs. The state programs are aimed at attracting industrial investments seeking regional decentralization, promoting employment and income generation, besides complementing and diversifying the industrial matrix of the states. These fiscal incentives are approved by the states in the form of percentage financing of up to 75%, presumed credit with a percentage of up to 95% and deferral of the payment of taxes or partial reductions of the amount due for imports of assets and inputs.

32 Assets and liabilities classified as held for sale

Accounting policy

Assets are classified as assets held for sale when their carrying amount is recovered, mainly through sale, and when the sale is considered highly probable.

The asset or group of assets to be classified as held for sale shall be measured on initial recognition at the lower of what its carrying amount would have been had it not been so classified and the fair value less costs to sell. If the asset or group of assets is acquired as part of a business combination, it must be measured at fair value less costs to sell. When the sale is expected to occur after one year, the entity shall measure the selling expenses at present value. Any increase in the present value of selling expenses that results from the passage of time must be presented in profit or loss as a financial expense.

Depreciation of assets held for trading ceases when a group of assets is designated as held for sale. The assets and liabilities of the group of discontinued assets are presented in single lines in assets and liabilities.

The breakdown of assets held for sale by company is shown below:

	December 31, 2022
	Assets
Companhia Brasileira de Aluminio (i)	78
Votorantim Cimentos S.A.	2
Companhia Nexa Resources Peru S.A.A	5
	85

(i) Refers substantially to the divestment of the operation in MRN carried out by the subsidiary CBA. Consequently, said asset was reclassified from “investments” to “assets held for sale”. Pursuant to CPC 31 and our accounting policy described above, recognizing the “impairment” of said asset, since the fair value of the investment is now lower than the book value.

	11/30/2022
Asset held for sale	100
(-) Fair value	(48)
Net asset held for sale	**52**

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33 Supplementary information – Business segments

To provide a higher level of information, the Company opted to disclose financial information by business segments, considering the elimination of balances and transactions between companies in the same segment, before: (i) the eliminations between business segments; and (ii) the elimination of investments held by holding companies.

Additionally, the eliminations and reclassifications between the companies are highlighted, so that the net result corresponds to the consolidated financial information of the VSA, disclosed as supplementary information. This supplementary information is not intended to be in accordance and is not required by accounting practices adopted in Brazil or by IFRS.

(a) Capital management

The financial leverage ratios are calculated according to the information of the industrial segments, considering the accumulated results for 12 months, as loan covenants, and are summarized as follow:

		Industrial segments	
Adjusted EBITDA	**Note**	**2022**	**2021**
Net debt			
Borrowing	19 (a)	22,870	25,004
Lease liabilities		1,277	1,551
Cash and cash equivalents		(10,526)	(13,680)
Financial investments		(3,225)	(3,050)
Derivative financial instruments	6.1.1	81	129
Net debt (B)		**10,477**	**9,954**
Net income for the year		**5,463**	**7,120**
Plus (less):			
Continuing operations			
Equity in the results of investees		(1,376)	(460)
Financial results, net		1,483	(1,803)
Income and social contribution taxes		2,086	3,326
Depreciation, amortization and depletion		3,983	3,637
EBITDA before other additions and exceptional items		**11,639**	**11,820**
Plus:			
Dividends received		170	189
Extraordinary items			
Discontinued operations		(13)	(235)
Loss (gain) on sale of investments, net		776	(629)
Provision for impairment of property, plant, equipment and intangible assets		11	(36)
Recognition at fair value of assets held for sale		48	
Reversal for impairment of investments		(827)	827
Net gain from fair value valuation on deconsolidation of investee		(1,361)	(243)
Mark-to-market of energy futures contracts		143	
Offtake Agreement		(124)	
Other		(2)	(234)
Adjusted annualized EBITDA (A)		**10,460**	**11,459**
Gearing ratio (B/A)		**1.00**	**0.87**

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(b) Balance sheet - business segments

										2022
Assets	**Votorantim Cimentos**	**Nexa Resources**	**CBA**	**Acerbrag**	**Holding and other**	**Eliminations**	**Total industrial segments**	**Votorantim Finanças**	**Eliminations**	**Total consolidated**
Current										
Cash and cash equivalents	3,944	2,598	849	142	2,993		10,526			10,526
Financial investments	978	94	340		1,430		2,842	123		2,965
Derivative financial instruments		39	33				72			72
Trade receivables	1,521	1,167	493	71	74	(42)	3,284			3,284
Inventory	3,359	2,062	1,881	422	358		8,082			8,082
Taxes recoverable	468	222	420	8	355		1,473	72		1,545
Dividends receivable		5	13		601	(354)	265	136		401
Other assets	272	175	238	43	273	11	1,012			1,012
	10,542	6,362	4,267	686	6,084	(385)	27,556	331		27,887
Assets classified as held-for-sale	2	5	78				85			85
	10,544	6,367	4,345	686	6,084	(385)	27,641	331		27,972
Non-current assets										
Long-term receivables										
Financial investments					383		383			383
derivative financial instruments	709		104				813			813
Financial instruments - shares		37			6,576		6,613			6,613
Taxes recoverable	609	543	691	16	209		2,068			2,068
Related parties	40		61	6	147	(15)	239			239
Deferred income tax and social contribution	436	871	156	24	317	240	2,044	1		2,045
Judicial deposits	216	87	18		25		346			346
Other assets	584	96	52		115	7	854		(2)	852
	2,594	1,634	1,082	46	7,772	232	13,360	1	(2)	13,359
Investments	1,097	96	360		42,989	(24,305)	20,237	6,761	(6,841)	20,157
Advance for investment property	75				78		153			153
Property, plant and equipment	18,123	11,306	5,499	566	391		35,885			35,885
Intangible assets	8,974	6,161	956	3	48	(1,604)	14,538			14,538
Right to use assets arising from leases	1,127	36	31	3	14		1,211			1,211
Biological assets					72		72			72
	31,990	19,233	7,928	618	51,364	(25,677)	85,456	6,762	(6,843)	85,375
Total assets	42,534	25,600	12,273	1,304	57,448	(26,062)	113,097	7,093	(6,843)	113,347

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										2022
Liabilities and equity	**Votorantim Cimentos**	**Nexa Resources**	**CBA**	**Acerbrag**	**Holding and other**	**Eliminations**	**Total industrial segments**	**Votorantim Finanças**	**Eliminations**	**Total consolidated**
Current liabilities										
Borrowing	262	265	108	1	11		647			647
Lease liabilities	166	19	16	1	4		206			206
Derivative financial instruments	272	50	4				326			326
Financial instruments - offtake agreement		9					9			9
Confirming payable	1,879	1,130	210				3,219			3,219
Trade payables	4,012	2,171	1,009	216	26	(28)	7,406			7,406
Salaries and payroll charges	599	413	171	34	112		1,329			1,329
Taxes payable	353	212	34	50	13		662	80		742
Advances from customers	58	9	31	55	11		164			164
Advances from customers		97	93				190			190
Dividends payable	221	41	226		1,131	(357)	1,262			1,262
Use of public assets	55	8	56				119			119
Electric power futures contracts	58		95				153			153
Deferred revenue - silver streaming		137					137			137
Other	715	125	134	5	59		1,038	2		1,040
	8,650	4,686	2,187	362	1,367	(385)	16,867	82		16,949
Liabilities related to assets held-for-sale										
	8,650	4,686	2,187	362	1,367	(385)	16,867	82		16,949
Non-current liabilities										
Borrowing	10,911	8,446	2,861		5		22,223			22,223
Lease liabilities	1,035	7	16	1	12		1,071			1,071
Derivative financial instruments	603	2	29		6		640			640
Financial instruments - offtake agreement		105					105			105
Deferred income tax and social contribution	968	1,004	13	15	1,798	1	3,799	168	(1)	3,966
Related parties	64	3	74		14	(14)	141			141
Provision	1,398	1,280	711	5	135		3,529			3,529
Use of public assets	657	112	975				1,744			1,744
Pension plan	275				142		417			417
Electric power futures contracts	68		26				94			94
Deferred revenue - silver streaming		553					553			553
Other	493	364	59		106		1,022			1,022
	16,472	11,876	4,764	21	2,218	(13)	35,338	168	(1)	35,505
Total liabilities	25,122	16,562	6,951	383	3,585	(398)	52,205	250	(1)	52,454
Equity										
Total equity attributable to owners of the Company	15,383	7,220	5,094	573	53,863	(29,265)	52,868	6,843	(6,842)	52,869
Non-controlling interests	2,029	1,818	228	348		3,601	8,024			8,024
Total equity	17,412	9,038	5,322	921	53,863	(25,664)	60,892	6,843	(6,842)	60,893
Total liabilities and equity	42,534	25,600	12,273	1,304	57,448	(26,062)	113,097	7,093	(6,843)	113,347

All amounts in millions of brazilian real unless otherwise stated

(c) Statement of income – business segments

	Votorantim Cimentos	Nexa Resources	CBA	Acerbrag	Votorantim Energia (**)	Holding and other	Eliminations	Total, industrial segments	Votorantim Finanças	Eliminations	2022 Total, consolidated
Continuing operations											
Net revenue from products sold and services rendered	25,797	15,695	8,825	2,352	246	132	(152) (*)	52,895			52,895
Cost of products sold and services rendered	(20,983)	(12,435)	(7,176)	(1,519)	(235)	(58)	152 (*)	(42,254)			(42,254)
Gross profit	**4,814**	**3,260**	**1,649**	**833**	**11**	**74**		**10,641**			**10,641**
Operating income (expenses)											
Selling	(826)	(206)	(49)	(23)		(6)		(1,110)			(1,110)
General and administrative	(1,246)	(593)	(405)	(230)	(7)	(386)		(2,867)	(9)		(2,876)
Other operating income (expenses), net	181	(657)	(48)	15	(11)	1,499		979			979
	(1,891)	**(1,456)**	**(502)**	**(238)**	**(18)**	**1,107**		**(2,998)**	**(9)**		**(3,007)**
Operating profit (loss) before equity results and finance results	**2,923**	**1,804**	**1,147**	**595**	**(7)**	**1,181**		**7,643**	**(9)**		**7,634**
Result from equity investments											
Equity in the results of investees	52	19	(13)		7	3,157	(1,846)	1,376	509	(414)	1,471
Finance results, net											
Finance income	1,048	129	465	35		916		2,593	18		2,611
Finance costs	(2,456)	(881)	(512)	(155)	(3)	(83)		(4,090)	(24)		(4,114)
Foreign exchange gains (losses), net	113	74	45	(159)		(59)		14			14
	(1,295)	**(678)**	**(2)**	**(279)**	**(3)**	**774**		**(1,483)**	**(6)**		**(1,489)**
Profit (loss) before income tax and social contribution	**1,680**	**1,145**	**1,132**	**316**	**(3)**	**5,112**	**(1,846)**	**7,536**	**494**	**(414)**	**7,616**
Income tax and social contribution	(534)	(771)	(189)	(177)	3	(421)		(2,089)	(80)		(2,169)
Current	(450)	(748)	(199)	(192)	(1)	153		(1,437)	(80)		(1,517)
Deferred	(84)	(23)	10	15	4	(574)		(652)			(652)
Profit from continuing operations	**1,146**	**374**	**943**	**139**		**4,691**	**(1,846)**	**5,447**	**414**	**(414)**	**5,447**
Discontinued operations											
Loss from continuing operations			16					16			16
Profit for the year from continuing operations	**1,146**	**374**	**959**	**139**		**4,691**	**(1,846)**	**5,463**	**414**	**(414)**	**5,463**
Profit attributable to the owners of the Company	1,000	350	872	85		4,691	(2,236)	4,762	414	(414)	4,762
Profit attributable to non-controlling interests	146	24	87	54			390	701			701
Profit for the year	**1,146**	**374**	**959**	**139**		**4,691**	**(1,846)**	**5,463**	**414**	**(414)**	**5,463**

(*) Refers to sales of energy by Auren Comercializadora de Energia S.A. (formerly known as Votener (Note 1.1 (d)) for investees CBA and VCSA, for the month of January 2022.
(**) Refers to the operations of Auren Comercializadora de Energia S.A. (formerly known as Votener (Note 1.1 (d)) for the month of January 2022.

All amounts in millions of brazilian real unless otherwise stated

	Votorantim Cimentos	Nexa Resources	CBA	Acerbrag	Votorantim Energia	Holding and other	Eliminations	Total, industrial segments	Votorantim Finanças	Eliminations	2021 Total, consolidated
Continuing operations											
Net revenue from products sold and services rendered	22,296	14,140	8,423	2,119	4,010	117	(2,097) (*)	49,008			49,008
Cost of products sold and services rendered	(17,084)	(10,616)	(6,799)	(1,516)	(3,960)	(56)	2,097 (*)	(37,934)			(37,934)
Gross profit	**5,212**	**3,524**	**1,624**	**603**	**50**	**61**		**11,074**			**11,074**
Operating income (expenses)											
Selling	(700)	(132)	(42)	(21)		(6)		(901)			(901)
General and administrative	(1,243)	(757)	(338)	(45)	(117)	(329)		(2,829)	(12)		(2,841)
Other operating income (expenses), net	365	(238)	98		(11)	391		605			605
	(1,578)	**(1,127)**	**(282)**	**(66)**	**(128)**	**56**		**(3,125)**	**(12)**		**(3,137)**
Operating profit (loss) before equity results and finance results	**3,634**	**2,397**	**1,342**	**537**	**(78)**	**117**		**7,949**	**(12)**		**7,937**
Result from equity investments											
Equity in the results of investees	62		13		268	3,409	(3,312)	440	817	(672)	585
						20		20			20
	62		**13**		**268**	**3,429**	**(3,312)**	**460**	**817**	**(672)**	**605**
Finance results, net											
Finance income	533	226	123	25	14	4,612		5,533	5		5,538
Finance costs	(1,632)	(855)	(545)	(90)	(21)	(82)		(3,225)	(33)		(3,258)
Foreign exchange gains (losses), net	(398)	(116)	(75)	27		57		(505)			(505)
	(1,497)	**(745)**	**(497)**	**(38)**	**(7)**	**4,587**		**1,803**	**(28)**		**1,775**
Profit before income tax and social contribution	**2,199**	**1,652**	**858**	**499**	**183**	**8,133**	**(3,312)**	**10,212**	**777**	**(672)**	**10,317**
Income tax and social contribution	**(573)**	**(813)**	**(20)**	**(196)**	**1**	**(1,725)**		**(3,326)**	**(105)**	**(1)**	**(3,432)**
Profit for the year from continuing operations	**1,626**	**839**	**838**	**303**	**184**	**6,408**	**(3,312)**	**6,886**	**672**	**(673)**	**6,885**
Continued operations											
Loss from discontinued operations				235				235			235
Profit for the year attributed to shareholders	**1,626**	**839**	**838**	**538**	**184**	**6,408**	**(3,312)**	**7,121**	**672**	**(673)**	**7,120**
Profit attributable to the owners of the Company	1,343	682	743	383	184	6,408	(3,341)	6,402	671	(673)	6,400
Profit attributable to non-controlling interests	283	157	95	155			29	719	1		720
Profit for the year	**1,626**	**839**	**838**	**538**	**184**	**6,408**	**(3,312)**	**7,121**	**672**	**(673)**	**7,120**

(*) Refers to sales of energy by Auren Comercializadora de Energia S.A. (formerly known as Votener (Note 1.1 (d)) for investees CBA and VCSA.

All amounts in millions of brazilian real unless otherwise stated

(d) Adjusted EBITDA - business segments

										2022
	Votorantim Cimentos	Nexa Resources	CBA	Acerbrag	Votorantim Energia (*)	Holding and other	Eliminations	Total, industrial segments	Votorantim Finanças	Total consolidated
Net revenue from products sold and services rendered	25,797	15,695	8,825	2,352	246	132	(152) (*)	52,895		52,895
Cost of products sold and services rendered	(20,983)	(12,435)	(7,176)	(1,519)	(235)	(58)	152 (*)	(42,254)		(42,254)
Gross profit	**4,814**	**3,260**	**1,649**	**833**	**11**	**74**		**10,641**		**10,641**
Operating income (expenses)										
Selling	(826)	(206)	(49)	(23)		(6)		(1,110)		(1,110)
General and administrative	(1,246)	(593)	(405)	(230)	(7)	(386)		(2,867)	(9)	(2,876)
Other operating income (expenses), net	181	(657)	(48)	15	(11)	1,499		979		979
	(1,891)	**(1,456)**	**(502)**	**(238)**	**(18)**	**1,107**		**(2,998)**	**(9)**	**(3,007)**
Operating profit (loss) before equity results and finance results	**2,923**	**1,804**	**1,147**	**595**	**(7)**	**1,181**		**7,643**	**(9)**	**7,634**
Plus:										
Depreciation, amortization and depletion - continuing operations	1,847	1,489	541	73		33		3,983		3,983
EBITDA	**4,770**	**3,293**	**1,688**	**668**	**(7)**	**1,214**		**11,626**	**(9)**	**11,617**
Plus:										
Dividends received	71					99		170		170
Exceptional items										
Impairment of property, plant and equipment and intangible assets	4	220	(213)			(827)		(816)		(816)
Recognition at fair value of assets held for sale			48					48		48
Loss on sale of investments	15		18			743		776		776
Gain from the advantageous purchase of an investee						(1,361)		(1,361)		(1,361)
Mark-to-market of energy financial instruments	57		86					143		143
Offtake agreement		(124)						(124)		(124)
Other	3					(5)		(2)		(2)
Adjusted EBITDA	**4,920**	**3,389**	**1,627**	**668**	**(7)**	**(137)**		**10,460**	**(9)**	**10,451**

(*) Refers to sales of energy by Auren Comercializadora de Energia S.A. (formerly known as Votener (Note 1.1 (d)) for investees CBA and VCSA.

All amounts in millions of brazilian real unless otherwise stated

										2021
	Votorantim Cimentos	Nexa Resources	CBA	Acerbrag	Votorantim Energia	Holding and other	Eliminations	Total, industrial segments	Votorantim Finanças	Total, consolidated
Net revenue from products sold and services rendered	22,296	14,140	8,423	2,119	4,010	117	(2,097) (*)	49,008		49,008
Cost of products sold and services rendered	(17,084)	(10,616)	(6,799)	(1,516)	(3,960)	(56)	2,097 (*)	(37,934)		(37,934)
Gross profit	**5,212**	**3,524**	**1,624**	**603**	**50**	**61**		**11,074**		**11,074**
Operating income (expenses)										
Selling	(700)	(132)	(42)	(21)		(6)		(901)		(901)
General and administrative	(1,243)	(757)	(338)	(45)	(117)	(329)		(2,829)	(12)	(2,841)
Other operating income (expenses), net	365	(238)	98		(11)	391		605		605
	(1,578)	**(1,127)**	**(282)**	**(66)**	**(128)**	**56**		**(3,125)**	**(12)**	**(3,137)**
Operating profit (loss) before equity results and finance results	**3,634**	**2,397**	**1,342**	**537**	**(78)**	**117**		**7,949**	**(12)**	**7,937**
Plus:										
Depreciation, amortization and depletion - continuing operations	1,666	1,385	496	58	5	26	1	3,637		3,637
EBITDA	**5,300**	**3,782**	**1,838**	**595**	**(73)**	**143**	**1**	**11,586**	**(12)**	**11,574**
Plus										
Dividends received	181				81	8	(81)	189		189
Exceptional items										
Impairment of property, plant and equipment and intangible assets	33	2	(71)			827		791		791
Net gain on the sale of investments						(625)		(625)		(625)
Gain from the advantageous purchase of investee	(243)							(243)		(243)
Other	(24)		(46)			(169)		(239)		(239)
Adjusted EBITDA	**5,247**	**3,784**	**1,721**	**595**	**8**	**184**	**(80)**	**11,459**	**(12)**	**11,447**

(*) Refers to sales of energy by Auren Comercializadora de Energia S.A. (formerly known as Votener (Note 1.1 (d)) for investees CBA and VCSA.

34 Subsequent events

(a) Advance of financial instrument - put option

On January 6, 2023, the Company received the amount of R$ 936 referring to the financial instrument – put option with AMB (Note 13 (a)). The amount will be maintained as an advance, given that the Company did not receive the full amount due and, consequently, did not carry out the transfer of AMB shares.

(b) Judicial approval of the indemnity agreement for the reversal of assets of the Três Irmãos HPP from the affiliate CESP

On January 10, 2023, a judgment was handed down for judicial approval of the aforementioned indemnity agreement for the reversal of assets of the Três Irmãos HPP (Note 1.1 (aa)) and the process was extinguished, with resolution on the merits. And finally, on January 17, 2023, the final decision was certified and the process was definitively archived.

(c) Hiring of financing by Altre

On January 11, 2023, the subsidiary Altre signed with Banco Bradesco S.A. financing in the form of a business plan in the amount of R$ 680, maturing in 2046 at the effective cost of TR + 9.71% p.a., to cover part of the acquisition price of 60% of the slabs of the future corporate tower of the multipurpose real estate complex High of Nations. The financing resources will be released according to the evolution of the construction of the enterprise, whose completion is scheduled for 2025. As collateral, the mortgage of the slabs of the corporate tower and fiduciary assignment of future lease receivables were given, both corresponding to the part acquired by Altre.

(d) BNDES funding – CBA

On February 7, 2023, the subsidiary CBA issued the first releases referring to the contracts entered into in December 2022 with the BNDES. The aggregate amount received by the Company and subsidiary Metalex totals R$ 173.

(e) Distribution of dividends – Nexa

On February 15, 2023, the Board of Directors of the subsidiary Nexa approved a distribution of dividends to its shareholders in the amount of approximately USD 25 million (R$ 131) to be paid on March 24, 2023. According to the laws of luxembourg, the resolution is subject to ratification by the company's Shareholders at the next annual meeting of shareholders in 2024..

(f) Approval of the distribution of dividends through VSA

On March 1, 2023, the Company resolved to its parent company Hejoassu Administração S.A., the amount of R$ 672 corresponding to dividends related to part of the balance of the "Profit Reserves" account, accumulated from previous years, to be paid by March 8, 2023.

(g) Investment in Ademicon Crédito Serviços e Consultoria S.A. (“Ademicon”)

On March 23, 2023, the investment fund managed by 23S Capital Ltda. becomes part of Ademicon's shareholding structure. The investment is R$ 120 and the operation's strategy is to strengthen and expand the new investee. The investment fund has as investors the Company and Temasek Brasil Consultoria e Participações Ltda.