UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended December 31, 2022

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission File Number: **001-32312**

Novelis Inc.

(Exact name of registrant as specified in its charter)

Canada	**98-0442987**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
One Phipps Plaza **3550 Peachtree Road, Suite 1100** **Atlanta, GA**	**30326**
(Address of principal executive offices)	(Zip Code)

(404) 760-4000
(Registrant's telephone number, including area code)

3560 Lenox Road, Suite 2000
Atlanta, GA 30326
(Former name, former address and former fiscal year, if changed since last report)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
N/A	N/A	N/A

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ¨ No ☒

The registrant is a voluntary filer and is not subject to the filing requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934. However, the registrant has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months.

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	¨	Accelerated filer	¨
Non-accelerated filer	☒	Smaller reporting company	¨
		Emerging growth company	¨

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ¨

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ¨ No ☒

APPLICABLE ONLY TO CORPORATE ISSUERS:

As of February 3, 2023, the registrant had 1,000 shares of common stock, no par value, outstanding. All of the registrant's outstanding shares were held indirectly by Hindalco Industries Ltd., the registrant's parent company.

TABLE OF CONTENTS

Commonly Used or Defined Terms		3
PART I—FINANCIAL INFORMATION		
Item 1.	Financial Statements (unaudited).	4
	Condensed Consolidated Statements of Operations (unaudited)	4
	Condensed Consolidated Statements of Comprehensive Income (Loss) (unaudited)	5
	Condensed Consolidated Balance Sheets (unaudited)	6
	Condensed Consolidated Statements of Cash Flows (unaudited)	7
	Condensed Consolidated Statements of Shareholder's Equity (unaudited)	8
	Notes to the Condensed Consolidated Financial Statements (unaudited)	9
Item 2.	Management's Discussion and Analysis of Financial Condition and Results of Operations.	36
Item 3.	Quantitative and Qualitative Disclosures About Market Risk.	55
Item 4.	Controls and Procedures.	56
PART II—OTHER INFORMATION		
Item 1.	Legal Proceedings.	57
Item 1A.	Risk Factors.	57
Item 6.	Exhibits.	58
SIGNATURES		59

COMMONLY USED OR DEFINED TERMS

Term	Definition
Adjusted EBITDA	As defined in Note 16 – Segment, Geographical Area, Major Customer and Major Supplier Information
Aleris	Aleris Corporation
AluInfra	AluInfra Services
Alunorf	Aluminium Norf GmbH
ASC	FASB Accounting Standards Codification
Duffel	Plant located in Duffel, Belgium, required to be divested (Refer to Note 2 – Discontinued Operations)
Exchange Act	Securities Exchange Act of 1934, as amended
FASB	Financial Accounting Standards Board
fiscal 2016	Fiscal year ended March 31, 2016
fiscal 2020	Fiscal year ended March 31, 2020
fiscal 2021	Fiscal year ended March 31, 2021
fiscal 2022	Fiscal year ended March 31, 2022
fiscal 2023	Fiscal year ending March 31, 2023
fiscal 2027	Fiscal year ending March 31, 2027
Form 10-Q	Quarterly Report on Form 10-Q
FRP	Flat-rolled products
GAAP	Generally Accepted Accounting Principles
Kobe	Kobe Steel, Ltd.
kt	kilotonne (One kt is 1,000 metric tonnes.)
Lewisport	Plant located in Lewisport, Kentucky, required to be divested (Refer to Note 2 – Discontinued Operations)
LME	The London Metals Exchange
LMP	Local market premium
Logan	Logan Aluminum Inc.
MMBtu	One decatherm or 1 million British Thermal Units
OEM	Original equipment manufacturer
RSUs	Restricted stock units
SARs	Stock appreciation rights
SEC	United States Securities and Exchange Commission
SG&A	Selling, general and administrative expenses
Tri-Arrows	Tri-Arrows Aluminum Inc.
UAL	Ulsan Aluminum Ltd.
UBC	Used beverage can
U.S.	United States
U.K.	United Kingdom
VIE	Variable interest entity
2022 Form 10-K	Our Annual Report on Form 10-K for the fiscal year ended March 31, 2022, as filed with the SEC on May 11, 2022

PART I—FINANCIAL INFORMATION

Item 1. Financial Statements (unaudited).

Novelis Inc.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS (unaudited)

in millions	Three Months Ended December 31, 2022	Three Months Ended December 31, 2021	Nine Months Ended December 31, 2022	Nine Months Ended December 31, 2021
Net sales	$ 4,201	$ 4,326	$ 14,089	$ 12,300
Cost of goods sold (exclusive of depreciation and amortization)	3,794	3,613	12,199	10,150
Selling, general and administrative expenses	164	156	509	457
Depreciation and amortization	133	137	405	405
Interest expense and amortization of debt issuance costs	75	54	198	173
Research and development expenses	23	23	69	68
Loss on extinguishment of debt, net	—	1	—	63
Restructuring and impairment expenses, net	5	3	7	1
Equity in net income of non-consolidated affiliates	(6)	(7)	(14)	(8)
Other expenses (income), net	7	(2)	67	(86)
	4,195	3,978	13,440	11,223
Income from continuing operations before income tax provision	6	348	649	1,077
Income tax (benefit) provision	(6)	89	146	276
Net income from continuing operations	12	259	503	801
Income (loss) from discontinued operations, net of tax	—	3	(2)	(62)
Net income	12	262	501	739
Net loss attributable to noncontrolling interests	—	—	(1)	—
Net income attributable to our common shareholder	$ 12	$ 262	$ 502	$ 739

See accompanying notes to the condensed consolidated financial statements.

Novelis Inc.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS) (unaudited)

	Three Months Ended December 31,		Nine Months Ended December 31,	
in millions	2022	2021	2022	2021
Net income	$ 12	$ 262	$ 501	$ 739
Other comprehensive income (loss):				
Currency translation adjustment	215	6	(146)	(28)
Net change in fair value of effective portion of cash flow hedges	(158)	162	645	(43)
Net change in pension and other benefits	(6)	7	9	17
Other comprehensive income (loss) before income tax effect	51	175	508	(54)
Income tax (benefit) provision related to items of other comprehensive income (loss)	(38)	43	167	(5)
Other comprehensive income (loss), net of tax	89	132	341	(49)
Comprehensive income	101	394	842	690
Comprehensive income (loss) attributable to noncontrolling interests, net of tax	—	1	(1)	1
Comprehensive income attributable to our common shareholder	$ 101	$ 393	$ 843	$ 689

See accompanying notes to the condensed consolidated financial statements.

Novelis Inc.
CONDENSED CONSOLIDATED BALANCE SHEETS (unaudited)

in millions, except number of shares	December 31, 2022	March 31, 2022
ASSETS		
Current assets:		
Cash and cash equivalents	$ 1,126	$ 1,070
Accounts receivable, net		
— third parties (net of allowance for credit losses of $6 as of December 31, 2022, and March 31, 2022)	1,887	2,590
— related parties	161	222
Inventories	3,048	3,038
Prepaid expenses and other current assets	195	195
Fair value of derivative instruments	236	377
Assets held for sale	3	5
Current assets of discontinued operations	—	6
Total current assets	6,656	7,503
Property, plant and equipment, net	4,658	4,624
Goodwill	1,075	1,081
Intangible assets, net	588	623
Investment in and advances to non-consolidated affiliates	846	832
Deferred income tax assets	140	158
Other long-term assets		
— third parties	285	274
— related parties	2	1
Total assets	$ 14,250	$ 15,096
LIABILITIES AND SHAREHOLDER'S EQUITY		
Current liabilities:		
Current portion of long-term debt	$ 84	$ 26
Short-term borrowings	896	529
Accounts payable		
— third parties	2,725	3,869
— related parties	294	320
Fair value of derivative instruments	164	959
Accrued expenses and other current liabilities	737	774
Current liabilities of discontinued operations	—	21
Total current liabilities	4,900	6,498
Long-term debt, net of current portion	4,875	4,967
Deferred income tax liabilities	295	158
Accrued postretirement benefits	640	669
Other long-term liabilities	289	295
Total liabilities	10,999	12,587
Commitments and contingencies		
Shareholder's equity:		
Common stock, no par value; Unlimited number of shares authorized; 1,000 shares issued and outstanding as of December 31, 2022, and March 31, 2022	—	—
Additional paid-in capital	1,208	1,308
Retained earnings	2,316	1,814
Accumulated other comprehensive loss	(279)	(620)
Total equity of our common shareholder	3,245	2,502
Noncontrolling interests	6	7
Total equity	3,251	2,509
Total liabilities and equity	$ 14,250	$ 15,096

See accompanying notes to the condensed consolidated financial statements. Refer to Note 4 – Consolidation for information on our consolidated VIE.

Novelis Inc.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (unaudited)

in millions	Nine Months Ended December 31, 2022	Nine Months Ended December 31, 2021
OPERATING ACTIVITIES		
Net income	$ 501	$ 739
Net loss from discontinued operations	(2)	(62)
Net income from continuing operations	$ 503	$ 801
Adjustments to determine net cash provided by operating activities:		
Depreciation and amortization	405	405
(Gain) loss on unrealized derivatives and other realized derivatives in investing activities, net	(19)	17
Gain on sale of business	—	(15)
Loss on sale of assets, net	1	5
Impairment charges	5	—
Loss on extinguishment of debt, net	—	63
Deferred income taxes, net	(7)	75
Equity in net income of non-consolidated affiliates	(14)	(8)
Gain on foreign exchange remeasurement of debt	(8)	(6)
Amortization of debt issuance costs and carrying value adjustments	12	14
Other, net	—	6
Changes in assets and liabilities including assets and liabilities held for sale (net of effects from divestitures):		
Accounts receivable	669	(702)
Inventories	(96)	(1,036)
Accounts payable	(1,061)	843
Other assets	(4)	24
Other liabilities	(65)	17
Net cash provided by operating activities – continuing operations	321	503
Net cash (used in) provided by operating activities – discontinued operations	(12)	12
Net cash provided by operating activities	$ 309	$ 515
INVESTING ACTIVITIES		
Capital expenditures	$ (462)	$ (287)
Acquisition of business and other investments, net of cash acquired	(4)	—
Proceeds from sales of assets, third party, net of transaction fees and hedging	2	—
Proceeds from the sale of a business	3	9
(Outflows) proceeds from investment in and advances to non-consolidated affiliates, net	(37)	1
Proceeds (outflows) from the settlement of derivative instruments, net	5	(11)
Other	15	11
Net cash used in investing activities - continuing operations	(478)	(277)
Net cash used in investing activities	$ (478)	$ (277)
FINANCING ACTIVITIES		
Proceeds from issuance of long-term and short-term borrowings	$ —	$ 1,670
Principal payments of long-term and short-term borrowings	(380)	(2,034)
Revolving credit facilities and other, net	749	39
Debt issuance costs	(6)	(25)
Return of capital to our common shareholder	(100)	(100)
Net cash provided by (used in) financing activities - continuing operations	263	(450)
Net cash provided by (used in) financing activities	$ 263	$ (450)
Net increase (decrease) in cash, cash equivalents and restricted cash	94	(212)
Effect of exchange rate changes on cash	(39)	7
Cash, cash equivalents and restricted cash – beginning of period	1,084	1,027
Cash, cash equivalents and restricted cash – end of period	$ 1,139	$ 822
Cash and cash equivalents	$ 1,126	$ 808
Restricted cash (included in other long-term assets)	13	14
Cash, cash equivalents and restricted cash – end of period	$ 1,139	$ 822
Supplemental Disclosures:		
Accrued capital expenditures as of December 31	$ 125	$ 67
Leased assets obtained in exchange for new operating lease liabilities	27	12

See accompanying notes to the condensed consolidated financial statements.

Novelis Inc.
CONDENSED CONSOLIDATED STATEMENTS OF SHAREHOLDER'S EQUITY (unaudited)

	Equity of our Common Shareholder						
	Common Stock						
in millions, except number of shares	Shares	Amount	Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Noncontrolling Interests	Total Equity
Balance as of March 31, 2021	1,000	$ —	$ 1,408	$ 860	$ (366)	$ (16)	$ 1,886
Net income attributable to our common shareholder	—	—	—	739	—	—	739
Currency translation adjustment included in other comprehensive income (loss)	—	—	—	—	(28)	—	(28)
Change in fair value of effective portion of cash flow hedges, net of tax benefit of $11 included in other comprehensive income (loss)	—	—	—	—	(32)	—	(32)
Change in pension and other benefits, net of tax provision of $6 included in other comprehensive income (loss)	—	—	—	—	10	1	11
Return of capital to our common shareholder	—	—	(100)	—	—	—	(100)
Balance as of December 31, 2021	1,000	$ —	$ 1,308	$ 1,599	$ (416)	$ (15)	$ 2,476

	Equity of our Common Shareholder						
	Common Stock						
	Shares	Amount	Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Noncontrolling Interests	Total Equity
Balance as of March 31, 2022	1,000	$ —	$ 1,308	$ 1,814	$ (620)	$ 7	$ 2,509
Net income attributable to our common shareholder	—	—	—	502	—	—	502
Net loss attributable to noncontrolling interests	—	—	—	—	—	(1)	(1)
Currency translation adjustment included in other comprehensive income (loss)	—	—	—	—	(146)	—	(146)
Change in fair value of effective portion of cash flow hedges, net of tax provision of $165 included in other comprehensive income (loss)	—	—	—	—	480	—	480
Change in pension and other benefits, net of tax provision of $2 included in other comprehensive income (loss)	—	—	—	—	7	—	7
Return of capital to our common shareholder	—	—	(100)	—	—	—	(100)
Balance as of December 31, 2022	1,000	$ —	$ 1,208	$ 2,316	$ (279)	$ 6	$ 3,251

	Equity of our Common Shareholder						
	Common Stock						
	Shares	Amount	Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Noncontrolling Interests	Total Equity
Balance as of September 30, 2021	1,000	$ —	$ 1,308	$ 1,337	$ (547)	$ (16)	$ 2,082
Net income attributable to our common shareholder	—	—	—	262	—	—	262
Currency translation adjustment included in other comprehensive income (loss)	—	—	—	—	6	—	6
Change in fair value of effective portion of cash flow hedges, net of tax provision of $42 included in other comprehensive income (loss)	—	—	—	—	120	—	120
Change in pension and other benefits, net of tax provision of $1 included in other comprehensive income (loss)	—	—	—	—	5	1	6
Balance as of December 31, 2021	1,000	$ —	$ 1,308	$ 1,599	$ (416)	$ (15)	$ 2,476

	Equity of our Common Shareholder						
	Common Stock						
	Shares	Amount	Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Noncontrolling Interests	Total Equity
Balance as of September 30, 2022	1,000	$ —	$ 1,208	$ 2,304	$ (368)	$ 6	$ 3,150
Net income attributable to our common shareholder	—	—	—	12	—	—	12
Currency translation adjustment included in other comprehensive income (loss)	—	—	—	—	215	—	215
Change in fair value of effective portion of cash flow hedges, net of tax benefit of $37 included in other comprehensive income (loss)	—	—	—	—	(121)	—	(121)
Change in pension and other benefits, net of tax benefit of $1 included in other comprehensive income (loss)	—	—	—	—	(5)	—	(5)
Balance as of December 31, 2022	1,000	$ —	$ 1,208	$ 2,316	$ (279)	$ 6	$ 3,251

See accompanying notes to the condensed consolidated financial statements.

1. BUSINESS AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

References herein to "Novelis," the "Company," "we," "our," or "us" refer to Novelis Inc. and its subsidiaries unless the context specifically indicates otherwise. References herein to "Hindalco" refer to Hindalco Industries Limited. Hindalco acquired Novelis in May 2007. Effective September 1, 2022, Novelis Inc. and AV Metals, Inc. (which, prior to such date, was our sole shareholder and a wholly owned subsidiary of AV Minerals (Netherlands) N.V.) completed a plan of arrangement, pursuant to which AV Metals, Inc. merged with and into Novelis Inc., with Novelis Inc. surviving the merger. As of the effectiveness of the plan of arrangement, we are a direct, wholly owned subsidiary of AV Minerals (Netherlands) N.V. Prior to the effectiveness of the plan of arrangement, AV Metals, Inc. was a holding company, with its assets being comprised solely of its investment in Novelis, and without any operations. The plan of arrangement was a combination of entities under common control and resulted in a change in the reporting entity. The opening balance of additional paid-in capital has been increased and that of retained earnings reduced by $4 million in the earliest period presented.

Organization and Description of Business

We produce aluminum plate, sheet, and light gauge products for use in the packaging market, which includes beverage and food can and foil products, as well as for use in the automotive, transportation, aerospace, electronics, architectural, and industrial product markets. As of December 31, 2022, we had manufacturing operations in nine countries on four continents: North America, South America, Asia, and Europe, through 33 operating facilities, which may include any combination of hot or cold rolling, finishing, casting, or recycling capabilities. We have recycling operations in 15 of our operating facilities to recycle post-consumer aluminum, such as UBCs, and post-industrial aluminum, such as class scrap.

The condensed consolidated balance sheet data as of March 31, 2022, was derived from the March 31, 2022, audited financial statements but does not include all disclosures required by U.S. GAAP. The accompanying unaudited condensed consolidated financial statements should be read in conjunction with our audited consolidated financial statements and accompanying notes in our 2022 Form 10-K. Management believes that all adjustments necessary for the fair statement of results, consisting of normally recurring items, have been included in the unaudited condensed consolidated financial statements for the interim periods presented.

Consolidation Policy

Our condensed consolidated financial statements have been prepared in accordance with U.S. GAAP and include the assets, liabilities, revenues, and expenses of all wholly owned subsidiaries, majority-owned subsidiaries over which we exercise control, and entities in which we have a controlling financial interest or are deemed to be the primary beneficiary. We eliminate intercompany accounts and transactions from our condensed consolidated financial statements.

We use the equity method to account for our investments in entities that we do not control but have the ability to exercise significant influence over operating and financial policies. Consolidated net income attributable to our common shareholder includes our share of the net income (loss) of these entities. The difference between consolidation and the equity method impacts certain of our financial ratios because of the presentation of the detailed line items reported in the condensed consolidated financial statements for consolidated entities, compared to a two-line presentation of investment in and advances to non-consolidated affiliates and equity in net income of non-consolidated affiliates.

Use of Estimates and Assumptions

The preparation of our condensed consolidated financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions. These estimates and assumptions affect the reported amounts of assets and liabilities, the disclosures of contingent assets and liabilities as of the date of the financial statements, and the reported amounts of revenues and expenses during the reporting periods. The principal areas of judgment relate to (1) impairment of goodwill; (2) actuarial assumptions related to pension and other postretirement benefit plans; (3) tax uncertainties and valuation allowances; and (4) assessment of loss contingencies, including environmental and litigation liabilities. Future events and their effects cannot be predicted with certainty, and accordingly, our accounting estimates require the exercise of judgment. The accounting estimates used in the preparation of our condensed consolidated financial statements may change as new events occur, more experience is acquired, additional information is obtained, and our operating environment changes. We evaluate and update our assumptions and estimates on an ongoing basis and may employ outside experts to assist in our evaluations. Actual results could differ from the estimates we have used.

Risks & Uncertainty resulting from COVID-19

Beginning late in the fourth quarter of fiscal 2020 and carrying into fiscal 2023, the COVID-19 pandemic and its unprecedented negative economic implications have affected production and sales across a range of industries around the world.

Our global operations, similar to those of many other large, multi-national corporations, have encountered higher costs and have felt this impact on customer demand, disruptions to our supply chain, interruptions to our production, and delays of shipments to our customers.

While much of our customer demand and shipments have recovered in the majority of our end markets, the overall extent of the impact of the COVID-19 pandemic on our operating results, cash flows, liquidity, and financial condition will depend on certain developments, including the duration and spread of the outbreak (including the emergence of variants of the virus) and its impact on our customers, employees, suppliers, and other partners. We believe this will be primarily driven by the severity and duration of the COVID-19 pandemic, the COVID-19 pandemic's impact on the U.S. and global economies, and the timing, scope, and effectiveness of federal, state, and local governmental responses, including the revision of governmental quarantine or other public health measures, medical remedies, and preventative measures, especially in response to new COVID-19 variants.

Although we have made our best estimates based on current information, the effects of the COVID-19 pandemic on our business may result in future changes to our estimates and assumptions based on its duration and on the emergence of new variants. Actual results could materially differ from the estimates and assumptions developed by management. If so, we may be subject to future impairment charges as well as changes to recorded reserves and valuations.

Risks & Uncertainties resulting from Inflation, Supply Chain Disruptions and Geopolitical Instability

The first three quarters of fiscal 2023 were marked by global economic uncertainty, capital markets disruption, and supply chain interruptions, which have been impacted by inflationary cost pressures, the ongoing COVID-19 pandemic, and geopolitical instability due to the military conflict between Russia and Ukraine. We have experienced increased inflationary cost pressures to date in fiscal 2023 resulting from global supply chain disruptions impacting the availability and price of materials and services including energy, freight, coatings, and alloys, such as magnesium. Geopolitical instability exacerbated inflationary cost pressures, which are expected to continue for the foreseeable future. We have not experienced significant direct impacts from the Russia-Ukraine conflict, as we do not have operations nor significant sales in either Russia or Ukraine. However, we have experienced indirect impacts, as the conflict has driven up energy prices globally, beginning in the fourth quarter of fiscal 2022, and we expect these costs will remain elevated until energy prices stabilize. To date, our operations have not been materially impacted by labor shortages, and we remain able to procure the necessary raw materials, parts, and equipment due to our diverse, global supplier network. We believe we are positioned to maintain production levels necessary to service our customers in the near term. However, we cannot predict how long energy and other operating input prices will remain inflated, supply chains will continue to experience disruptions, or potential future financial impacts. We have been able to mitigate a portion of the higher inflationary cost impact through a combination of hedging, passing through a portion of higher costs to customers, favorable pricing environments, and increased recycled inputs. There is no assurance that we will continue to be able to mitigate these higher costs in the future.

The overall extent of the impact of these factors on our operating results, cash flows, liquidity, and financial condition will depend on certain developments, including the duration of the current inflationary environment, supply chain disruptions, end market demand, and the Russia-Ukraine conflict. Although we have made our best estimates based on the current information, the effects of these factors on our business may result in future changes to our estimates and assumptions based on their duration. Actual results could materially differ from the estimates and assumptions developed by management. If so, we may be subject to future impairment charges as well as changes to recorded reserves and valuations.

Recently Adopted Accounting Standards

We did not adopt any new accounting pronouncements during the nine months ended December 31, 2022, that had a material impact on our consolidated financial condition, results of operations, or cash flows.

Recently Issued Accounting Standards (Not Yet Adopted)

In September 2022, the Financial Accounting Standards Board (FASB) issued ASU 2022-04, *Liabilities—Supplier Finance Programs (Topic 405-50) - Disclosure of Supplier Finance Program Obligations*. This ASU requires quantitative and qualitative disclosures about the key terms of supplier finance programs, an annual rollforward of obligations to finance providers, and interim disclosure of obligations as of each reporting period presented. This ASU is effective for all entities for fiscal years beginning after December 15, 2022, on a retrospective basis, including interim periods within those fiscal years, except for the requirement to disclose rollforward information, which is effective prospectively for fiscal years beginning after December 15, 2023. Early adoption is permitted. We are currently reviewing the provisions of this ASU but do not expect this guidance will have a material impact on our consolidated financial condition, results of operations, or cash flows.

There are no other recent accounting pronouncements pending adoption that we expect will have a material impact on our consolidated financial condition, results of operations, or cash flows.

2. DISCONTINUED OPERATIONS

On April 14, 2020, we closed the acquisition of Aleris for $2.8 billion. As a result of the antitrust review processes in the European Union, the U.S., and China, which were required for approval of the acquisition, we were obligated to divest Aleris' European and North American automotive assets, including the Duffel and Lewisport plants, respectively.

On September 30, 2020, we completed the sale of Duffel to Liberty House Group through its subsidiary, ALVANCE, the international aluminum business of the GFG Alliance. Upon closing, we received €210 million ($246 million as of September 30, 2020) in cash and a €100 million ($117 million as of September 30, 2020) receivable that was deemed to be contingent consideration subject to the results of a binding arbitration proceeding under German law.

We accounted for this contingent consideration at fair value and marked to fair value on a quarterly basis. As of June 30, 2021, Novelis marked all outstanding receivables related to the sale of Duffel to an estimated fair value of €45 million ($53 million), which resulted in a loss of €51 million ($61 million) recorded in loss from discontinued operations, net of tax.

In June 2022, Duffel was acquired by American Industrial Partners Capital Fund VII, L.P. (together with its affiliates, "AIP"). In December 2022, the Company reached a settlement with AIP in order to reach a resolution to the dispute being arbitrated, among other matters. As part of the settlement, the contingent consideration balance was settled for €45 million ($46 million), consisting of €5 million ($5 million) in cash paid on the settlement date and a note in the amount of €40 million ($41 million). The note bears interest at the annual rate of 5% and matures on December 31, 2027, with interest and €0.2 million of principal payable semi-annually and the remainder of the principal payable at maturity. As a result of the settlement, the arbitration was dismissed in January 2023. The settlement did not have a material impact on the Company's consolidated statement of operations.

The resolution reached with AIP also included the settlement of certain assets and liabilities that were previously classified as current assets and current liabilities of discontinued operations on our consolidated balance sheets. The settlement of such assets and liabilities did not have a material impact on the Company's consolidated statement of operations.

3. INVENTORIES

Inventories consists of the following.

in millions	December 31, 2022	March 31, 2022
Finished goods	$ 786	$ 677
Work in process	1,381	1,511
Raw materials	610	620
Supplies	271	230
Inventories	$ 3,048	$ 3,038

4. CONSOLIDATION

Variable Interest Entity

The entity that has a controlling financial interest in a VIE is referred to as the primary beneficiary and consolidates the VIE. An entity is deemed to have a controlling financial interest and is the primary beneficiary of a VIE if it has both the power to direct the activities of the VIE that most significantly impact the VIE's economic performance and an obligation to absorb losses or the right to receive benefits that could potentially be significant to the VIE.

Logan is a consolidated joint venture in which we hold 40% ownership. Our joint venture partner is Tri-Arrows. Logan processes metal received from Novelis and Tri-Arrows and charges the respective partner a fee to cover expenses. Logan is a thinly capitalized VIE that relies on the regular reimbursement of costs and expenses from Novelis and Tri-Arrows to fund its operations. Novelis is considered the primary beneficiary and consolidates Logan since it has the power to direct activities that most significantly impact Logan's economic performance, an obligation to absorb expected losses, and the right to receive benefits that could potentially be significant to the VIE.

Other than the contractually required reimbursements, we do not provide additional material support to Logan. Logan's creditors do not have recourse to our general credit. There are significant other assets used in the operations of Logan that are not part of the joint venture, as they are directly owned and consolidated by Novelis or Tri-Arrows.

The following table summarizes the carrying value and classification of assets and liabilities owned by the Logan joint venture and consolidated in our condensed consolidated balance sheets.

in millions	December 31, 2022	March 31, 2022
ASSETS		
Current assets:		
Cash and cash equivalents	$ 5	$ 3
Accounts receivable, net	10	50
Inventories	134	115
Prepaid expenses and other current assets	6	8
Total current assets	155	176
Property, plant and equipment, net	38	22
Goodwill	12	12
Deferred income tax assets	42	41
Other long-term assets	11	6
Total assets	$ 258	$ 257
LIABILITIES		
Current liabilities:		
Accounts payable	$ 62	$ 53
Accrued expenses and other current liabilities	25	28
Total current liabilities	87	81
Accrued postretirement benefits	147	153
Other long-term liabilities	6	2
Total liabilities	$ 240	$ 236

5. INVESTMENT IN AND ADVANCES TO NON-CONSOLIDATED AFFILIATES AND RELATED PARTY TRANSACTIONS

Included in the accompanying condensed consolidated financial statements are transactions and balances arising from business we conducted with our equity method non-consolidated affiliates.

Alunorf

Alunorf is a joint venture investment between Novelis Deutschland GmbH, a subsidiary of Novelis, and Speira GmbH. Each of the parties to the joint venture holds a 50% interest in the equity, profits and losses, shareholder voting, management control, and rights to use the production capacity of the facility. Alunorf tolls aluminum and charges the respective partner a fee to cover the associated expenses.

UAL

UAL is a joint venture investment between Novelis Korea Ltd., a subsidiary of Novelis, and Kobe. UAL is a thinly capitalized VIE that relies on the regular reimbursement of costs and expenses from Novelis and Kobe. UAL is controlled by an equally represented board of directors in which neither entity has sole decision-making ability regarding production operations or other significant decisions. Furthermore, neither entity has the ability to take the majority share of production or associated costs over the life of the joint venture. Our risk of loss is limited to the carrying value of our investment in and inventory-related receivables from UAL. UAL's creditors do not have recourse to our general credit. Therefore, UAL is accounted for as an equity method investment, and Novelis is not considered the primary beneficiary. UAL currently produces flat-rolled aluminum products exclusively for Novelis and Kobe. As of December 31, 2022, Novelis and Kobe both hold a 50% interest in UAL. During the three and nine months ended December 31, 2022, we made additional contributions to UAL in the amount of $13 million and $20 million, respectively. No such contributions were made in the three and nine months ended December 31, 2021.

AluInfra

AluInfra is a joint venture investment between Novelis Switzerland SA, a subsidiary of Novelis, and Constellium SE. Each of the parties to the joint venture holds a 50% interest in the equity, profits and losses, shareholder voting, management control, and rights to use the facility.

The following table summarizes the results of operations of our equity method non-consolidated affiliates in the aggregate and the nature and amounts of significant transactions we have with our non-consolidated affiliates. The amounts in the table below are disclosed at 100% of the operating results of these affiliates.

	Three Months Ended December 31,		Nine Months Ended December 31,	
in millions	2022	2021	2022	2021
Net sales	$ 388	$ 481	$ 1,344	$ 1,255
Costs and expenses related to net sales	363	446	1,282	1,193
Income tax provision	8	10	19	17
Net income	$ 17	$ 25	$ 43	$ 45
Purchases of tolling services from Alunorf	$ 85	$ 87	$ 253	$ 226

The following table describes related party balances in the accompanying condensed consolidated balance sheets. We had no other material related party balances with non-consolidated affiliates.

in millions	December 31, 2022	March 31, 2022
Accounts receivable, net — related parties	$ 161	$ 222
Other long-term assets — related parties	2	1
Accounts payable — related parties	294	320

Transactions with Hindalco

We occasionally have related party transactions with Hindalco. During the three and nine months ended December 31, 2022, and 2021, we recorded net sales of less than $1 million between Novelis and Hindalco related primarily to sales of equipment and other services. As of December 31, 2022, and March 31, 2022, there was $2 million and $1 million, respectively, of outstanding accounts receivable, net — related parties net of accounts payable — related parties related to transactions with Hindalco. During the three and nine months ended December 31, 2022, Novelis purchased less than $1 million in raw materials from Hindalco.

Return of Capital

We paid returns of capital to our common shareholder in the amount of $100 million during each of the second quarters of fiscal 2023 and 2022.

6. DEBT

Debt consists of the following.

in millions	December 31, 2022 Interest Rates[1]	December 31, 2022 Principal	December 31, 2022 Unamortized Carrying Value Adjustments[2]	December 31, 2022 Carrying Value	March 31, 2022 Principal	March 31, 2022 Unamortized Carrying Value Adjustments[2]	March 31, 2022 Carrying Value
Short-term borrowings	4.77 %	$ 896	$ —	$ 896	$ 529	$ —	$ 529
Floating rate Term Loans, due January 2025	6.48 %	754	(8)	746	760	(11)	749
Floating rate Term Loans, due March 2028	6.73 %	492	(7)	485	495	(8)	487
3.25% Senior Notes, due November 2026	3.25 %	750	(8)	742	750	(10)	740
3.375% Senior Notes, due April 2029	3.375 %	533	(9)	524	556	(10)	546
4.75% Senior Notes, due January 2030	4.75 %	1,600	(22)	1,578	1,600	(25)	1,575
3.875% Senior Notes, due August 2031	3.875 %	750	(10)	740	750	(10)	740
China Bank Loans, due August 2027	4.55 %	66	—	66	76	—	76
1.8% Brazil Loan, due June 2023	1.80 %	30	—	30	30	—	30
1.8% Brazil Loan, due December 2023	1.80 %	20	—	20	20	—	20
Finance lease obligations and other debt, due through June 2028	2.28 %	28	—	28	30	—	30
Total debt		$ 5,919	$ (64)	$ 5,855	$ 5,596	$ (74)	$ 5,522
Less: Short-term borrowings		(896)	—	(896)	(529)	—	(529)
Less: Current portion of long-term debt		(84)	—	(84)	(26)	—	(26)
Long-term debt, net of current portion		$ 4,939	$ (64)	$ 4,875	$ 5,041	$ (74)	$ 4,967

(1) Interest rates are the stated rates of interest on the debt instrument (not the effective interest rate) as of December 31, 2022, and therefore exclude the effects of accretion and amortization of debt issuance costs related to refinancing transactions and additional borrowings. We present stated rates of interest because they reflect the rate at which cash will be paid for future debt service.

(2) Amounts include unamortized debt issuance costs, fair value adjustments, and debt discounts.

Principal repayment requirements for our total debt over the next five years and thereafter using exchange rates as of December 31, 2022, for our debt denominated in foreign currencies are as follows (in millions).

As of December 31, 2022	Amount
Short-term borrowings and current portion of long-term debt due within one year	$ 980
2 years	31
3 years	757
4 years	774
5 years	26
Thereafter	3,351
Total	$ 5,919

Short-Term Borrowings

As of December 31, 2022, our short-term borrowings totaled $896 million, which consisted of $739 million of borrowings on our ABL Revolver, $106 million in short-term China loans (CNY 740 million), $50 million in short-term Brazil loans and $1 million in other short-term borrowings.

The short-term loan with Axis Bank Limited, IFSC Banking Unit, Gift City, matured in November 2022. We repaid the remaining principal balance of this loan in full at the maturity date.

Term Loan Facility

As of December 31, 2022, we were in compliance with the covenants of our Term Loan Facility.

ABL Revolver

In October 2021, Novelis amended the ABL Revolver facility. Prior to the USD LIBOR transition date, loans denominated in USD under the ABL Revolver will continue to bear interest at a rate of LIBOR plus a spread of 1.25% to 1.75% based on excess availability. The amendment provides for replacement reference rates, as applicable, based on the currency of the loan, as well as applicable spreads on and after the USD LIBOR transition date. The USD LIBOR transition date is defined as the earlier of (a) when the ICE Benchmark Administration ceases to provide the USD LIBOR and there is no available tenor of USD LIBOR or the Financial Conduct Authority announces all available tenors of USD LIBOR are no longer representative or (b) an early opt-in effective date.

In April 2022, Novelis amended the ABL Revolver facility to increase the limit on committed letters of credit under the facility to $275 million. There were no material costs incurred or accounting impacts as a result of this amendment.

In August 2022, Novelis amended the ABL Revolver facility to, among other things, increase the commitment under the ABL Revolver by $500 million to $2.0 billion and extend the maturity of the ABL Revolver until August 18, 2027. The amendment provides that new borrowings under the ABL Revolver facility made subsequent to the date of the amendment will incur interest at Term SOFR, EURIBOR, SONIA or SARON, as applicable based on the currency of the loan, plus a spread of 1.10% to 1.60% based on excess availability. The ABL Revolver facility also permits us to elect to borrow USD loans that accrue interest at a base rate (determined based on the greatest of one month Term SOFR plus 1.00%, a prime rate or an adjusted federal funds rate) plus a prime spread of 0.10% to 0.60% based on excess availability. As a result of this debt modification, the Company incurred $6 million of financing fees, which will be amortized over the term of the loan.

As of December 31, 2022, we had $739 million in borrowings under the ABL Revolver and were in compliance with debt covenants. We utilized $40 million of the ABL Revolver for letters of credit. We had availability of $884 million on the ABL Revolver, including $235 million of remaining availability that can be utilized for letters of credit.

Senior Notes

The Senior Notes are guaranteed, jointly and severally, on a senior unsecured basis, by Novelis Inc. and certain of its subsidiaries. The Senior Notes contain customary covenants and events of default that will limit our ability and, in certain instances, the ability of certain of our subsidiaries to incur additional debt and provide additional guarantees; pay dividends or return capital beyond certain amounts and make other restricted payments; create or permit certain liens; make certain asset sales; use the proceeds from the sales of assets and subsidiary stock; create or permit restrictions on the ability of certain of Novelis' subsidiaries to pay dividends or make other distributions to Novelis or certain of Novelis' subsidiaries, as applicable; engage in certain transactions with affiliates; enter into sale and leaseback transactions; designate subsidiaries as unrestricted subsidiaries; and consolidate, merge, or transfer all or substantially all of our assets and the assets of certain of our subsidiaries. During any future period in which either Standard & Poor's Ratings Group, Inc. or Moody's Investors Service, Inc. have assigned an investment grade credit rating to the Senior Notes and no default or event of default under the indenture has occurred and is continuing, certain of the covenants will be suspended. The Senior Notes include customary events of default, including a cross-acceleration event of default. The Senior Notes also contain customary call protection provisions for our bondholders that extend through November 2023 for the 3.25% Senior Notes due November 2026, through April 2024 for the 3.375% Senior Notes due April 2029, through January 2025 for the 4.75% Senior Notes due January 2030, and through August 2026 for the 3.875% Senior Notes due August 2031.

As of December 31, 2022, we were in compliance with the covenants of our Senior Notes.

7. SHARE-BASED COMPENSATION

During the nine months ended December 31, 2022, we granted 4,413,832 Hindalco phantom RSUs and 2,380,074 Hindalco SARs. Total share-based compensation expense was $9 million and $13 million for the three and nine months ended December 31, 2022, respectively. Total share-based compensation expense was $6 million and $30 million for the three and nine months ended December 31, 2021, respectively. As of December 31, 2022, the outstanding liability related to share-based compensation was $24 million.

The cash payments made to settle all Hindalco SAR liabilities were $8 million and $22 million in the nine months ended December 31, 2022, and 2021, respectively. Total cash payments made to settle RSUs were $15 million and $17 million in the nine months ended December 31, 2022, and 2021, respectively. As of December 31, 2022, unrecognized compensation expense related to the non-vested Hindalco SARs (assuming all future performance criteria are met) and the RSUs was $8 million and $23 million, respectively. The unrecognized expense related to the non-vested Hindalco SARs and the RSUs is expected to be recognized over weighted average periods of 1.3 years and 2.0 years, respectively.

8. POSTRETIREMENT BENEFIT PLANS

The Company recognizes actuarial gains and losses and prior service costs in the condensed consolidated balance sheet and recognizes changes in these amounts during the year in which changes occur through other comprehensive income (loss). The Company uses various assumptions when computing amounts relating to its defined benefit pension plan obligations and their associated expenses (including the discount rate and the expected rate of return on plan assets).

Components of net periodic benefit cost for all of our postretirement benefit plans are shown in the table below.

	Pension Benefit Plans		Other Benefit Plans	
	Three Months Ended December 31,		Three Months Ended December 31,	
in millions	2022	2021	2022	2021
Service cost	$ 7	$ 8	$ 1	$ 2
Interest cost	16	14	2	2
Expected return on assets	(18)	(19)	—	—
Amortization — losses, net	2	5	(1)	—
Amortization — prior service credit, net	(1)	(1)	—	(1)
Net periodic benefit cost(1)	$ 6	$ 7	$ 2	$ 3

	Pension Benefit Plans		Other Benefit Plans	
	Nine Months Ended December 31,		Nine Months Ended December 31,	
	2022	2021	2022	2021
Service cost	$ 20	$ 24	$ 3	$ 8
Interest cost	47	42	4	5
Expected return on assets	(54)	(58)	—	—
Amortization — losses, net	6	14	(1)	—
Amortization — prior service credit, net	(1)	(1)	(2)	(1)
Settlement/curtailments gain	—	(7)	—	—
Net periodic benefit cost(1)	$ 18	$ 14	$ 4	$ 12

(1) Service cost is included within cost of goods sold (exclusive of depreciation and amortization) and selling, general and administrative expenses, while all other cost components are recorded within other expenses (income), net.

The average expected long-term rate of return on all plan assets is 4.8% in fiscal 2023.

Employer Contributions to Plans

For pension plans, our policy is to fund an amount required to provide for contractual benefits attributed to service to date and amortize unfunded actuarial liabilities typically over periods of 15 years or less. We also participate in savings plans in Canada and the U.S., as well as defined contribution pension plans in the U.S., the U.K., Canada, Germany, Italy, Switzerland, and Brazil. We contributed the following amounts to all plans.

	Three Months Ended December 31,		Nine Months Ended December 31,	
in millions	2022	2021	2022	2021
Funded pension plans	$ 2	$ 5	$ 10	$ 22
Unfunded pension plans	4	4	12	10
Savings and defined contribution pension plans	13	11	40	38
Total contributions	$ 19	$ 20	$ 62	$ 70

During the remainder of fiscal 2023, we expect to contribute an additional $10 million to our funded pension plans, $4 million to our unfunded pension plans, and $13 million to our savings and defined contribution pension plans.

9. CURRENCY LOSSES (GAINS)

The following currency losses (gains) are included in other expenses (income), net in the accompanying condensed consolidated statements of operations.

	Three Months Ended December 31,		Nine Months Ended December 31,	
in millions	2022	2021	2022	2021
Losses (gains) on remeasurement of monetary assets and liabilities, net	$ 39	$ 6	$ (28)	$ (2)
(Gains) losses recognized on balance sheet remeasurement currency exchange contracts, net	(32)	(7)	46	1
Currency losses (gains), net	$ 7	$ (1)	$ 18	$ (1)

The following currency losses are included in accumulated other comprehensive loss, net of tax and noncontrolling interests in the accompanying condensed consolidated balance sheets.

in millions	Nine Months Ended December 31, 2022	Fiscal Year Ended March 31, 2022
Cumulative currency translation adjustment — beginning of period	$ (166)	$ (95)
Effect of changes in exchange rates	(146)	(71)
Cumulative currency translation adjustment — end of period	$ (312)	$ (166)

10. FINANCIAL INSTRUMENTS AND COMMODITY CONTRACTS

The following tables summarize the gross fair values of our financial instruments and commodity contracts as of the periods presented.

	December 31, 2022				
	Assets		Liabilities		Net Fair Value
in millions	Current	Noncurrent[1]	Current	Noncurrent[1]	Assets / (Liabilities)
Derivatives designated as hedging instruments:					
Cash flow hedges					
Metal contracts	$ 100	$ 4	$ (26)	$ (1)	$ 77
Currency exchange contracts	32	7	(23)	(4)	12
Energy contracts	8	2	(1)	—	9
Total derivatives designated as hedging instruments	$ 140	$ 13	$ (50)	$ (5)	$ 98
Derivatives not designated as hedging instruments:					
Metal contracts	$ 56	$ 1	$ (62)	$ (2)	$ (7)
Currency exchange contracts	39	1	(52)	(2)	(14)
Energy contracts	1	—	—	—	1
Total derivatives not designated as hedging instruments	$ 96	$ 2	$ (114)	$ (4)	$ (20)
Total derivative fair value	$ 236	$ 15	$ (164)	$ (9)	$ 78

	March 31, 2022				
	Assets		Liabilities		Net Fair Value
	Current	Noncurrent[1]	Current	Noncurrent[1]	Assets / (Liabilities)
Derivatives designated as hedging instruments:					
Cash flow hedges					
Metal contracts	$ 10	$ —	$ (535)	$ (7)	$ (532)
Currency exchange contracts	30	8	(28)	(1)	9
Energy contracts	22	6	—	—	28
Total derivatives designated as hedging instruments	$ 62	$ 14	$ (563)	$ (8)	$ (495)
Derivatives not designated as hedging instruments:					
Metal contracts	$ 290	$ 3	$ (372)	$ (2)	$ (81)
Currency exchange contracts	22	—	(24)	—	(2)
Energy contracts	3	—	—	—	3
Total derivatives not designated as hedging instruments	$ 315	$ 3	$ (396)	$ (2)	$ (80)
Total derivative fair value	$ 377	$ 17	$ (959)	$ (10)	$ (575)

(1) The noncurrent portions of derivative assets and liabilities are included in other long-term assets and other long-term liabilities, respectively, in the accompanying condensed consolidated balance sheets.

Metal

We use derivative instruments to preserve our conversion margins and manage the timing differences associated with metal price lag. We use over-the-counter derivatives indexed to LME (referred to as our "aluminum derivative forward contracts") to reduce our exposure to fluctuating metal prices associated with the period of time between the pricing of our purchases of inventory and the pricing of the sale of that inventory to our customers, which is known as "metal price lag." We also purchase forward LME aluminum contracts simultaneously with our sales contracts with customers that contain fixed metal prices. These LME aluminum forward contracts directly hedge the economic risk of future metal price fluctuations to better match the selling price of the metal with the purchase price of the metal. The volatility in LMPs also results in metal price lag.

Price risk arises due to fluctuating aluminum prices between the time the sales order is committed and the time the order is shipped. We identify and designate certain LME aluminum forward purchase contracts as cash flow hedges of the metal price risk associated with our future metal purchases that vary based on changes in the price of aluminum. Generally, such exposures do not extend beyond three years in length for all contracts, and the average duration of those contracts is less than one year.

Price risk exposure arises due to the timing lag between the LME based pricing of raw material aluminum purchases and the LME based pricing of finished product sales. We identify and designate certain LME aluminum forward sales contracts as cash flow hedges of the metal price risk associated with our future metal sales that vary based on changes in the price of aluminum. Generally, such exposures do not extend beyond four years in length for all contracts, and the average duration of those contracts is less than one year.

In addition to aluminum, we entered into LME copper and zinc forward contracts, as well as LMP forward contracts. As of December 31, 2022, and March 31, 2022, the fair value of these contracts represented an asset of less than $1 million and $4 million, respectively. These contracts are undesignated with an average duration of one year.

The following table summarizes our metal notional amount.

in kt	December 31, 2022	March 31, 2022
Hedge type		
Purchase (sale)		
Cash flow purchases	—	6
Cash flow sales	(866)	(910)
Not designated	(55)	(16)
Total, net	(921)	(920)

Foreign Currency

We use foreign exchange forward contracts to manage our exposure to changes in exchange rates. These exposures arise from recorded assets and liabilities, firm commitments, and forecasted cash flows denominated in currencies other than the functional currency of certain operations.

We use foreign currency contracts to hedge expected future foreign currency transactions, which include capital expenditures. These contracts cover the same periods as known or expected exposures. We had total notional amounts of $1.4 billion and $1.3 billion in outstanding foreign currency forwards designated as cash flow hedges as of December 31, 2022, and March 31, 2022, respectively.

As of December 31, 2022, and March 31, 2022, we had outstanding foreign currency exchange contracts with a total notional amount of $1.5 billion and $1.7 billion, respectively, to primarily hedge balance sheet remeasurement risk, which were not designated as hedges. Contracts representing the majority of this notional amount will mature by the fourth quarter of fiscal 2023 and first quarter of fiscal year 2024 and offset the remeasurement impact.

Energy

We use natural gas forward purchase contracts to manage our exposure to fluctuating energy prices in North America. We had a notional of 7 million MMBtu designated as cash flow hedges as of December 31, 2022, and the fair value was an asset of $8 million. There was a notional of 10 million MMBtu of natural gas forward contracts designated as cash flow hedges as of March 31, 2022, and the fair value was an asset of $25 million. As of December 31, 2022, we had a notional of less than 1 million MMBtu forward contracts that were not designated as hedges, and the fair value was an asset of $1 million. As of March 31, 2022, we had a notional of 1 million MMBtu and the fair value was an asset of $2 million. The average duration for all natural gas contracts is three years in length.

We use diesel fuel forward purchase contracts to manage our exposure to fluctuating fuel prices in North America and Europe. We had a notional of 2 million gallons designated as cash flow hedges as of December 31, 2022, and the fair value was an asset of $1 million. There was a notional of 4 million gallons designated as cash flow hedges as of March 31, 2022, and the fair value was an asset of $3 million. As of December 31, 2022, we had a notional of less than 1 million metric tonnes not designated as hedges, and the fair value was a liability of less than $1 million. As of March 31, 2022, we had a notional of less than 1 million metric tonnes of forward contracts that were not designated as hedges, and the fair value was an asset of $1 million. The average duration for all diesel fuel contracts is one year in length.

(Gain) Loss Recognition

The following table summarizes the (gains) losses associated with the change in fair value of derivative instruments not designated as hedges and the excluded portion of designated derivatives recognized in other expenses (income), net. (Gains) losses recognized in other line items in the condensed consolidated statement of operations are separately disclosed within this footnote.

	Three Months Ended December 31		Nine Months Ended December 31	
in millions	2022	2021	2022	2021
Derivative instruments not designated as hedges				
Metal contracts	$ 5	$ 23	$ 54	$ 8
Currency exchange contracts	(32)	(14)	52	(8)
Energy contracts[1]	—	(1)	(4)	(7)
(Gain) loss recognized in other expenses (income), net	(27)	8	102	(7)
Derivative instruments designated as hedges				
Gain recognized in other expenses (income), net[2]	—	—	(5)	—
Total (gain) loss recognized in other expenses (income), net	$ (27)	$ 8	$ 97	$ (7)
(Gains) losses recognized on balance sheet remeasurement currency exchange contracts, net	$ (32)	$ (7)	$ 46	$ 1
Realized losses (gains) on change in fair value of derivative instruments, net	4	41	71	(2)
Unrealized losses (gains) on change in fair value of derivative instruments, net	1	(26)	(20)	(6)
Total (gain) loss recognized in other expenses (income), net	$ (27)	$ 8	$ 97	$ (7)

(1) Includes amounts related to natural gas and diesel swaps not designated as hedges and electricity swap settlements.
(2) Amount includes forward market premium/discount excluded from hedging relationship and releases to income from accumulated other comprehensive loss on balance sheet remeasurement contracts.

The following table summarizes the impact on accumulated other comprehensive loss and earnings of derivative instruments designated as cash flow hedges. Within the next twelve months, we expect to reclassify $88 million of gains from accumulated other comprehensive loss to earnings, before taxes.

	Amount of Gain (Loss) Recognized in Other comprehensive income (loss) (Effective Portion)			
	Three Months Ended December 31,		Nine Months Ended December 31,	
in millions	2022	2021	2022	2021
Cash flow hedging derivatives				
Metal contracts	$ (135)	$ 35	$ 968	$ (488)
Currency exchange contracts	121	—	(56)	(19)
Energy contracts	(8)	(7)	8	23
Total cash flow hedging derivatives	$ (22)	$ 28	$ 920	$ (484)
Total	$ (22)	$ 28	$ 920	$ (484)

Gain (Loss) Reclassification

in millions	Amount of Gain (Loss) Reclassified from Accumulated other comprehensive loss into Income/(Expense) (Effective Portion) Three Months Ended December 31, 2022	2021	Nine Months Ended December 31, 2022	2021	Location of Gain (Loss) Reclassified from Accumulated other comprehensive loss into Earnings
Cash flow hedging derivatives					
Energy contracts(1)	$ 9	$ 6	$ 27	$ 6	Cost of goods sold (exclusive of depreciation and amortization)
Metal contracts	(3)	4	—	9	Cost of goods sold (exclusive of depreciation and amortization)
Metal contracts	139	(136)	286	(449)	Net sales
Currency exchange contracts	5	1	16	4	Cost of goods sold (exclusive of depreciation and amortization)
Currency exchange contracts	—	—	1	—	Selling, general and administrative expenses
Currency exchange contracts	(18)	(5)	(46)	(6)	Net sales
Currency exchange contracts	(1)	(1)	(4)	(2)	Depreciation and amortization
Total	$ 131	$ (131)	$ 280	$ (438)	Income from continuing operations before income tax provision
	(32)	33	(64)	112	Income tax (benefit) provision
	$ 99	$ (98)	$ 216	$ (326)	Net income from continuing operations

(1) Includes amounts related to electricity, natural gas, and diesel swaps.

The entire change in the fair value of the hedging instrument included in the assessment of hedge effectiveness is included in other comprehensive (loss) income and reclassified to earnings in the period in which earnings are impacted by the hedged items or in the period that the transaction becomes probable of not occurring. The was no amount excluded from the assessment of effectiveness recognized in earnings for the periods ended December 31, 2022, and 2021.

11. ACCUMULATED OTHER COMPREHENSIVE LOSS

The following tables summarize the change in the components of accumulated other comprehensive loss, excluding noncontrolling interests, for the periods presented.

in millions	Currency Translation	Cash Flow Hedges[1]	Postretirement Benefit Plans[2]	Total
Balance as of September 30, 2022	$ (527)	$ 166	$ (7)	$ (368)
Other comprehensive income (loss) before reclassifications	215	(22)	(3)	190
Amounts reclassified from accumulated other comprehensive loss, net	—	(99)	(2)	(101)
Net current-period other comprehensive income (loss)	215	(121)	(5)	89
Balance as of December 31, 2022	$ (312)	$ 45	$ (12)	$ (279)

	Currency Translation	Cash Flow Hedges[1]	Postretirement Benefit Plans[2]	Total
Balance as of September 30, 2021	$ (129)	$ (285)	$ (133)	$ (547)
Other comprehensive income before reclassifications	6	22	4	32
Amounts reclassified from accumulated other comprehensive loss, net	—	98	1	99
Net current-period other comprehensive income	6	120	5	131
Balance as of December 31, 2021	$ (123)	$ (165)	$ (128)	$ (416)

	Currency Translation	Cash Flow Hedges[1]	Postretirement Benefit Plans[2]	Total
Balance as of March 31, 2022	$ (166)	$ (435)	$ (19)	$ (620)
Other comprehensive (loss) income before reclassifications	(146)	696	8	558
Amounts reclassified from accumulated other comprehensive loss, net	—	(216)	(1)	(217)
Net current-period other comprehensive (loss) income	(146)	480	7	341
Balance as of December 31, 2022	$ (312)	$ 45	$ (12)	$ (279)

	Currency Translation	Cash Flow Hedges[1]	Postretirement Benefit Plans[2]	Total
Balance as of March 31, 2021	$ (95)	$ (133)	$ (138)	$ (366)
Other comprehensive (loss) income before reclassifications	(28)	(358)	9	(377)
Amounts reclassified from accumulated other comprehensive loss, net	—	326	1	327
Net current-period other comprehensive (loss) income	(28)	(32)	10	(50)
Balance as of December 31, 2021	$ (123)	$ (165)	$ (128)	$ (416)

(1) For additional information on our cash flow hedges, see Note 10 – Financial Instruments and Commodity Contracts.
(2) For additional information on our postretirement benefit plans, see Note 8 – Postretirement Benefit Plans.

12. FAIR VALUE MEASUREMENTS

We record certain assets and liabilities, primarily derivative instruments, on our condensed consolidated balance sheets at fair value. We also disclose the fair values of certain financial instruments, including debt and loans receivable, which are not recorded at fair value. Our objective in measuring fair value is to estimate an exit price in an orderly transaction between market participants on the measurement date. We consider factors such as liquidity, bid/offer spreads, and nonperformance risk, including our own nonperformance risk, in measuring fair value. We use observable market inputs wherever possible. To the extent observable market inputs are not available, our fair value measurements will reflect the assumptions used. We grade the level of the inputs and assumptions used according to a three-tier hierarchy:

Level 1 — Unadjusted quoted prices in active markets for identical, unrestricted assets or liabilities we have the ability to access at the measurement date.

Level 2 — Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.

Level 3 — Unobservable inputs for which there is little or no market data, which require us to develop our own assumptions based on the best information available as to what market participants would use in pricing the asset or liability.

The following section describes the valuation methodologies we used to measure our various financial instruments at fair value, including an indication of the level in the fair value hierarchy in which each instrument is generally classified.

Derivative Contracts

For certain derivative contracts with fair values based upon trades in liquid markets, such as aluminum, zinc, copper, foreign exchange, natural gas, and diesel fuel forward contracts and options, valuation model inputs can generally be verified and valuation techniques do not involve significant judgment. The fair values of such financial instruments are generally classified within Level 2 of the fair value hierarchy.

The majority of our derivative contracts are valued using industry-standard models with observable market inputs as their basis, such as time value, forward interest rates, volatility factors, and current (spot) and forward market prices. We generally classify these instruments within Level 2 of the valuation hierarchy. Such derivatives include interest rate swaps, foreign currency contracts, aluminum, copper, and zinc forward contracts, and natural gas and diesel fuel forward contracts.

For Level 2 and 3 of the fair value hierarchy, where appropriate, valuations are adjusted for various factors such as liquidity, bid/offer spreads, and credit considerations (nonperformance risk). We regularly monitor these factors along with significant market inputs and assumptions used in our fair value measurements and evaluate the level of the valuation input according to the fair value hierarchy. This may result in a transfer between levels in the hierarchy from period to period. As of December 31, 2022, and March 31, 2022, we did not have any Level 1 or Level 3 derivative contracts. No amounts were transferred between levels in the fair value hierarchy.

All of the Company's derivative instruments are carried at fair value in the statements of financial position prior to considering master netting agreements. The fair values of all derivative instruments are recognized as assets or liabilities at the balance sheet date and are reported gross.

The following table presents our derivative assets and liabilities which were measured and recognized at fair value on a recurring basis classified under the appropriate level of the fair value hierarchy as of December 31, 2022, and March 31, 2022. The table below also discloses the net fair value of the derivative instruments after considering the impact of master netting agreements.

	December 31, 2022		March 31, 2022	
in millions	Assets	Liabilities	Assets	Liabilities
Level 2 instruments:				
Metal contracts	$ 161	$ (91)	$ 303	$ (916)
Currency exchange contracts	79	(81)	60	(53)
Energy contracts	11	(1)	31	—
Total level 2 instruments	$ 251	$ (173)	$ 394	$ (969)
Netting adjustment[(1)]	(91)	91	(236)	236
Total net	$ 160	$ (82)	$ 158	$ (733)

(1) Amounts represent the impact of legally enforceable master netting agreements that allow the Company to settle positive and negative positions with the same counterparties.

In addition to our derivative assets and liabilities held at fair value, our consolidated balance sheet as of March 31, 2022 includes a Level 3 receivable related to the contingent consideration for the sale of Duffel to ALVANCE. Upon closing on September 30, 2020, we recorded a receivable at a fair value of €93 million ($109 million) measured based on the anticipated outcome, timeline of arbitration of greater than one year, and a discount rate of 5%. During the first quarter of fiscal 2022, Novelis marked all outstanding receivables related to the sale of Duffel to an estimated fair value of €45 million ($53 million), which resulted in a loss of €51 million ($61 million) recorded in loss from discontinued operations, net of tax. As further discussed in Note 2 – Discontinued Operations, in December 2022, the Company reached an agreement with the current owner of Duffel, where the outstanding contingent consideration receivable was settled in exchange for €5 million ($5 million) in cash and a note receivable in the amount of €40 million ($41 million). The note receivable is not carried at fair value, but we will continue to assess its collectibility on a quarterly basis. The fair value of the note receivable is determined using Level 2 inputs and is materially consistent with the carrying value.

Financial Instruments Not Recorded at Fair Value

The table below presents the estimated fair value of certain financial instruments not recorded at fair value on a recurring basis. The table excludes finance leases and short-term financial assets and liabilities for which we believe carrying value approximates fair value. We value long-term receivables and long-term debt using Level 2 inputs. Valuations are based on either market and/or broker ask prices when available or on a standard credit adjusted discounted cash flow model using market observable inputs.

	December 31, 2022		March 31, 2022	
in millions	Carrying Value	Fair Value	Carrying Value	Fair Value
Long-term receivables from related parties	$ 2	$ 2	$ 1	$ 1
Total debt — third parties (excluding finance leases and short-term borrowings)	4,931	4,570	4,963	4,912

13. OTHER EXPENSES (INCOME), NET

Other expenses (income), net consists of the following.

in millions	Three Months Ended December 31, 2022	Three Months Ended December 31, 2021	Nine Months Ended December 31, 2022	Nine Months Ended December 31, 2021
Currency losses (gains), net[1]	$ 7	$ (1)	$ 18	$ (1)
Unrealized losses (gains) on change in fair value of derivative instruments, net[2]	1	(26)	(20)	(6)
Realized losses (gains) on change in fair value of derivative instruments, net[2]	4	41	71	(2)
Gain on sale of business[3]	—	(15)	—	(15)
Loss on sale of assets, net	—	3	1	5
Loss (gain) on Brazilian tax litigation, net[4]	1	(9)	1	(85)
Interest income	(6)	(2)	(14)	(6)
Non-operating net periodic benefit cost[5]	—	—	(1)	(6)
Other, net[6]	—	7	11	30
Other expenses (income), net	$ 7	$ (2)	$ 67	$ (86)

(1) Includes losses (gains) recognized on balance sheet remeasurement currency exchange contracts, net. See Note 9 – Currency Losses (Gains) for further details.
(2) See Note 10 – Financial Instruments and Commodity Contracts for further details.
(3) During the third quarter of fiscal 2022, Novelis sold 90% of its equity ownership in Saras Micro Devices, Inc., an early stage business founded by Novelis related to the development, design, manufacturing, and sale of aluminum-integrated passive devices for use in semiconductor and electronic systems. The sale resulted in a $15 million gain on sale of business.
(4) See Note 15 – Commitments and Contingencies for further details.
(5) Represents net periodic benefit cost, exclusive of service cost for the Company's pension and other post-retirement plans. For further details, refer to Note 8 – Postretirement Benefit Plans.
(6) Other, net for the three and nine months ended December 31, 2022, includes $10 million from the release of certain accrued expenses. Other, net for the nine months ended December 31, 2021, includes $18 million from the release of certain outstanding receivables.

14. INCOME TAXES

For the three months ended December 31, 2022, our effective tax rate differs from the Canadian statutory rate primarily due to the full-year forecasted effective tax rate taking into account income taxed at rates that differ from the 25% Canadian rate, including withholding taxes and changes to the Brazilian real foreign exchange rate, offset by income not subject to tax, tax credits, and tax benefits related to Korea tax reform. For the nine months ended December 31, 2022, our effective tax rate differs from the Canadian statutory rate primarily due to the full-year forecasted effective tax rate taking into account income taxed at rates that differ from the 25% Canadian rate, including withholding taxes, the availability of tax credits, income not subject to tax, and the change in valuation allowance. The change in valuation allowance is mainly attributable to the release of the full valuation allowance on temporary items and tax attributes of legacy Aleris entities in certain separate filer states and unitary filer states that require combined or separate reporting, resulting in a benefit of $11 million. For the three months ended December 31, 2021, our effective tax rate differs from the Canadian statutory rate primarily due to the full-year forecasted effective tax rate taking into account income taxed at rates that differ from the 25% Canadian rate, including withholding taxes and changes to the Brazilian real foreign exchange rate, offset by income not subject to tax, and tax credits. For the nine months ended December 31, 2021, our effective tax rate differs from the Canadian statutory rate primarily due to the full-year forecasted effective tax rate taking into account income taxed at rates that differ from the 25% Canadian rate, including withholding taxes and changes to the Brazilian real foreign exchange rate, offset by tax credits, income not subject to tax, and the enacted rate change in the United Kingdom. The enacted rate change in the United Kingdom provided a benefit of approximately $8 million.

As of December 31, 2022, we had a net deferred tax liability of $155 million. This amount included gross deferred tax assets of approximately $1.4 billion and a valuation allowance of $724 million. It is reasonably possible that our estimates of future taxable income may change within the next twelve months resulting in a change to the valuation allowance in one or more jurisdictions.

Tax Uncertainties

Certain tax filings for fiscal years 2007 through 2020 are subject to tax examinations and judicial and administrative proceedings. As a result of further settlement of audits, judicial decisions, the filing of amended tax returns, or the expiration of statutes of limitations, our reserves for unrecognized tax benefits, as well as reserves for interest and penalties, may change in the next 12 months. With few exceptions, tax returns for all jurisdictions for all tax years before 2007 are no longer subject to examination by taxing authorities or subject to any judicial or administrative proceedings. During the three months ended December 31, 2022, certain estimates and assumptions associated with uncertain tax positions changed, none of which had a material impact on our financial statements for any periods presented.

15. COMMITMENTS AND CONTINGENCIES

We are party to, and may in the future be involved in or subject to, disputes, claims, and proceedings arising in the ordinary course of our business, including some we assert against others, such as environmental, health and safety, product liability, employee, tax, personal injury, and other matters. For certain matters in which the Company is involved for which a loss is reasonably possible, we are unable to estimate a loss. For certain other matters for which a loss is reasonably possible and the loss is estimable, we have estimated the aggregated range of loss as $0 to $66 million. This estimated aggregate range of reasonably possible losses is based upon currently available information. The Company's estimates involve significant judgment. Therefore, the estimate will change from time to time and actual losses may differ from the current estimate. We review the status of, and estimated liability related to, pending claims and civil actions on a quarterly basis. The evaluation model includes all asserted and unasserted claims that can be reasonably identified, including claims relating to our responsibility for compliance with environmental, health and safety laws and regulations in the jurisdictions in which we operate or formerly operated. The estimated costs in respect of such reported liabilities are not offset by amounts related to insurance or indemnification arrangements unless otherwise noted.

Environmental Matters

We have established liabilities based on our estimates for currently anticipated costs associated with environmental matters. We estimate that the costs related to our environmental liabilities as of December 31, 2022, and March 31, 2022, were $32 million and $35 million, respectively. Of the total $32 million as of December 31, 2022, $15 million is associated with an environmental reserve, $14 million is associated with undiscounted environmental clean-up costs, and $3 million is associated with restructuring actions. As of December 31, 2022, $19 million is included in accrued expenses and other current liabilities and the remainder is within other long-term liabilities in our accompanying condensed consolidated balance sheets.

Brazilian Tax Litigation

Under a federal tax dispute settlement program established by the Brazilian government, we have settled several disputes with Brazil's tax authorities regarding various forms of manufacturing taxes and social security contributions. In most cases, we are paying the settlement amounts over a period of 180 months, however, in some cases we pay the settlement amounts over a shorter period. Total settlement liabilities as of December 31, 2022, and March 31, 2022, were $12 million and $18 million, respectively. As of December 31, 2022, $7 million is included in accrued expenses and other current liabilities and the remainder is within other long-term liabilities in our accompanying condensed consolidated balance sheets.

In addition to the disputes we have settled under the federal tax dispute settlement program, we are involved in several other unresolved tax and other legal claims in Brazil. Total liabilities for other disputes and claims were $36 million as of December 31, 2022, and $38 million as of March 31, 2022. As of December 31, 2022, $2 million is included in accrued expenses and other current liabilities and the remainder is within other long-term liabilities in our accompanying condensed consolidated balance sheets. Additionally, we have included in the range of reasonably possible losses disclosed above any unresolved tax disputes or other contingencies for which a loss is reasonably possible and estimable. The interest cost recorded on these settlement liabilities offset by interest earned on the cash deposits is reported in other expenses (income), net on the condensed consolidated statement of operations.

During prior fiscal years, we received multiple favorable rulings from the Brazilian court that recognized the right to exclude certain taxes from the tax base used to calculate contributions to the social integration program and social security contributions on gross revenues, also known as PIS and COFINS. As a result of these cases, we had the right to apply for tax credits for the amounts overpaid during specified tax years. These credits and corresponding interest could be used to offset various Brazilian federal taxes in future years.

The Brazilian Office of the Attorney General of the National Treasury sought clarification from the Brazilian Supreme Court on certain matters, including the calculation methodology (i.e. gross or net credit amount) and timing of these credits. Since the Brazilian Supreme Court had not yet confirmed the appropriate methodology when these favorable rulings were received, Novelis recorded this benefit in the corresponding periods based on the net credit amount.

However, during the first quarter of fiscal 2022, the Brazilian Supreme Court ruled that the credit should be calculated using the gross methodology for lawsuits filed prior to March 2017. As such, Novelis recorded additional income of $76 million in other expenses (income), net, $48 million of which is principal and $29 million is interest, related to PIS and COFINS for the years 2009 to 2017, net of $1 million in litigation expense.

During the third quarter of fiscal 2022, Novelis recorded $5 million of additional income in other (income) expenses, net, $2 million of which is principal and $3 million of which is interest, related to PIS and COFINS for certain periods.

The credit amounts, interest calculation, and supporting documentation are subject to further validation and scrutiny by tax authorities for five years after the credits are utilized. Thus, credits recognized may differ from these amounts.

In order to qualify for these credits, the Company is required to compile and present verifiable support validating the credits. During fiscal 2022, Novelis applied for and received official authorization from The Special Department of Federal Revenue of Brazil ("Receita Federal") to use the PIS and COFINS credits related to certain periods. Novelis was able to utilize a majority of these credits to offset taxes paid in fiscal 2022 and utilized the remaining credits in the first quarter of fiscal 2023.

16. SEGMENT, GEOGRAPHICAL AREA, MAJOR CUSTOMER AND MAJOR SUPPLIER INFORMATION

Segment Information

Due in part to the regional nature of the supply and demand of aluminum rolled products and to best serve our customers, we manage our activities based on geographical areas and are organized under four operating segments: North America, Europe, Asia, and South America. All of our segments manufacture aluminum sheet and light gauge products. We also manufacture aluminum plate products in Europe and Asia.

The following is a description of our operating segments.

North America. Headquartered in Atlanta, Georgia, this segment operates 17 plants, including seven with recycling operations, in two countries.

Europe. Headquartered in Küsnacht, Switzerland, this segment operates 10 plants, including five with recycling operations, in four countries.

Asia. Headquartered in Seoul, South Korea, this segment operates four plants, including two with recycling operations, in two countries.

South America. Headquartered in São Paulo, Brazil, this segment operates two plants in Brazil, including one with recycling operations.

Net sales and expenses are measured in accordance with the policies and procedures described in Note 1 – Business and Summary of Significant Accounting Policies within our 2022 Form 10-K.

We measure the profitability and financial performance of our operating segments based on Adjusted EBITDA. Adjusted EBITDA provides a measure of our underlying segment results that is in line with our approach to risk management. We define Adjusted EBITDA as earnings before (a) depreciation and amortization; (b) interest expense and amortization of debt issuance costs; (c) interest income; (d) unrealized gains (losses) on change in fair value of derivative instruments, net, except for foreign currency remeasurement hedging activities, which are included in Adjusted EBITDA; (e) impairment of goodwill; (f) (gain) loss on extinguishment of debt, net; (g) noncontrolling interests' share; (h) adjustments to reconcile our proportional share of Adjusted EBITDA from non-consolidated affiliates to income as determined on the equity method of accounting; (i) restructuring and impairment expenses (reversals), net; (j) gains or losses on disposals of property, plant and equipment and businesses, net; (k) other costs, net; (l) litigation settlement, net of insurance recoveries; (m) sale transaction fees; (n) income tax provision (benefit); (o) cumulative effect of accounting change, net of tax; (p) metal price lag; (q) business acquisition and other related costs; (r) purchase price accounting adjustments; (s) income (loss) from discontinued operations, net of tax; and (t) loss on sale of discontinued operations, net of tax.

Prior to the three months ended June 30, 2022, we also utilized the term Segment Income to refer to Adjusted EBITDA. Both terms have the same definition and there is no difference in the composition or calculation of Adjusted EBITDA for the periods presented and Segment Income previously reported. Under ASC 280, Segment Reporting ("ASC 280"), our measure of segment profitability and financial performance of our operating segments is Adjusted EBITDA, and when used in this context, Adjusted EBITDA is a financial measure prepared in accordance with U.S. GAAP.

The tables that follow show selected segment financial information. "Eliminations and Other" includes eliminations and functions that are managed directly from our corporate office that have not been allocated to our operating segments as well as the adjustments for proportional consolidation and eliminations of intersegment net sales. The financial information for our segments includes the results of our affiliates on a proportionately consolidated basis, which is consistent with the way we manage our business segments. In order to reconcile the financial information for the segments shown in the tables below to the relevant U.S. GAAP based measures, we must adjust proportional consolidation of each line item. The "Eliminations and Other" in net sales – third party includes the net sales attributable to our joint venture party, Tri-Arrows, for our Logan affiliate because we consolidate 100% of the Logan joint venture for U.S. GAAP, but we manage our Logan affiliate on a proportionately consolidated basis. See Note 4 – Consolidation and Note 5 – Investment in and Advances to Non-Consolidated Affiliates and Related Party Transactions for further information about these affiliates. Additionally, we eliminate intersegment sales and intersegment income for reporting on a consolidated basis.

Selected Segment Financial Information

in millions

December 31, 2022	North America	Europe	Asia	South America	Eliminations and Other[1]	Total
Investment in and advances to non-consolidated affiliates	$ —	$ 506	$ 340	$ —	$ —	$ 846
Total assets	4,971	3,943	2,412	2,159	765	14,250

in millions

March 31, 2022	North America	Europe	Asia	South America	Eliminations and Other[1]	Total
Investment in and advances to non-consolidated affiliates	$ —	$ 508	$ 324	$ —	$ —	$ 832
Total assets	5,084	4,535	2,627	2,115	735	15,096

in millions

Selected Operating Results Three Months Ended December 31, 2022	North America	Europe	Asia	South America	Eliminations and Other	Total
Net sales – third party	$ 1,762	$ 1,083	$ 574	$ 662	$ 120	$ 4,201
Net sales – intersegment	—	44	8	15	(67)	—
Net sales	$ 1,762	$ 1,127	$ 582	$ 677	$ 53	$ 4,201
Depreciation and amortization	$ 55	$ 41	$ 21	$ 20	$ (4)	$ 133
Income tax (benefit) provision	(15)	(18)	(5)	25	7	(6)
Capital expenditures	107	29	28	20	(6)	178

in millions

Selected Operating Results Three Months Ended December 31, 2021	North America	Europe	Asia	South America	Eliminations and Other	Total
Net sales – third party	$ 1,716	$ 1,116	$ 697	$ 698	$ 99	$ 4,326
Net sales – intersegment	—	40	13	29	(82)	—
Net sales	$ 1,716	$ 1,156	$ 710	$ 727	$ 17	$ 4,326
Depreciation and amortization	$ 58	$ 41	$ 23	$ 21	$ (6)	$ 137
Income tax (benefit) provision	(9)	1	13	48	36	89
Capital expenditures	33	29	23	14	(6)	93

in millions

Selected Operating Results Nine Months Ended December 31, 2022	North America	Europe	Asia	South America	Eliminations and Other	Total
Net sales – third party	$ 5,816	$ 3,707	$ 2,105	$ 2,106	$ 355	$ 14,089
Net sales – intersegment	—	129	184	148	(461)	—
Net sales	$ 5,816	$ 3,836	$ 2,289	$ 2,254	$ (106)	$ 14,089
Depreciation and amortization	$ 170	$ 119	$ 64	$ 60	$ (8)	$ 405
Income tax (benefit) provision	(38)	(13)	25	98	74	146
Capital expenditures	259	72	70	57	4	462

in millions

Selected Operating Results Nine Months Ended December 31, 2021	North America	Europe	Asia	South America	Eliminations and Other	Total
Net sales – third party	$ 4,843	$ 3,228	$ 2,085	$ 1,864	$ 280	$ 12,300
Net sales – intersegment	—	137	25	34	(196)	—
Net sales	$ 4,843	$ 3,365	$ 2,110	$ 1,898	$ 84	$ 12,300
Depreciation and amortization	$ 171	$ 128	$ 67	$ 58	$ (19)	$ 405
Income tax provision	36	24	49	134	33	276
Capital expenditures	112	62	59	63	(9)	287

(1) Total assets includes assets of discontinued operations.

The table below displays the reconciliation from net income attributable to our common shareholder to Adjusted EBITDA.

	Three Months Ended December 31,		Nine Months Ended December 31,	
in millions	2022	2021	2022	2021
Net income attributable to our common shareholder	$ 12	$ 262	$ 502	$ 739
Net loss attributable to noncontrolling interests	—	—	(1)	—
Income tax (benefit) provision	(6)	89	146	276
(Income) loss from discontinued operations, net of tax	—	(3)	2	62
Income from continuing operations before income tax provision	6	348	649	1,077
Depreciation and amortization	133	137	405	405
Interest expense and amortization of debt issuance costs	75	54	198	173
Adjustment to reconcile proportional consolidation[1]	13	17	40	46
Unrealized losses (gains) on change in fair value of derivative instruments, net	1	(26)	(20)	(6)
Realized gains on derivative instruments not included in Adjusted EBITDA[2]	(1)	—	(3)	(1)
Gain on sale of business[3]	—	(15)	—	(15)
Loss on extinguishment of debt, net	—	1	—	63
Restructuring and impairment expenses, net	5	3	7	1
Loss on sale of assets, net	—	3	1	5
Metal price lag	109	(14)	130	(127)
Other, net[4]	—	(2)	1	(7)
Adjusted EBITDA	$ 341	$ 506	$ 1,408	$ 1,614

(1) Adjustment to reconcile proportional consolidation relates to depreciation, amortization, and income taxes of our equity method investments. Income taxes related to our equity method investments are reflected in the carrying value of the investment and not in our consolidated income tax (benefit) provision.
(2) Realized gains on derivative instruments not included in Adjusted EBITDA represents foreign currency derivatives unrelated to operations.
(3) Gain on sale of business relates to Novelis' sale of 90% of its equity ownership in Saras Micro Devices, Inc. See Note 13 – Other (Income) Expenses, net for further details.
(4) For the nine months ended December 31, 2021, other, net includes $36 million of interest income recognized as a result of Brazilian tax litigation settlements and interest income, partially offset by $18 million from the release of certain outstanding receivables.

The following table displays Adjusted EBITDA by reportable segment.

	Three Months Ended December 31,		Nine Months Ended December 31,	
in millions	2022	2021	2022	2021
North America	$ 124	$ 181	$ 542	$ 580
Europe	38	71	195	251
Asia	60	76	267	256
South America	124	178	407	525
Eliminations and Other	(5)	—	(3)	2
Adjusted EBITDA	$ 341	$ 506	$ 1,408	$ 1,614

Information about Product Sales, Major Customers, and Primary Supplier

Product Sales

The following table displays net sales by product end market.

in millions	Three Months Ended December 31, 2022	Three Months Ended December 31, 2021	Nine Months Ended December 31, 2022	Nine Months Ended December 31, 2021
Can	$ 1,998	$ 2,154	$ 6,800	$ 6,206
Automotive	934	885	2,876	2,395
Aerospace and industrial plate	180	125	543	361
Specialty	1,089	1,162	3,870	3,338
Net sales	$ 4,201	$ 4,326	$ 14,089	$ 12,300

Major Customers

The following table displays customers representing 10% or more of our net sales for any of the periods presented and their respective percentage of net sales.

	Three Months Ended December 31, 2022	Three Months Ended December 31, 2021	Nine Months Ended December 31, 2022	Nine Months Ended December 31, 2021
Ball	16 %	17 %	16 %	16 %

Primary Supplier

Rio Tinto is our primary supplier of metal inputs, including prime and sheet ingot. The table below shows our purchases from Rio Tinto as a percentage of our total combined metal purchases.

	Three Months Ended December 31, 2022	Three Months Ended December 31, 2021	Nine Months Ended December 31, 2022	Nine Months Ended December 31, 2021
Purchases from Rio Tinto as a percentage of total combined metal purchases	9 %	8 %	8 %	8 %

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

FORWARD-LOOKING STATEMENTS

The following information should be read together with our unaudited condensed consolidated financial statements and accompanying notes included elsewhere in this Form 10-Q for a more complete understanding of our financial condition and results of operations. The following discussion contains forward-looking statements that reflect our plans, estimates, and beliefs. Our actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to these differences include, but are not limited to, those discussed below, particularly in SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND MARKET DATA.

OVERVIEW AND REFERENCES

In this Form 10-Q, unless otherwise specified, the terms "we," "our," "us," the "Company," and "Novelis" refer to Novelis Inc., a company incorporated in Canada under the Canadian Business Corporations Act, and its subsidiaries. References herein to "Hindalco" refer to Hindalco Industries Limited, which acquired Novelis in May 2007.

Novelis is driven by its purpose of shaping a sustainable world together. We are a global leader in the production of innovative aluminum products and solutions and the world's largest recycler of aluminum. Our ambition is to be the leading provider of low-carbon, sustainable aluminum solutions and to achieve a fully circular economy by partnering with our suppliers and customers in beverage packaging, automotive, aerospace, and specialties (a diverse market including building and construction; signage; foil and packaging; commercial transportation; and commercial and consumer products, among others) markets throughout North America, Europe, Asia, and South America. Novelis is a subsidiary of Hindalco, an industry leader in aluminum and copper and the metals flagship company of the Aditya Birla Group, a multinational conglomerate based in Mumbai. As of December 31, 2022, we had manufacturing operations in nine countries on four continents: North America, South America, Asia, and Europe, through 33 operating facilities, which may include any combination of hot or cold rolling, finishing, casting, or recycling capabilities. We have recycling operations in 15 of our operating facilities to recycle post-consumer aluminum, such as UBCs, and post-industrial aluminum, such as class scrap.

As used in this Form 10-Q, consolidated "aluminum rolled product shipments," "flat-rolled product shipments," or "shipments" refers to aluminum rolled product shipments to third parties. Regional "aluminum rolled product shipments," "flat-rolled product shipments," or "shipments" refers to aluminum rolled product shipments to third parties and intersegment shipments to other Novelis regions. Shipment amounts also include tolling shipments. References to "total shipments" include aluminum rolled product shipments as well as certain other non-rolled product shipments, primarily scrap, UBCs, ingots, billets, and primary remelt. The term "aluminum rolled products" is synonymous with the terms "flat-rolled products" and "FRP," which are commonly used by manufacturers and third-party analysts in our industry. All tonnages are stated in metric tonnes. One metric tonne is equivalent to 2,204.6 pounds. One kt is 1,000 metric tonnes.

BUSINESS AND INDUSTRY CLIMATE

A little over a decade ago, we launched a strategy to transform and improve the profitability of our business through disciplined phases of significant capital investment in new capacity and capabilities. These investments enabled us to increase the amount of recycled content in our products, capitalize on favorable long-term market trends driving increased consumer demand for lightweight, sustainable aluminum products, and diversify and optimize our product portfolio. As a global leader in the aluminum flat-rolled products industry, we leveraged our new capacity, global footprint, scale, and solid customer relationships to drive volumes and capture favorable supply and demand market dynamics across all our end-use markets. With volume growth combined with improved pricing, a significant increase in scrap inputs, operational efficiencies, acquisition cost synergies, and high-capacity utilization rates, we significantly improved the profitability of our beverage packaging and specialties products and maintained high margins for automotive and aerospace products to deliver a 72% increase in total company Adjusted EBITDA per tonne to $530 and turn a net loss of $38 million into $955 million in net income between fiscal 2016 and fiscal 2022.

This improvement in profitability is despite increased inflationary cost pressures that began in early fiscal 2022 resulting from, among other factors, global supply chain disruptions and geopolitical instability impacting the availability and price of materials and services including freight, energy, coatings, and alloys, such as magnesium. However, these cost headwinds have intensified in fiscal 2023 and are expected to continue for the foreseeable future. Beginning in the fourth quarter of fiscal 2022, we have been impacted by higher energy prices globally, and especially in Europe, where the Russia-Ukraine conflict's negative impact on energy prices and raw materials has also caused reduced manufacturing and industrial demand. We expect such elevated costs and reduced demand until energy prices and economic conditions stabilize. Our operations otherwise have not been materially impacted by labor shortages, and we remain able to procure the necessary raw materials, parts, and equipment due to our diverse global supplier network. While we believe we are positioned to maintain production levels necessary to service our customers, we cannot predict supply chain disruptions or their potential future financial impacts. While our results are being negatively impacted by these higher costs, we have been able to partially mitigate a portion of the higher inflationary cost impact through a combination of hedging, passing through a portion of higher costs to customers, favorable pricing environments, and utilizing recycled materials. We have also begun implementing cost control measures across our global operations, including a focus on employment, professional services, and travel costs. There is no assurance that we will continue to be able to mitigate these higher costs in the future.

Our management administers an Enterprise Risk Management ("ERM") program, which is a comprehensive risk assessment and mitigation process that identifies and addresses all known current and potential material risks to Novelis' global operations, including legal and regulatory risks. The ERM team is led by an executive officer who delivers an ERM report to the Audit Committee of our board at least quarterly. The ERM team meets with or interviews approximately 80 employees each quarter to stay abreast of the latest risks we face. Throughout the escalation of the Russia-Ukraine conflict, our ERM team has monitored developments and gathered information about Novelis contacts with Russian businesses. Novelis' direct exposure to the conflict has been limited, as we have no operations, assets, or employees in either Russia or Ukraine, and we have only immaterial customer relationships in these countries historically. Sanctions, tariffs, a ban or similar actions impacting the supply of Russian aluminum could disrupt global aluminum supply. While one of our suppliers of metal is UC Rusal PLC ("Rusal"), a Russian aluminum company, we purchase metal from a diverse global portfolio of metal suppliers and are not dependent on Rusal for a significant portion of our metal supply. The ERM team also monitors other potential impacts of Russia's invasion of Ukraine, including impacts on the reliability of energy supplies to our European manufacturing sites and supply chain disruptions. This information is presented to, and discussed with, the Audit Committee of our board at least quarterly, with interim updates from our executive leadership as our board may require. In addition, we manage sanctions compliance through a global sanctions screening program, and our Information Security team monitors cybersecurity matters and makes periodic reports at meetings of our board.

We believe that global long-term demand for aluminum rolled products remains strong, driven by anticipated economic growth, material substitution, and sustainability considerations, including increased environmental awareness around polyethylene terephthalate ("PET") plastics. Disruption in demand for aluminum rolled products as a result of the COVID-19 pandemic and semiconductor shortages impacting the automotive industry appears to be moderating. However, we believe the challenging inflationary and geopolitical environment has increased economic uncertainty and is negatively impacting near-term demand in some end markets. The building and construction end market is where we see the most uncertainty, as it is more sensitive to inflation and interest rates. In addition, we are seeing reduced can sheet demand in the near term attributed to canmakers reducing their excess inventory as they adjust to a more moderated level of can demand.

Despite current market uncertainty, we believe that long-term demand for aluminum rolled products remains intact. Increasing customer preference for sustainable packaging options, and package mix shift toward infinitely recyclable aluminum are driving higher demand for aluminum beverage packaging worldwide. In the first half of fiscal 2022, we completed an investment to expand the rolling and recycling capacity, each by 100 kt, in our Pindamonhangaba, Brazil, plant to support this demand. Additionally, more than half of the 600 kt capacity of the greenfield rolling and recycling plant being built in Bay Minette, Alabama, announced in May 2022, will be used to serve the growing demand for aluminum beverage can sheet in North America. We continue to evaluate opportunities for additional capacity expansion across regions where local can sheet supply is insufficient to meet the rapid rise in demand.

We believe that long-term demand for aluminum automotive sheet will continue to grow, which drove our recently completed investments in automotive sheet finishing capacity in Guthrie, Kentucky, and Changzhou, China. This demand has been primarily driven by the benefits that result from using lightweight aluminum in vehicle structures and components, as automakers respond to stricter government regulations regarding emissions and fuel economy, while maintaining or improving vehicle safety and performance, resulting in increased competition with high-strength steel. We are also seeing increased demand for aluminum for electric vehicles, as aluminum's lighter weight can result in extended battery range.

We expect long-term demand for building and construction and other specialty products to grow due to increased customer preference for lightweight, sustainable materials and demand for aluminum plate in Asia to grow driven by the development and expansion of industries serving aerospace, rail, and other technically demanding applications.

While aerospace was muted in fiscal 2022 as air travel was impacted by the COVID-19 pandemic, shipments of aerospace aluminum plate and sheet have improved in fiscal year 2023 to date as demand has recovered toward pre-COVID levels. In the longer-term, we believe significant aircraft industry order backlogs for key OEMs, including Airbus and Boeing, will translate into growth in the future and that our multi-year supply agreements have positioned us to benefit from future expected demand.

We believe the long-term demand trends for flat-rolled aluminum products remain strong, and we have identified more than $4.5 billion of potential organic capital investment opportunities to grow Novelis' business through debottlenecking, recycling, and new capacity investments through fiscal 2027, focused on increasing capacity and capabilities that meet growing customer demand and align with our sustainability commitments. Of the more than $4.5 billion of potential investment opportunities we have identified, we have already allocated over $3.4 billion to the specific investments outlined below. We expect to fund these organic growth investments from internally generated cash flows.

In October 2021, we announced plans to invest approximately $130 million at our Oswego, New York, plant to meet growing customer demand for sustainable, aluminum flat-rolled products. We expect the project to increase hot mill capacity by 124 kt, with a total expected increase of finished goods capacity estimated in the range of 65 kt. The investment also includes enhancements to the plant's batch annealing capabilities for automotive sheet.

In October 2021, we announced plans to invest approximately $375 million to expand cold rolling and recycling capacity in Zhenjiang, China, to integrate our automotive business in Asia. This investment will also release rolling capacity at UAL, the Company's joint venture in South Korea, to serve the can and specialty products market. We are delaying the start of the project to an appropriate time given the current constraints arising from COVID lockdowns and the economic uncertainties which calls for prudence in deploying capital until we see a more stable environment.

In January 2022, we announced plans to invest approximately $365 million to build a highly advanced recycling center for automotive in the U.S., which will be adjacent to our existing automotive finishing plant in Guthrie, Kentucky. With an expected annual casting capacity of 240 kt of sheet ingot, we expect the facility will reduce the Company's carbon emissions by more than one million tonnes each year. We broke ground for this new recycling center in May 2022.

In February 2022, we announced plans to invest approximately $50 million to build a recycling and casting center at the site of our UAL joint venture in South Korea. Fully funded by Novelis, the Ulsan Recycling Center will have an annual casting capacity of 100 kt of low-carbon sheet ingot. Once online, we expect the recycling center to reduce the Company's carbon emissions by more than 420,000 tonnes each year. We broke ground on this new recycling and casting center in November 2022.

In March 2022, we announced a $50 million debottlenecking investment at our plant located in Pindamonhangaba, Brazil, to unlock approximately 70 kt of rolling capacity.

In May 2022, we announced plans to build an approximately $2.5 billion greenfield, fully integrated rolling and recycling plant in Bay Minette, Alabama. This new U.S. plant will support strong demand for sustainable beverage can and automotive aluminum sheet and advance a more circular economy. We broke ground for this new facility in October 2022.

Environmental, Social & Governance

In April 2021, we announced that we will further our longstanding sustainability commitment by aiming to become a carbon-neutral company by 2050 or sooner and reducing our carbon footprint by 30% by 2026, from our baseline of fiscal 2016. Carbon goals are inclusive of Scope 1 and 2, as well as Scope 3 emissions in categories 1, 3, and 9, of the Greenhouse Gas Protocol. In addition, we have targets to reduce waste to landfills by 20%, energy intensity by 10%, and water intensity by 10%, each by 2026, from our baseline of fiscal 2016.

We plan to increase the use of recycled content in our products, as appropriate, and engage with customers, suppliers, and industry peers across the value chain as we aim to drive innovation that improves aluminum's overall sustainability. In addition, we intend to evaluate each future expansion project's carbon impact and plan to include an appropriate carbon cost impact as part of our financial evaluation of future strategic growth investments. We intend to evaluate each future expansion project's carbon impact so that we may appropriately mitigate any negative carbon impacts to meet our goals.

In support of our commitments, we are voluntarily pursuing the certification of all of our plant operations to the Aluminum Stewardship Initiatives' ("ASI") certification program. ASI works together with producers, users, and stakeholders in the aluminum value chain to collaboratively foster responsible production, sourcing, and stewardship of aluminum. Currently, we have 19 plants with the Performance Standard Certification and 14 with the Chain of Custody Certification. In addition, to support our initiatives, in April 2021 we issued €500 million in aggregate principal amount of senior notes. We intend to allocate an amount equal to the net proceeds of these notes to eligible "green" projects, such as investments in recycling, renewable energy, and pollution prevention and control. Through March 31, 2022, we have allocated $140 million of the net proceeds toward pollution prevention and control.

Our path to a more sustainable and circular future goes beyond our environmental commitments. We have set targets to build a more diverse and inclusive workforce that reflects our local communities. Globally, we are dedicated to increasing the representation of women in senior leadership, as well as in technical roles at Novelis in order to create and foster the next generation of female leaders, scientists, and engineers. To achieve these goals, the Company has established a global Diversity & Inclusion board, as well as supporting councils in each of our four regions. We will also continue assisting our Employee Resource Groups to help create a more inclusive environment where we seek to provide our employees with a sense of belonging and where different backgrounds and perspectives are embraced and valued.

We are also committed to supporting the communities in which our employees live and work. With firmly established community engagement programs, the Company is committed to advancing its corporate social responsibility efforts by further investing in the Novelis Neighbor program, which gives back to communities through financial contributions and employee volunteer service. The program will continue emphasizing Science, Technology, Engineering, and Math ("STEM") education, raising recycling awareness, and fostering better overall community health and well-being.

COVID-19 Response

With our primary focus being the health and well-being of our employees, we continue to monitor the changing landscape with respect to COVID-19 and take actions to manage our business and support our customers. We have bolstered our own Environmental, Health, and Safety protocols and aligned them with guidance from global health authorities and government agencies across our operations to help ensure the safety of our employees, customers, suppliers, communities, and other stakeholders.

Liquidity Position

We believe we have adequate liquidity to manage the business with dynamic metal prices. Our cash and cash equivalents and availability under committed credit facilities aggregated to $2.1 billion of liquidity as of December 31, 2022.

We maintain a disciplined approach to capital spending, prioritizing maintenance capital for our operations, as well as organic strategic capacity expansion projects. We are rephasing the pace of spending of some strategic capital, and expect capital expenditures for fiscal 2023 to be approximately $900 million. This current guidance includes approximately $300 million for expected maintenance spend.

Market Trends

Beverage Packaging. According to CRU, the global mining, metals, and fertilizer business intelligence company, global demand for can stock, which represents the largest percentage of our total rolled product shipments, is forecasted to increase at a compound annual growth rate of approximately 4% from calendar year 2022 to 2031 mainly driven by sustainability trends, growth in beverage markets that are increasingly released in aluminum packaging, and substitution against plastic, glass, and steel. However, we are seeing reduced can sheet demand in the near term attributed to canmakers reducing their excess inventory as they adjust to a more moderated level of can demand as compared to unprecedented high demand during the COVID-19 pandemic due to high at-home consumption.

Automotive. We believe aluminum utilization is positioned for long-term growth through increased adoption of electric vehicles, which require higher amounts of aluminum. We estimate global automotive aluminum sheet demand is expected to grow at an 11% compound annual growth rate between calendar year 2022 and 2028. While chip supply has been improving, global supply chain disruption, for example from semiconductor shortages or outbreaks of new COVID-19 variants, and increasing economic uncertainty may continue to impact automotive build rates and near-term demand for automotive aluminum sheet.

Aerospace. Passenger air travel is increasing, as loosening COVID-19 restrictions have facilitated a faster than anticipated recovery for the industry. We expect demand for aerospace aluminum to continue to recover toward pre-COVID-19 levels by the end of fiscal 2023.

Specialties. Specialties includes diverse markets, including building and construction, commercial transportation, foil and packaging, and commercial and consumer products. These industries continue to increase aluminum material adoption due to its many desirable characteristics. We believe these trends will keep demand high in the long-term, despite the near-term economic headwinds.

BUSINESS MODEL AND KEY CONCEPTS

Conversion Business Model

A significant amount of our business is conducted under a conversion model, which allows us to pass through increases or decreases in the price of aluminum to our customers. Nearly all of our flat-rolled products have a price structure with three components: (1) a base aluminum price quoted off the LME; (2) an LMP; and (3) a "conversion premium" to produce the rolled product, which reflects, among other factors, the competitive market conditions for that product. Base aluminum prices are typically driven by macroeconomic factors and global supply and demand for aluminum. LMPs tend to vary based on the supply and demand for metal in a particular region and associated transportation costs.

In North America, Europe, and South America, we pass through LMPs to our customers, which are recorded through net sales. In Asia, we purchase our metal inputs based on the LME and incur an LMP. Many of our competitors in this region price their metal off the Shanghai Futures Exchange, which does not include an LMP. However, in a majority of new contracts over the last several quarters, we are able to fully pass through the LMPs.

LME Base Aluminum Prices and Local Market Premiums

The average (based on the simple average of the monthly averages) and closing prices for aluminum set on the LME are as follows.

	Three Months Ended December 31,			Nine Months Ended December 31,		
	2022	2021	Percent Change	2022	2021	Percent Change
Aluminum (per metric tonne, and presented in U.S. dollars):						
Closing cash price as of beginning of period	$ 2,180	$ 2,851	(24)%	$ 3,503	$ 2,213	58 %
Average cash price during the period	2,324	2,764	(16)	2,520	2,603	(3)
Closing cash price as of end of period	2,361	2,806	(16)	2,361	2,806	(16)

The weighted average LMPs are as follows.

	Three Months Ended December 31,			Nine Months Ended December 31,		
	2022	2021	Percent Change	2022	2021	Percent Change
Weighted average LMP (per metric tonne and presented in U.S. dollars)	$ 329	$ 456	(28)%	$ 404	$ 455	(11)%

Metal Price Lag and Related Hedging Activities

Increases or decreases in the price of aluminum based on the average LME base aluminum prices and LMPs directly impact net sales, cost of goods sold (exclusive of depreciation and amortization), and working capital. The timing of these impacts varies based on contractual arrangements with customers and metal suppliers in each region. These timing impacts are referred to as metal price lag. Metal price lag exists due to: (i) the period of time between the pricing of our purchases of metal, holding and processing the metal, and the pricing of the sale of finished inventory to our customers and (ii) certain customer contracts containing fixed forward price commitments, which result in exposure to changes in metal prices for the period of time between when our sales price fixes and the sale actually occurs.

We use LME aluminum forward contracts to preserve our conversion margins and manage the timing differences associated with the LME base metal component of net sales and cost of goods sold (exclusive of depreciation and amortization). These derivatives directly hedge the economic risk of future LME base metal price fluctuations to better match the purchase price of metal with the sales price of metal. We have exposure to multiple regional LMPs, however the derivative markets for those LMPs are generally not robust or efficient enough for us to hedge all of our exposure to price movements beyond a small volume. From time to time, we take advantage of short-term market conditions to hedge a small percentage of our exposure. As a consequence, volatility in LMPs can have a significant impact on our results of operations and cash flows.

We elect to apply hedge accounting to better match the recognition of gains or losses on certain derivative instruments with the recognition of the underlying exposure being hedged in the statement of operations. For undesignated metal derivatives, there are timing differences between the recognition of unrealized gains or losses on the derivatives and the recognition of the underlying exposure in the statement of operations. The recognition of unrealized gains and losses on undesignated metal derivative positions typically precedes inventory cost recognition, customer delivery, and revenue recognition. The timing difference between the recognition of unrealized gains and losses on undesignated metal derivatives and cost or revenue recognition impacts income from continuing operations before income tax provision and net income. Gains and losses on metal derivative contracts are not recognized in Adjusted EBITDA until realized.

Foreign Currency and Related Hedging Activities

We operate a global business and conduct business in various currencies around the world. We have exposure to foreign currency risk as fluctuations in foreign exchange rates impact our operating results when we translate the operating results from various functional currencies into our U.S. dollar reporting currency at current average rates. We also record foreign exchange remeasurement gains and losses when business transactions are denominated in currencies other than the functional currency of that operation. Global economic uncertainty is contributing to higher levels of volatility among the currency pairs in which we conduct business. The following table presents the exchange rates as of the end of each period and the average of the month-end exchange rates.

	Exchange Rate as of		Average Exchange Rate Three Months Ended December 31,		Average Exchange Rate Nine Months Ended December 31,	
	December 31, 2022	March 31, 2022	2022	2021	2022	2021
Euro per U.S. dollar	0.937	0.889	0.972	0.877	0.972	0.852
Brazilian real per U.S. dollar	5.218	4.738	5.256	5.614	5.159	5.354
South Korean won per U.S. dollar	1,268	1,211	1,340	1,184	1,324	1,156
Canadian dollar per U.S. dollar	1.356	1.249	1.359	1.262	1.319	1.249
Swiss franc per euro	0.987	1.023	0.987	1.045	0.992	1.074

Exchange rate movements have an impact on our operating results. In Europe, where we predominantly have local currency selling prices and operating costs, we benefit as the euro strengthens but are adversely affected as the euro weakens. For our Swiss operations, where operating costs are incurred primarily in the Swiss franc and a large portion of revenues are denominated in the euro, we benefit as the Swiss franc weakens but are adversely affected as the franc strengthens. In South Korea, where we have local currency operating costs and U.S. dollar denominated selling prices for exports, we benefit as the South Korean won weakens but are adversely affected as the won strengthens. In Brazil, where we have predominately U.S. dollar selling prices and local currency manufacturing costs, we benefit as the Brazilian real weakens but are adversely affected as the real strengthens. We use foreign exchange forward contracts to manage our exposure arising from recorded assets and liabilities, firm commitments, and forecasted cash flows denominated in currencies other than the functional currency of certain operations, which include capital expenditures and net investment in foreign subsidiaries.

See *Segment Review* below for the impact of foreign currency on each of our segments.

RESULTS OF CONSOLIDATED OPERATIONS

For the three months ended December 31, 2022, we reported net income attributable to our common shareholder of $12 million, a decrease of 95% compared to $262 million in the comparable prior year period, and total Adjusted EBITDA of $341 million, a decrease of 33% compared to $506 million in the comparable prior year period. The decrease in operational performance compared to the comparable prior year period is primarily driven by significantly higher inflationary operating and energy costs as a result of geopolitical instability and supply chain disruptions, as well as unfavorable foreign exchange rates, less favorable metal benefit from recycling, and higher factoring costs in SG&A due to rising interest rates, partially offset by favorable product mix, and higher pricing including some cost pass-through to customers.

For the nine months ended December 31, 2022, we reported net income attributable to our common shareholder of $502 million, a decrease of 32% compared to $739 million in the comparable prior year period, and total Adjusted EBITDA of $1.4 billion, a decrease of 13% compared to $1.6 billion in the comparable prior year period. The decrease in operational performance was primarily driven by significantly higher inflationary operating, energy and metal costs as a result of geopolitical instability, supply chain disruptions, rising interest rates, higher SG&A, unfavorable foreign exchange rates, less favorable metal benefit from recycling, and a gain, net of litigation expenses, from favorable outcomes in a Brazilian tax litigation in the comparable prior year period. These unfavorable factors were mostly offset by higher pricing, including some higher cost pass-through to customers, and favorable product mix.

Key Sales and Shipment Trends

in millions, except percentages and shipments, which are in kt	Three Months Ended June 30, 2021	Three Months Ended September 30, 2021	Three Months Ended December 31, 2021	Three Months Ended March 31, 2022	Fiscal Year Ended March 31, 2022	Three Months Ended June 30, 2022	Three Months Ended September 30, 2022	Three Months Ended December 31, 2022
Net sales	$ 3,855	$ 4,119	$ 4,326	$ 4,849	$ 17,149	$ 5,089	$ 4,799	4,201
Percentage (decrease) increase in net sales versus comparable prior year period	59 %	38 %	33 %	34 %	40 %	32 %	17 %	(3)%
Rolled product shipments:								
North America	358	375	358	376	1,467	386	386	380
Europe	279	260	254	274	1,067	272	268	242
Asia	192	197	171	203	763	185	208	141
South America	157	147	157	156	617	148	162	162
Eliminations	(13)	(11)	(10)	(22)	(56)	(29)	(40)	(17)
Total	973	968	930	987	3,858	962	984	908
The following summarizes the percentage (decrease) increase in rolled product shipments versus the comparable prior year period:								
North America	32 %	2 %	3 %	4 %	9 %	8 %	3 %	6 %
Europe	32	8	—	1	9	(3)	3 %	(5)%
Asia	4	11	(7)	2	2	(4)	6 %	(18)%
South America	39	(1)	(1)	(3)	7	(6)	10 %	3 %
Total	26 %	5 %	— %	— %	7 %	(1)%	2 %	(2)%

Three Months Ended December 31, 2022, Compared to the Three Months Ended December 31, 2021

Net sales was $4.2 billion for the three months ended December 31, 2022, a decrease of 3% from $4.3 billion in the comparable prior year period, primarily driven by lower average aluminum prices, and a 2% decrease in shipments, partially offset by higher pricing across end markets and a favorable product mix from higher automotive shipments.

Income from continuing operations before income tax provision was $6 million for the three months ended December 31, 2022, compared to $348 million in the comparable prior year period. In addition to the factors noted above, the following items affected income from continuing operations before income tax provision.

Cost of Goods Sold (Exclusive of Depreciation and Amortization)

Cost of goods sold (exclusive of depreciation and amortization) was $3.8 billion for the three months ended December 31, 2022, an increase of 5% from $3.6 billion in the comparable prior year period, primarily due to cost inflation and less favorable metal benefits from recycling, partially offset by lower average aluminum prices. Total metal input costs included in cost of goods sold (exclusive of depreciation and amortization) increased $54 million over the comparable prior year period.

Selling, General and Administrative Expenses

SG&A was $164 million for the three months ended December 31, 2022, compared to $156 million for the three months ended December 31, 2021. The increase is mainly due to higher factoring expense resulting from higher interest rates.

Depreciation and Amortization

Depreciation and amortization was $133 million and $137 million in the three months ended December 31, 2022, and 2021, respectively.

Interest Expense and Amortization of Debt Issuance Costs

Interest expense and amortization of debt issuance costs was $75 million and $54 million for the three months ended December 31, 2022, and 2021, respectively. The increase is primarily due to higher average interest rates on variable interest rate borrowings.

Restructuring and Impairment Expenses (Reversals), Net

Restructuring and impairment expenses, net was a net expense of $5 million and $3 million for the three months ended December 31, 2022 and 2021, respectively.

Other Expenses (Income), Net

Other expenses (income), net was an expense of $7 million and income of $2 million for the three months ended December 31, 2022, and 2021, respectively. The change primarily relates to higher losses on the change in fair value of derivative instruments, net in the current period.

Taxes

We recognized $6 million of income tax benefit for the three months ended December 31, 2022. Our effective tax rate was primarily driven by the full-year forecasted effective tax rate that takes into account income taxed at rates that differ from the 25% Canadian rate, including withholding taxes and changes to the Brazilian real foreign exchange rate, offset by the availability of tax credits, income not subject to tax, and tax benefits related to Korea tax reform. We recognized $89 million of income tax provision in the comparable prior year period.

Segment Review

Due in part to the regional nature of supply and demand of aluminum rolled products and in order to best serve our customers, we manage our activities on the basis of geographical regions and are organized under four operating segments: North America, Europe, Asia, and South America.

The tables below illustrate selected segment financial information (in millions, except shipments, which are in kt). For additional financial information related to our operating segments including the reconciliation of net income attributable to our common shareholder to Adjusted EBITDA, see Note 16 – Segment, Geographical Area, Major Customer and Major Supplier Information. In order to reconcile the financial information for the segments shown in the tables below to the relevant U.S. GAAP-based measures, "Eliminations and Other" must adjust for proportional consolidation of each line item for our Logan affiliate because we consolidate 100% of the Logan joint venture for U.S. GAAP purposes. However, we manage our Logan affiliate on a proportionately consolidated basis and eliminate intersegment shipments (in kt).

Selected Operating Results Three Months Ended December 31, 2022	**North America**	**Europe**	**Asia**	**South America**	**Eliminations and Other**	**Total**
Net sales	$ 1,762	$ 1,127	$ 582	$ 677	$ 53	$ 4,201
Shipments (in kt):						
Rolled products – third party	380	232	139	157	—	908
Rolled products – intersegment	—	10	2	5	(17)	—
Total rolled products	380	242	141	162	(17)	908
Non-rolled products	4	27	11	31	—	73
Total shipments	384	269	152	193	(17)	981

Selected Operating Results Three Months Ended December 31, 2021	**North America**	**Europe**	**Asia**	**South America**	**Eliminations and Other**	**Total**
Net sales	$ 1,716	$ 1,156	$ 710	$ 727	$ 17	$ 4,326
Shipments (in kt):						
Rolled products – third party	358	248	167	157	—	930
Rolled products – intersegment	—	6	4	—	(10)	—
Total rolled products	358	254	171	157	(10)	930
Non-rolled products	2	23	4	28	(11)	46
Total shipments	360	277	175	185	(21)	976

The following table reconciles changes in Adjusted EBITDA for the three months ended December 31, 2021, to the three months ended December 31, 2022.

in millions	**North America**	**Europe**	**Asia**	**South America**	**Eliminations and Other[(1)]**	**Total**
Adjusted EBITDA - Three Months Ended December 31, 2021	$ 181	$ 71	$ 76	$ 178	$ —	$ 506
Volume	23	(14)	(28)	3	(9)	(25)
Conversion premium and product mix	48	46	28	17	(2)	137
Conversion costs	(109)	(69)	3	(76)	13	(238)
Foreign exchange	(1)	(5)	(11)	(1)	—	(18)
Selling, general & administrative and research & development costs[(2)]	(9)	(4)	(4)	4	1	(12)
Other changes	(9)	13	(4)	(1)	(8)	(9)
Adjusted EBITDA - Three Months Ended December 31, 2022	$ 124	$ 38	$ 60	$ 124	$ (5)	$ 341

(1) The recognition of Adjusted EBITDA by a region on an intersegment shipment could occur in a period prior to the recognition of Adjusted EBITDA on a consolidated basis, depending on the timing of when the inventory is sold to the third-party customer. The "Eliminations and Other" column adjusts regional Adjusted EBITDA for intersegment shipments that occur in a period prior to recognition of Adjusted EBITDA on a consolidated basis. The "Eliminations and Other" column also reflects adjustments for changes in regional volume, conversion premium and product mix, and conversion costs related to intersegment shipments for consolidation. "Eliminations and Other" must adjust for proportional consolidation of each line item for our Logan affiliate because we consolidate 100% of the Logan joint venture for U.S. GAAP, but we manage our Logan affiliate on a proportionately consolidated basis.

(2) Selling, general & administrative and research & development costs include costs incurred directly by each segment and all corporate related costs.

North America

Net sales increased $46 million, or 3%, primarily driven by higher automotive shipments as the semiconductor shortages impacting the automotive industry for more than the past year begin to ease, and slightly higher can shipments despite customers reducing their excess inventory, partially offset by lower specialty shipments, mainly in building and construction and light gauge products due to softer market demand, and lower average aluminum prices. Adjusted EBITDA was $124 million, a decrease of 31%, primarily driven by higher operating costs due to inflation, geopolitical instability, global supply chain disruptions, and less favorable metal benefit. In addition, SG&A and other changes increased versus the comparable prior year period mainly due to an increase in factoring expense resulting from higher interest rates, as well as higher employment cost. These unfavorable factors were partially offset by higher volume, favorable product mix due to higher automotive shipments and higher product prices.

Europe

Net sales decreased $29 million, or 3%, primarily driven by lower can shipments impacted by customers reducing their excess inventory, lower specialty shipments, mainly thick gauge sheet, due to softer market demand, and lower average aluminum prices. Adjusted EBITDA was $38 million, a decrease of 46%, primarily driven by higher energy and other operating costs due to inflation, geopolitical instability, and global supply chain disruptions, as well as less favorable metal benefit, lower volume, and unfavorable foreign exchange translation. These factors were partially offset by higher product prices, favorable product mix due to higher automotive shipments.

Asia

Net sales decreased $128 million, or 18%, primarily driven by lower can shipments impacted by suddenly lower export demand due to customers reducing excess inventory, as well as lower planned specialty shipments due to portfolio optimization, and lower average aluminum prices. Automotive shipments were flat to prior year, impacted by COVID-related disruptions during the current year period. Adjusted EBITDA was $60 million, a decrease of 21%, primarily driven by lower volume, less favorable metal benefit, unfavorable foreign exchange, and higher energy and other operating costs due to inflation, geopolitical instability, and global supply chain disruptions, partially offset by higher product pricing.

South America

Net sales decreased $50 million, or 7%, primarily driven by lower average aluminum prices, partially offset by higher can shipments. Adjusted EBITDA was $124 million, a decrease of 30%, primarily driven by less favorable metal benefit, higher operating costs due to inflation, geopolitical instability, and global supply chain disruptions and unfavorable foreign exchange, partially offset by higher products prices and higher volume.

Nine Months Ended December 31, 2022, Compared to the Nine Months Ended December 31, 2021

Net sales were $14.1 billion for the nine months ended December 31, 2022, an increase of 15% from $12.3 billion in the comparable prior year period, primarily driven by higher average aluminum prices, partially offset by a 1% decline in total shipments compared to the prior year period.

Income from continuing operations before income tax provision was $649 million for the nine months ended December 31, 2022, compared to $1.1 billion in the comparable prior year period. In addition to the factors noted above, the following items affected income from continuing operations before income tax provision.

Cost of Goods Sold (Exclusive of Depreciation and Amortization)

Cost of goods sold (exclusive of depreciation and amortization) was $12.2 billion for the nine months ended December 31, 2022, an increase of 20% from $10.2 billion in the comparable prior year period, driven primarily by higher average aluminum prices, cost inflation and less favorable metal benefits from recycling. Total metal input costs included in cost of goods sold (exclusive of depreciation and amortization) increased $1.7 billion over the comparable prior year period.

Selling, General and Administrative Expenses

SG&A was $509 million for the nine months ended December 31, 2022, compared to $457 million for the nine months ended December 31, 2021. The increase is mainly due to higher factoring expense resulting from higher interest rates, as well as higher travel expense due to loosened travel restrictions.

Depreciation and Amortization

Depreciation and amortization was $405 million for the nine months ended December 31, 2022, and December 31, 2021.

Interest Expense and Amortization of Debt Issuance Costs

Interest expense and amortization of debt issuance costs was $198 million and $173 million for the nine months ended December 31, 2022, and 2021, respectively. This increase is primarily due to higher average interest rates on variable interest rate borrowings.

Loss on Extinguishment of Debt, Net

There were no losses on extinguishments of debt for the nine months ended December 31, 2022. We recorded $63 million in loss on extinguishment of debt, net for the nine months ended December 31, 2021. This primarily related to the write-off of unamortized debt issuance costs and a $51 million cash payment of a redemption premium for the redemption of our 5.875% Senior Notes, due September 2026.

Restructuring and Impairment Expenses, Net

Restructuring and impairment expenses, net was a net expense of $7 million and a net reversal of expense of $1 million for the nine months ended December 31, 2022, and 2021, respectively.

Other (Income) Expenses, Net

Other expenses (income), net was an expense of $67 million and income of $86 million for the nine months ended December 31, 2022, and 2021, respectively. This change primarily relates to a gain in the comparable prior year period of $85 million on a Brazilian tax litigation related to favorable decisions that did not recur in the current period, as well as higher losses on the change in fair value of derivative instruments, net, in the current period.

Taxes

We recognized $146 million of income tax provision for the nine months ended December 31, 2022. Our effective tax rate was primarily driven by the full year forecasted effective tax rate that takes into account income taxed at rates that differ from the 25% Canadian rate, including withholding taxes, the change in valuation allowance, the availability of tax credits, and income not subject to tax, offset by the US base erosion and anti-abuse tax. We recognized $276 million of income tax provision in the prior comparable period.

Segment Review

Selected Operating Results Nine Months Ended December 31, 2022	North America	Europe	Asia	South America	Eliminations and Other	Total
Net sales	$ 5,816	$ 3,836	$ 2,289	$ 2,254	$ (106)	$ 14,089
Shipments						
Rolled products – third party	1,152	754	493	455	—	2,854
Rolled products – intersegment	—	28	41	17	(86)	—
Total rolled products	1,152	782	534	472	(86)	2,854
Non-rolled products	10	86	24	103	(21)	202
Total shipments	1,162	868	558	575	(107)	3,056

Selected Operating Results Nine Months Ended December 31, 2021	North America	Europe	Asia	South America	Eliminations and Other	Total
Net sales	$ 4,843	$ 3,365	$ 2,110	$ 1,898	$ 84	$ 12,300
Shipments						
Rolled products – third party	1,091	767	553	460	—	2,871
Rolled products – intersegment	—	26	7	1	(34)	—
Total rolled products	1,091	793	560	461	(34)	2,871
Non-rolled products	8	81	10	70	(20)	149
Total shipments	1,099	874	570	531	(54)	3,020

The following table reconciles changes in Adjusted EBITDA for the nine months ended December 31, 2021, to the nine months ended December 31, 2022.

in millions	North America	Europe	Asia	South America	Eliminations and Other[1]	Total
Adjusted EBITDA - Nine Months Ended December 31, 2021	$ 580	$ 251	$ 256	$ 525	$ 2	$ 1,614
Volume	64	(14)	(24)	10	(54)	(18)
Conversion premium and product mix[2]	184	160	112	49	(31)	474
Conversion costs	(213)	(165)	(32)	(123)	87	(446)
Foreign exchange	(1)	(32)	(18)	4	—	(47)
Selling, general & administrative and research & development costs[3]	(30)	(13)	(17)	(11)	3	(68)
Other changes	(42)	8	(10)	(47)	(10)	(101)
Adjusted EBITDA - Nine Months Ended December 31, 2022	$ 542	$ 195	$ 267	$ 407	$ (3)	$ 1,408

(1) The recognition of Adjusted EBITDA by a region on an intersegment shipment could occur in a period prior to the recognition of Adjusted EBITDA on a consolidated basis, depending on the timing of when the inventory is sold to the third-party customer. The "Eliminations and Other" column adjusts regional Adjusted EBITDA for intersegment shipments that occur in a period prior to recognition of Adjusted EBITDA on a consolidated basis. The "Eliminations and Other" column also reflects adjustments for changes in regional volume, conversion premium and product mix, and conversion costs related to intersegment shipments for consolidation. "Eliminations and Other" must adjust for proportional consolidation of each line item for our Logan affiliate because we consolidate 100% of the Logan joint venture for U.S. GAAP, but we manage our Logan affiliate on a proportionately consolidated basis.
(2) Conversion premium and product mix in Europe includes a $30 million customer contractual obligation benefit recognized during the nine months ended December 31, 2022.
(3) Selling, general & administrative and research & development costs include costs incurred directly by each segment and all corporate related costs.

North America

Net sales increased $973 million, or 20%, driven by higher average aluminum prices, as well as higher automotive shipments as semiconductor shortages that impacted the automotive industry in the prior year ease, higher can shipments, and slightly higher specialty shipments. Adjusted EBITDA was $542 million, a decrease of 7%, primarily driven by higher operating costs due to inflation, geopolitical instability, global supply chain disruptions, and less favorable metal benefit. In addition, SG&A and other changes increased versus the comparable prior year period mainly due to an increase in factoring expense resulting from higher interest rates, higher employment cost, partially offset by higher volume, favorable product mix, and higher product prices.

Europe

Net sales increased $471 million, or 14%, driven by higher average aluminum prices and higher automotive and aerospace shipments as semiconductor challenges ease and air travel demand recovers, partially offset by lower specialty shipments due to softer demand in a weaker economic environment and lower can shipments due to customers reducing their excess inventory. Adjusted EBITDA was $195 million, a decrease of 22%, primarily driven by unfavorable foreign exchange rates, higher energy and other operating costs due to inflation, geopolitical instability, and global supply chain disruptions, lower metal benefits and higher factoring expense resulting from higher interest rates. These factors are partially offset by favorable product mix on improving automotive and aerospace shipments, and higher product prices, as well as a $30 million customer contractual obligation benefit and a $10 million Duffel settlement benefit in the current year.

Asia

Net sales increased $179 million, or 8%, driven primarily by higher average aluminum prices, higher aerospace shipments as some recovery in air travel improves demand for aerospace plate and sheet, and higher can shipments on strong demand earlier in the current fiscal year, partially offset by lower specialty shipments due to planned portfolio optimization and lower automotive shipments impacted by COVID-19 pandemic-related lockdowns in China in the current fiscal year. Adjusted EBITDA was $267 million, an increase of 4%, primarily due to higher volume, higher product prices and favorable metal benefit, partially offset by higher energy and other operating costs due to inflation, geopolitical instability, and global supply chain disruptions.

South America

Net sales increased $356 million, or 19%, driven by higher average aluminum prices and higher can shipments across the Americas due to strong demand in the first half of the current fiscal year. Adjusted EBITDA was $407 million, a decrease of 22%, primarily due to $49 million in prior year gains from the principal amount net of litigation expenses from favorable outcomes of Brazil tax litigation that did not recur in the current period, as well as less favorable metal benefit, higher energy and other operating costs due to inflation, geopolitical instability, and global supply chain disruptions as well as higher SG&A due to an increase in factoring expense resulting from higher interest rates. These factors were partially offset by higher volume, higher product prices, and favorable foreign exchange rates.

LIQUIDITY AND CAPITAL RESOURCES

We believe we maintain adequate liquidity levels through a combination of cash and availability under committed credit facilities. Our cash and cash equivalents and availability under committed credit facilities aggregated to $2.1 billion of liquidity as of December 31, 2022. Our primary liquidity sources are cash flows from operations, working capital management, cash, and liquidity under our debt agreements. Our recent business investments are being funded through cash flows generated by our operations and a combination of local financing and our senior secured credit facilities. We expect to be able to fund both our short- and long-term liquidity needs, such as our continued expansions, servicing our debt obligations, and providing sufficient liquidity to operate our business, through one or more of the following: the generation of operating cash flows, working capital management, our existing debt facilities (including refinancing), and new debt issuances, as necessary.

Available Liquidity

Our available liquidity as of December 31, 2022, and March 31, 2022, is as follows.

in millions	December 31, 2022	March 31, 2022
Cash and cash equivalents	$ 1,126	$ 1,070
Availability under committed credit facilities	1,018	1,499
Total available liquidity	$ 2,144	$ 2,569

The decrease in total available liquidity primarily relates to the decrease in availability under our ABL Revolver facility due to additional borrowings this fiscal year from the same facility, partially offset by an increase in the cash and cash equivalents balance. In August 2022, we amended the ABL Revolver facility to, among other things, increase availability by $500 million to $2 billion. See Note 6 – Debt for more details about our availability under committed credit facilities.

Cash and cash equivalents includes cash held in foreign countries in which we operate. As of December 31, 2022, we held $3 million of cash and cash equivalents in Canada, in which we are incorporated, with the rest held in other countries in which we operate. As of December 31, 2022, we held $655 million of cash in jurisdictions for which we have asserted that earnings are permanently reinvested, and we plan to continue to fund operations and local expansions with cash held in those jurisdictions. Cash held outside of Canada is free from significant restrictions that would prevent the cash from being accessed to meet the Company's liquidity needs, including, if necessary, to fund operations and service debt obligations in Canada. Upon the repatriation of any earnings to Canada, in the form of dividends or otherwise, we could be subject to Canadian income taxes (subject to adjustment for foreign taxes paid and the utilization of the large cumulative net operating losses we have in Canada) and withholding taxes payable to the various foreign jurisdictions. As of December 31, 2022, we do not believe adverse tax consequences exist that restrict our use of cash and cash equivalents in a material manner.

Obligations

Our material cash requirements include future contractual and other obligations arising in the normal course of business. These obligations primarily include debt and related interest payments, finance and operating lease obligations, postretirement benefit plan obligations, and purchase obligations. See Note 6 – Debt to our accompanying condensed consolidated financial statements and "Liquidity and Capital Resources" within Part II. Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations in our 2022 Form 10-K for more details.

There are no additional material off-balance sheet arrangements.

Adjusted Free Cash Flow

Refer to Non-GAAP Financial Measures for our definition of Adjusted Free Cash Flow.

The following table displays the Adjusted Free Cash Flow, the change between periods, as well as the ending balances of cash and cash equivalents.

in millions	Nine Months Ended December 31, 2022	Nine Months Ended December 31, 2021	Change
Net cash provided by operating activities – continuing operations	$ 321	$ 503	$ (182)
Net cash used in investing activities – continuing operations	(478)	(277)	(201)
Plus: Cash used in the acquisition of business and other investments, net of cash acquired	4	—	4
Less: Proceeds from sales of assets and business, net of transaction fees, cash income taxes and hedging	(5)	(9)	4
Adjusted Free Cash Flow from continuing operations	(158)	217	(375)
Net cash (used in) provided by operating activities – discontinued operations	(12)	12	(24)
Adjusted Free Cash Flow	$ (170)	$ 229	$ (399)
Ending cash and cash equivalents	$ 1,126	$ 808	$ 318

Cash Flow Summary

in millions	Nine Months Ended December 31, 2022	Nine Months Ended December 31, 2021	Change
Net cash provided by operating activities	$ 309	$ 515	$ (206)
Net cash used in investing activities	(478)	(277)	(201)
Net cash provided by (used in) financing activities	263	(450)	713

Operating Activities

The decrease in net cash provided by operating activities primarily relates to unfavorable metal price lag and lower Adjusted EBITDA, partially offset by changes in working capital.

Investing Activities

Net cash used in investing activities was primarily attributable to capital expenditures of $462 million and outflows from investment in and advances to non-consolidated affiliates, net during the nine months ended December 31, 2022.

Financing Activities

There were no proceeds from the issuance of long-term and short-term borrowings during the nine months ended December 31, 2022. The following represents proceeds from the issuance of long-term and short-term borrowings during the nine months ended December 31, 2021.

in millions	Nine Months Ended December 31, 2021
3.25% Senior Notes, due November 2026(1)	$ 750
3.875% Senior Notes, due August 2031(1)	750
Floating rate Term Loans, due March 2028	20
1.8% Brazil Loan due June 2023	30
1.8% Brazil Loan due December 2023	20
Short-term borrowings in Brazil	100
Proceeds from issuance of long-term and short-term borrowings	$ 1,670

(1) The proceeds from the issuance of the 3.25% Senior Notes, due November 2026 and the 3.875% Senior Notes, due August 2031 were used to redeem the $1.5 billion principal amount outstanding on the 5.875% Senior Notes, due September 2026.

The following represents principal payments of long-term and short-term borrowings during the nine months ended December 31, 2022, and 2021.

in millions	Nine Months Ended December 31, 2022
Short-term loans due November 2022	$ (314)
Brazil Loans short term loan due November 2022	(50)
Floating rate Term Loans, due January 2025	(6)
Floating rate Term Loans, due March 2028	(4)
China Bank Loans, due August 2027	(3)
Finance leases and other repayments	(3)
Principal payments of long-term and short-term borrowings	$ (380)

in millions	Nine Months Ended December 31, 2021
5.875% Senior Notes, due September 2026[1]	$ (1,551)
Floating rate Term Loans, due June 2022	(334)
Zhenjiang Term Loans, due May 2024	(129)
Short-term borrowings in Brazil	(3)
Floating rate Term Loans, due January 2025	(6)
Floating rate Term Loans, due March 2028	(4)
Finance leases and other repayments	(7)
Principal payments of long-term and short-term borrowings	$ (2,034)

(1) This represents the $1.5 billion principal on the 5.875% Senior Notes, due September 2026 that was redeemed during the period through the issuance of the 3.25% Senior Notes, due November 2026 and the 3.875% Senior Notes, due August 2031. An additional $51 million payment was made using cash on hand for the resulting redemption premium.

The following represents inflows (outflows) from revolving credit facilities and other, net during the nine months ended December 31, 2022, and 2021.

in millions	Nine Months Ended December 31, 2022
ABL Revolver	$ 725
China credit facility	16
Korea credit facility and Other revolving facilities	8
Revolving credit facilities and other, net	$ 749

in millions	Nine Months Ended December 31, 2021
China credit facility	$ 22
ABL Revolver	34
Korea credit facility	(17)
Revolving credit facilities and other, net	$ 39

In addition to the activities shown in the tables above, we paid debt issuance costs of $6 million and $25 million during the nine months ended December 31, 2022, and 2021, respectively. We also paid returns of capital to our common shareholder in the amount of $100 million during each of the nine months ended December 31, 2022, and 2021.

Non-Guarantor Information

As of December 31, 2022, the Company's subsidiaries that are not guarantors represented the following approximate percentages of (a) net sales (including intercompany sales), (b) Adjusted EBITDA, and (c) total assets of the Company, on a consolidated basis (including intercompany balances).

Item Description	Ratio
Net sales represented by non-guarantor subsidiaries (for the nine months ended December 31, 2022)	19 %
Adjusted EBITDA represented by non-guarantor subsidiaries (for the nine months ended December 31, 2022)	17 %
Assets owned by non-guarantor subsidiaries (as of December 31, 2022)	14 %

In addition, for the nine months ended December 31, 2022, and 2021, the Company's subsidiaries that are not guarantors had net sales (including intercompany sales) of $3.1 billion and $2.8 billion, respectively, and as of December 31, 2022, those subsidiaries had assets of $3.0 billion and debt and other liabilities of $1.6 billion (including intercompany balances).

CAPITAL ALLOCATION FRAMEWORK

In May 2021, Novelis announced a capital allocation framework that laid out the general guidelines for use of post-maintenance capital expenditure Adjusted Free Cash Flow for the next five years. The priority at that time was to reduce long-term debt by $2.6 billion from its recent peak in the first quarter of fiscal 2021 after the Aleris acquisition and to target a net leverage ratio of approximately 2.5x. Having achieved both targets by the end of fiscal 2022, the priority has now shifted to organic growth capital expenditures, estimated to be more than $4.5 billion over the next five years, while maintaining a medium-term net leverage ratio below 2.5x and continuing to guide approximately 8%-10% of post-maintenance capital expenditure Adjusted Free Cash Flow to be returned to our common shareholder. Payments to our common shareholder are at the discretion of our board of directors. Any such payments depend on, among other things, our financial resources, cash flows generated by our business, our cash requirements, restrictions under the instruments governing our indebtedness, being in compliance with the appropriate indentures and covenants under the instruments that govern our indebtedness, and other relevant factors.

We paid returns of capital to our common shareholder in the amount of $100 million during each of the second quarters of fiscal 2023 and 2022. Past payment of returns of capital should not be construed as a guarantee of future returns of capital in the same amounts or at all.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

There were no significant changes to our critical accounting policies and estimates as reported in our 2022 Form 10-K. See Note 1 – Business and Summary of Significant Accounting Policies for our principal areas of uses of estimates and assumptions.

RECENTLY ISSUED ACCOUNTING STANDARDS

See Note 1 – Business and Summary of Significant Accounting Policies to our accompanying condensed consolidated financial statements for a full description of recent accounting pronouncements, if applicable, including the respective expected dates of adoption and expected effects on results of operations and financial condition.

NON-GAAP FINANCIAL MEASURES

Total Adjusted EBITDA presents the sum of the results of our four operating segments on a consolidated basis. We believe that total Adjusted EBITDA is an operating performance measure that measures operating results unaffected by differences in capital structures, capital investment cycles, and ages of related assets among otherwise comparable companies. In reviewing our corporate operating results, we also believe it is important to review the aggregate consolidated performance of all of our segments on the same basis we review the performance of each of our regions and draw comparisons between periods based on the same measure of consolidated performance.

Management believes investors' understanding of our performance is enhanced by including this non-GAAP financial measure as a reasonable basis for comparing our ongoing results of operations. Many investors are interested in understanding the performance of our business by comparing our results from ongoing operations from one period to the next and would ordinarily add back items that are not part of normal day-to-day operations of our business. By providing total Adjusted EBITDA, together with reconciliations, we believe we are enhancing investors' understanding of our business and our results of operations, as well as assisting investors in evaluating how well we are executing strategic initiatives.

However, total Adjusted EBITDA is not a measurement of financial performance under U.S. GAAP, and our total Adjusted EBITDA may not be comparable to similarly titled measures of other companies. Total Adjusted EBITDA has important limitations as an analytical tool and should not be considered in isolation or as a substitute for analysis of our results as reported under U.S. GAAP. For example, total Adjusted EBITDA:

- does not reflect the Company's cash expenditures or requirements for capital expenditures or capital commitments;
- does not reflect changes in, or cash requirements for, the Company's working capital needs; and
- does not reflect any costs related to the current or future replacement of assets being depreciated or amortized.

We also use total Adjusted EBITDA:

- as a measure of operating performance to assist us in comparing our operating performance on a consistent basis because it removes the impact of items not directly resulting from our core operations;
- for planning purposes, including the preparation of our internal annual operating budgets and financial projections;
- to evaluate the performance and effectiveness of our operational strategies; and
- as a basis to calculate incentive compensation payments for our key employees.

Adjusted EBITDA per tonne is calculated by dividing Adjusted EBITDA by aluminum rolled product shipments (in tonnes) for the corresponding period, both on a consolidated basis and at a segment level. The term "aluminum rolled products" is synonymous with the terms "flat-rolled products" and "FRP," which are commonly used by manufacturers and third-party analysts in our industry. Shipment amounts also include tolling shipments. All tonnages are stated in metric tonnes. One metric tonne is equivalent to 2,204.6 pounds. One kt is 1,000 metric tonnes.

Management believes Adjusted EBITDA per tonne is relevant to investors as it provides a measure of aluminum rolled product shipments to third parties rather than aluminum rolled product shipments as well as certain other non-rolled product shipments, primarily scrap, UBCs, ingots, billets, and primary remelt. This is useful to investors because the incremental impact of non-rolled products shipments on our Adjusted EBITDA is marginal since the price of these products is generally set to cover the costs of raw materials not utilized in manufacturing products sold to beverage packaging customers, specialties and aerospace customers in our regions, and these non-rolled products are not part of our core operating business.

Please see Note 16 – Segment, Geographical Area, Major Customer and Major Supplier Information for our definition of Adjusted EBITDA. Under ASC 280, Adjusted EBITDA is our measure of segment profitability and financial performance of our operating segments, and when used in this context, the term Adjusted EBITDA is a financial measure prepared in accordance with U.S. GAAP. Adjusted EBITDA reported for the Company on a consolidated basis is a non-U.S. GAAP financial measure. Prior to the three months ended June 30, 2022, we also utilized the term Segment Income to refer to Adjusted EBITDA. Both terms have the same definition and there is no difference in the composition or calculation of Adjusted EBITDA for the periods presented and Segment Income previously reported.

Adjusted Free Cash Flow consists of (a) net cash provided by (used in) operating activities – continuing operations, (b) plus net cash provided by (used in) investing activities – continuing operations, (c) plus net cash provided by (used in) operating activities – discontinued operations, (d) plus net cash provided by (used in) investing activities – discontinued operations, (e) plus cash used in the acquisition of assets under a finance lease, (f) plus cash used in the acquisition of business and other investments, net of cash acquired, (g) plus accrued merger consideration, (h) less proceeds from sales of assets and business, net of transaction fees, cash income taxes and hedging, and (i) less proceeds from sales of assets and business, net of transaction fees, cash income taxes and hedging – discontinued operations. Management believes Adjusted Free Cash Flow is relevant to investors as it provides a measure of the cash generated internally that is available for debt service and other value creation opportunities. However, Adjusted Free Cash Flow does not necessarily represent cash available for discretionary activities as certain debt service obligations must be funded out of Adjusted Free Cash Flow. Our method of calculating Adjusted Free Cash Flow may not be consistent with that of other companies.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND MARKET DATA

This Quarterly Report on Form 10-Q contains forward-looking statements that are based on current expectations, estimates, forecasts and projections about the industry in which we operate, and beliefs and assumptions made by our management. Such statements include, in particular, statements about our plans, strategies, and prospects under the heading "Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations," under the Notes to the Condensed Consolidated Financial Statements, and elsewhere in this Quarterly Report. Words such as "believes," "expects," "anticipates," "plans," "estimates," "projects," "forecasts," "intends," and variations of such words and similar expressions are intended to identify such forward-looking statements. Examples of forward-looking statements in this Quarterly Report on Form 10-Q include, but are not limited to, our belief that, as a result of the Aleris acquisition, we can more efficiently serve the automotive market and unlock synergies; the expected timing and results from investments in certain operating facilities, including our recently announced greenfield, fully-integrated rolling and recycling mill to be built in Bay Minette, Alabama; our projections regarding financial performance, liquidity, capital expenditures, and investments; the possible future impacts of the ongoing COVID-19 pandemic, including the emergence of new variants thereof and the actions taken against it, including expectations about the impact of any changes in demand as well as volatility and uncertainty in general economic conditions; the possible future impacts of geopolitical instability due in part to Russia's invasion of Ukraine; statements about our belief that long-term demand for aluminum automotive sheet will continue to grow; statements about our expectation that aerospace demand and shipments will continue to improve toward pre-COVID levels by the end of fiscal 2023; statements about our belief that significant aircraft industry order backlogs for key OEMS, including Airbus and Boeing, will translate into growth in the future and that our multi-year supply agreements have positioned us to benefit from future expected demand; statements about our belief that long term demand for flat-rolled aluminum remains strong; and statements about our expectation that long-term demand for building and construction and other specialty products will grow. These statements are based on beliefs and assumptions of Novelis' management, which in turn are based on currently available information. These statements are not guarantees of future performance and involve assumptions and risks and uncertainties that are difficult to predict. Therefore, actual outcomes and results may differ materially from what is expressed, implied, or forecasted in such forward-looking statements. We do not intend, and we disclaim any obligation, to update any forward-looking statements, whether as a result of new information, future events, or otherwise.

Factors that could cause actual results or outcomes to differ from the results expressed or implied by forward-looking statements include, among other things: changes in the prices and availability of aluminum (or premiums associated with such prices) or other materials and raw materials we use; inflationary pressures impacting the price of energy, labor, freight, coatings, and alloys, such as magnesium; the capacity and effectiveness of our hedging activities; inflationary pressures affecting end market demand for our aluminum products in the building and construction market; relationships with, and financial and operating conditions of, our customers, suppliers, and other stakeholders; fluctuations in the supply of, and prices for, energy in the areas in which we maintain production facilities; our ability to access financing including in connection with potential acquisitions and investments; continued risks stemming from the Aleris acquisition, including uncertainties inherent in the acquisition method of accounting; disruption to our global aluminum production and supply chain as a result of COVID-19, rising interest rates, or geopolitical factors, such as Russia's war in Ukraine; changes in the relative values of various currencies and the effectiveness of our currency hedging activities; decrease in demand for our aluminum products due to macroeconomic headwinds due in part to rising interest rates and geopolitical factors, such as Russia's war in Ukraine; risks related to sanctions, tariffs, a ban or similar actions impacting the supply of Russian aluminum and the global aluminum supply; factors affecting our operations, such as litigation, environmental remediation and clean-up costs, breakdown of equipment, and other events; economic, regulatory, and political factors within the countries in which we operate or sell our products, including changes in duties or tariffs; risks related to cybersecurity and data breaches; our potential inability to protect our intellectual property and the confidentiality of our know-how, trade secrets, technology, and other proprietary information; competition from other aluminum rolled products producers as well as from substitute materials such as steel, glass, plastic, and composite materials; downturns in consumer demand for our products or changes in consumer preferences as it relates to our products; the impact of the global semiconductor shortage on automotive production and demand for automotive aluminum sheet; changes in general economic conditions, including deterioration in the global economy; the risks of pandemics or other public health emergencies, including the continued spread and impact of, and the governmental and third-party response to, the COVID-19 pandemic; the impact of climate change or the legal, regulatory, or market response to climate change; changes in government regulations, particularly those affecting taxes, derivative instruments, and environmental, health, or safety compliance; risks that production levels and margins of our recent capital expenditures do not grow in line with our current expectations and that we may not realize returns commensurate with our investments; changes in interest rates that have the effect of increasing the amounts we pay under our credit facilities and other financing agreements; and our ability to generate cash. The above list of factors is not exhaustive.

This document also contains information concerning our markets and products generally, which is forward-looking in nature and is based on a variety of assumptions regarding the ways in which these markets and product categories will develop. These assumptions have been derived from information currently available to us and to the third-party industry analysts quoted herein.

This information includes, but is not limited to, product shipments and share of production. Actual market results may differ from those predicted. We do not know what impact any of these differences may have on our business, our results of operations, financial condition, and cash flow. For a discussion of some of the specific factors that may cause Novelis' actual results or outcomes to differ materially from those projected in any forward-looking statements, refer to the factors discussed in Part I. Item 1A. Risk Factors and Part II. Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations of our 2022 Form 10-K, as the same may be updated from time to time in our quarterly reports on Form 10-Q or in other reports which we from time to time file with the SEC.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

We are exposed to certain market risks as part of our ongoing business operations, including risks from changes in metal prices (primarily aluminum, copper, zinc, and LMPs), energy prices (electricity, natural gas, and diesel fuel), foreign currency exchange rates, and interest rates that could impact our results of operations and financial condition. We partially manage our exposure to energy prices by entering into fixed forward purchase contracts with energy providers, predominantly in Europe. We generally apply the normal purchase and normal sale scope exception to these contracts and do not record the contracts at fair value. These energy supply contracts are not derivatives but function as a risk management tool for fluctuating energy prices. We manage our exposure to other market risks through regular operating and financing activities and derivative financial instruments. We use derivative financial instruments as risk management tools only and not for speculative purposes.

Commodity Price Risks

Metal

The following table presents the estimated potential negative effect on the fair values of these derivative instruments as of December 31, 2022, given a 10% change in prices. Direction of the change in price corresponds with the direction that would cause a negative impact on the fair value of these derivative instruments.

in millions	Change in Price	Change in Fair Value
Aluminum	10 %	$ (215)
Copper	(10)	(1)
Zinc	(10)	—

Energy

The following table presents the estimated potential negative effect on the fair values of these derivative instruments as of December 31, 2022, given a 10% decline in prices for energy contracts.

in millions	Change in Price	Change in Fair Value
Natural gas	(10)%	$ (3)
Diesel fuel	(10)	(2)

Foreign Currency Exchange Risks

The following table presents the estimated potential negative effect on the fair values of these derivative instruments as of December 31, 2022, given a 10% change in rates. Direction of the change in exchange rate corresponds with the direction that would cause the change in exchange rate to negatively impact the fair value of these derivative instruments.

$ in millions	Change in Exchange Rate	Change in Fair Value
Currency measured against the U.S. dollar		
Brazilian real	(10)%	$ (27)
Euro	(10)	(42)
Korean won	(10)	(65)
Canadian dollar	(10)	(3)
British pound	(10)	(24)
Swiss franc	(10)	(45)
Chinese yuan	(10)	(1)

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures designed to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, include controls and procedures designed to ensure that information required to be disclosed in the reports we file or submit under the Exchange Act is accumulated and communicated to our management, including the Principal Executive Officer and the Principal Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. Any system of controls, however well-designed and operated, can provide only reasonable, and not absolute, assurance that the objectives of the system are met.

We have carried out an evaluation, with the participation of our Principal Executive Officer and Principal Financial Officer, of the effectiveness of the Company's disclosure controls and procedures pursuant to Rule 13a-15 of the Exchange Act. Based upon such evaluation, management has concluded that the Company's disclosure controls and procedures were effective as of December 31, 2022.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) during the most recently completed fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings.

We are a party to litigation incidental to our business from time to time. While the outcomes of these matters are uncertain, management does not expect that the ultimate costs to resolve these matters will have a material adverse effect on our consolidated financial position, results of operations, or cash flows. For additional information regarding litigation to which we are a party, see Note 15 – Commitments and Contingencies to our accompanying condensed consolidated financial statements.

Item 1A. Risk Factors.

See Part I. Item 1A. Risk Factors in our 2022 Form 10-K and Part II. Item 1A. Risk Factors in our Form 10-Q for the second quarter of fiscal 2023. There have been no material changes from the risk factors described in our 2022 Form 10-K and our Form 10-Q for the second quarter of fiscal 2023.

Item 6. Exhibits.

Exhibit No.	Description
2.1	Arrangement Agreement by and among Hindalco Industries Limited, AV Aluminum Inc. and Novelis Inc., dated as of February 10, 2007 (incorporated by reference to Exhibit 2.1 to our Current Report on Form 8-K filed on February 13, 2007) (File No. 001-32312))
3.1	Restated Certificate and Articles of Amalgamation of Novelis Inc. (incorporated by reference to Exhibit 3.1 to our Quarterly Report on Form 10-Q filed on November 10, 2010 (File No. 001-32312))
3.2	Certificate and Articles of Arrangement of Novelis Inc., dated as of September 1, 2022 (incorporated by reference to Exhibit 3.1 to our Current Report on Form 8-K filed on September 6, 2022 (File No. 001-32312))
3.3	Novelis Inc. Amended and Restated Bylaws, adopted as of July 24, 2008 (incorporated by reference to Exhibit 3.2 to our Current Report on Form 8-K filed on July 25, 2008 (File No. 001-32312))
31.1	Section 301 Certification of Principal Executive Officer
31.2	Section 302 Certification of Principal Financial Officer
32.1	Section 906 Certification of Principal Executive Officer
32.2	Section 906 Certification of Principal Financial Officer
101.INS	XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

NOVELIS INC.

By:	/s/ Devinder Ahuja
	Devinder Ahuja Chief Financial Officer (Principal Financial Officer and Authorized Officer)
By:	/s/ Stephanie Rauls
	Stephanie Rauls Senior Vice President, Deputy Chief Financial Officer and Chief Accounting Officer (Principal Accounting Officer)

Date: February 6, 2023

Exhibit 31.1

Certification

I, Steven Fisher, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Novelis Inc. (Novelis);

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer(s) and I have disclosed, based on my most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

/s/ Steven Fisher

Steven Fisher
President and Chief Executive Officer
(Principal Executive Officer)

Date: February 6, 2023

Exhibit 31.2

Certification

I, Devinder Ahuja, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Novelis Inc. (Novelis);

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

/s/ Devinder Ahuja

Devinder Ahuja
Chief Financial Officer
(Principal Financial Officer)

Date: February 6, 2023

Exhibit 32.1

Certification Pursuant to 18 U.S.C. Section 1350 as adopted pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to 18 U.S.C. Section 1350, the undersigned officer of Novelis Inc. (Novelis), hereby certifies that Novelis' Quarterly Report on Form 10-Q for the period ended December 31, 2022 (Report) fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended, and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of Novelis.

/s/ Steven Fisher
Steven Fisher
President and Chief Executive Officer
(Principal Executive Officer)

Date: February 6, 2023

The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of this Report.

Exhibit 32.2

Certification Pursuant to 18 U.S.C. Section 1350 as adopted pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to 18 U.S.C. Section 1350, the undersigned officer of Novelis Inc. (Novelis), hereby certifies that Novelis' Quarterly Report on Form 10-Q for the period ended December 31, 2022 (Report) fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended, and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of Novelis.

/s/ Devinder Ahuja
Devinder Ahuja
Chief Financial Officer
(Principal Financial Officer)

Date: February 6, 2023

The foregoing certification is being furnished solely pursuant to 18 U.S.C. Section 1350 and is not being filed as part of this Report.