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 ý

For the quarterly period ended September 30, 2019

Or

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

For the transition period from

Commission file number: 001-32312

Novelis Inc.

(Exact name of Registrant as specified in its charter)

98-0442987 Canada (State or other jurisdiction of incorporation or organization) (I.R.S. Employer Identification Number)

3560 Lenox Road, Suite 2000 Atlanta, Georgia (Address of principal executive offices)

30326

(Zip Code)

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

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
	t: (1) has filed all reports required to be filed by Section 1 and (2) has been subject to such filing requirements for the	13 or 15 (d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period he past 90 days. Yes "No \circ
The Registrant is a voluntary filer and is not section 13 or 15(d) of the Securities Exchange Act o	subject to the filing requirements of Section 13 or 15(d) of 1934 during the preceding 12 months.	f the Securities Exchange Act of 1934. However, the Registrant has filed all reports required to be filed by
Indicate by check mark whether the Registrar shorter period that the Registrant was required to sub	nt has submitted electronically every Interactive Data File omit such files). Yes ý No ¨	required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such
	nt is a large accelerated filer, an accelerated filer, a non-acing company," and "emerging growth company" in Rule	celerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large 12b-2 of the Exchange Act. (Check one):
Large accelerated filer	**	Accelerated filer
Non-accelerated filer	ý	Smaller reporting company
Emerging growth company	-	
Indicate by check mark whether the Registrar	nt is a shell company (as defined in Rule 12b-2 of the Exc	hange Act). Yes "No ý
If an emerging growth company, indicate by oursuant to Section 13(a) of the Exchange Act.	check mark if the Registrant has elected not to use the ext	ended transition period for complying with any new or revised financial accounting standards provided

As of November 5, 2019, 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

Novelis Inc.

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PART I. FINANCIAL INFORMATION

Item 1. Financial Statements (unaudited)

Novelis Inc. CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS (unaudited) (in millions)

	Three Months Ended September 30,					Six Months Ended September 30,				
	2019			2018		2019	2018			
Net sales	\$	2,851	\$	3,136	\$	5,776	\$	6,233		
Cost of goods sold (exclusive of depreciation and amortization)		2,348		2,657		4,762		5,248		
Selling, general and administrative expenses		122		127		249		244		
Depreciation and amortization		88		86		176		172		
Interest expense and amortization of debt issuance costs		61		68		126		134		
Research and development expenses		18		17		37		32		
Restructuring and impairment, net		32		_		33		1		
Equity in net (income) loss of non-consolidated affiliates		_		(1)		_		(1)		
Other (income) expenses, net		2		(6)		6		23		
Business acquisition and other integration related costs		12		8		29		10		
	\$	2,683	\$	2,956	\$	5,418	\$	5,863		
Income before income taxes		168		180		358		370		
Income tax provision		45		64		108		117		
Net income	\$	123	\$	116	\$	250	\$	253		
Net income attributable to noncontrolling interest		_		_		_		_		
Net income attributable to our common shareholder	\$	123	\$	116	\$	250	\$	253		

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

	Three Months Ended September 30,					Six Months End	ed Sept	ember 30,
		2019		2018		2019		2018
Net income	\$	123	\$	116	\$	250	\$	253
Other comprehensive income (loss):								
Currency translation adjustment		(86)		(1)		(81)		(118)
Net change in fair value of effective portion of cash flow hedges		(36)		11		(16)		(57)
Net change in pension and other benefits		18		10		26		28
Other comprehensive income (loss) before income tax effect	\$	(104)	\$	20	\$	(71)	\$	(147)
Income tax provision (benefit) related to items of other comprehensive income (loss)		(5)		5		3		(9)
Other comprehensive income (loss), net of tax		(99)		15		(74)		(138)
Comprehensive income	\$	24	\$	131	\$	176	\$	115
Less: Comprehensive income attributable to noncontrolling interest, net of tax		1		1		3		1
Comprehensive income attributable to our common shareholder	\$	23	\$	130	\$	173	\$	114

Novelis Inc. CONDENSED CONSOLIDATED BALANCE SHEETS (unaudited) (in millions, except number of shares)

	Sep	otember 30, 2019	March 31, 2019
ASSETS			
Current assets			
Cash and cash equivalents	\$	935	\$ 950
Accounts receivable, net			
— third parties (net of allowance for uncollectible accounts of \$7 as of September 30, 2019 and March 31, 2019, respectively)		1,329	1,417
— related parties		159	164
Inventories		1,454	1,460
Prepaid expenses and other current assets		122	121
Fair value of derivative instruments		101	70
Assets held for sale		5	3
Total current assets	\$	4,105	\$ 4,185
Property, plant and equipment, net		3,435	3,385
Goodwill		607	607
Intangible assets, net		323	351
Investment in and advances to non-consolidated affiliates		768	792
Deferred income tax assets		136	142
Other long-term assets		203	101
Total assets	\$	9,577	\$ 9,563
LIABILITIES AND SHAREHOLDER'S EQUITY			
Current liabilities			
Current portion of long-term debt	\$	19	\$ 19
Short-term borrowings		14	39
Accounts payable			
— third parties		1,827	1,986
— related parties		202	175
Fair value of derivative instruments		102	87
Accrued expenses and other current liabilities		532	616
Total current liabilities	\$	2,696	\$ 2,922
Long-term debt, net of current portion		4,338	4,328
Deferred income tax liabilities		248	223
Accrued postretirement benefits		811	844
Other long-term liabilities		242	180
Total liabilities	\$	8,335	\$ 8,497
Commitments and contingencies			
Shareholder's equity			
Common stock, no par value; unlimited number of shares authorized; 1,000 shares issued and outstanding as of September 3 2019 and March 31, 2019	0,	_	_
Additional paid-in capital		1,404	1,404
Retained earnings		453	203
Accumulated other comprehensive income (loss)		(583)	(506)
Total equity of our common shareholder	\$	1,274	\$ 1,101
Noncontrolling interest		(32)	(35)
Total equity	\$	1,242	\$ 1,066
Total liabilities and equity	\$	9,577	\$ 9,563

See Note 6 — Consolidation for information about our consolidated variable interest entity (VIE).

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

DPERATING ACTIVITIES Wet income Adjustments to determine net cash provided by operating activities: Depreciation and amortization (Gain) loss on unrealized derivatives and other realized derivatives in investing activities, net	\$	2019	\$	2018
Set income adjustments to determine net cash provided by operating activities: Depreciation and amortization	\$	250	\$	
Adjustments to determine net cash provided by operating activities: Depreciation and amortization	\$	250	\$	
Depreciation and amortization				253
•				
(Gain) loss on unrealized derivatives and other realized derivatives in investing activities, net		176		172
		(21)		(8)
(Gain) loss on sale of assets		(2)		2
Impairment charges		11		_
Deferred income taxes, net		32		21
Equity in net (gain) loss of non-consolidated affiliates		_		(1)
Amortization of debt issuance costs and carrying value adjustments		9		9
Changes in operating assets and liabilities:				
Accounts receivable		51		(70)
Inventories		(22)		(237)
Accounts payable		(57)		141
Other current assets		(4)		(49)
Other current liabilities		(94)		(20)
Other noncurrent assets		2		(10)
Other noncurrent liabilities		(34)		7
Net cash provided by (used in) operating activities	\$	297	\$	210
NVESTING ACTIVITIES				
Capital expenditures		(300)		(114)
acquisition of assets under a capital lease		_		(239)
Proceeds from sales of assets, third party, net of transaction fees and hedging		3		2
Proceeds from investment in and advances to non-consolidated affiliates, net		11		6
Proceeds (outflows) from the settlement of derivative instruments, net		3		(5)
Other		7		7
Net cash provided by (used in) investing activities	\$	(276)	\$	(343)
TINANCING ACTIVITIES			_	
roceeds from issuance of long-term and short-term borrowings		12		_
rincipal payments of long-term and short-term borrowings		(11)		(40)
Revolving credit facilities and other, net		(23)		103
Debt issuance costs		(2)		(2)
Net cash provided by (used in) financing activities	\$	(24)	\$	61
Vet increase (decrease) in cash, cash equivalents and restricted cash	_ 	(3)	-	(72)
Effect of exchange rate changes on cash		(11)		(19)
Cash, cash equivalents and restricted cash — beginning of period		960		932
Cash, cash equivalents and restricted cash — end of period	\$	946	\$	841
assi, cash equivalents and restricted cash—thu of period	<u> </u>	710	Ψ	011
Cash and cash equivalents	\$	935	\$	829
Restricted cash (Included in "Other long-term assets")		11		12
Cash, cash equivalents and restricted cash — end of period	\$	946	\$	841

Novelis Inc. CONDENSED CONSOLIDATED STATEMENT OF SHAREHOLDER'S EQUITY (unaudited) (in millions, except number of shares)

	Equity of our Common Shareholder												
	Comm	Common Stock				(Accumulated			Accumulated Other	Non-			
	Shares		Amount		Additional id-in Capital	I	Deficit) Retained earnings	Co	mprehensive Income (Loss)		controlling Interest	To	otal Equity
Balance as of March 31, 2018	1,000	\$	_	\$	1,404	\$	(283)	\$	(261)	\$	(37)	\$	823
Adoption of Accounting Standards Updates	_		_		_		52		(16)		_		36
Balance as of April 1, 2018	1,000	\$	_	\$	1,404	\$	(231)	\$	(277)	\$	(37)	\$	859
Net income attributable to our common shareholder	_		_		_		253		_		_		253
Currency translation adjustment included in AOCI	_		_		_		_		(118)		_		(118)
Change in fair value of effective portion of cash flow hedges, net of tax benefit of \$17 million included in AOCI	_		_		_		_		(40)		_		(40)
Change in pension and other benefits, net of tax provision of \$8 million included in AOCI			_		_		_		19		1		20
Balance as of September 30, 2018	1,000	\$		\$	1,404	\$	22	\$	(416)	\$	(36)	\$	974

					Equi	ty of our Comm	on Sh	areholder				
		Comm	on S	tock Amount		Additional aid-in Capital	Re	etained Earnings	Accumulated Other prehensive Income (Loss)	Non- controlling Interest	To	tal Equity
Bal	ance as of March 31, 2019	1,000	\$	_	\$	1,404	\$	203	\$ (506)	\$ (35)	\$	1,066
	Net income attributable to our common shareholder	_		_		_		250	_	_		250
	Currency translation adjustment included in AOCI	_		_		_		_	(81)	_		(81)
	Change in fair value of effective portion of cash flow hedges, net of tax benefit of \$5 million included in AOCI	_		_		_		_	(11)	_		(11)
	Change in pension and other benefits, net of tax provision of \$8 million included in AOCI	_		_		_		_	15	3		18
Bal	ance as of September 30, 2019	1,000	\$		\$	1,404	\$	453	\$ (583)	\$ (32)	\$	1,242

					Equi	ity of our Comm	on Sha	areholder				
		Comm	on St	Amount	Pa	Additional aid-in Capital		umulated Deficit) tained earnings	Accumulated Other prehensive Income (Loss)	Non- controlling Interest	To	otal Equity
Bal	ance as of June 30, 2018	1,000	\$	_	\$	1,404	\$	(94)	\$ (430)	\$ (37)	\$	843
	Net income attributable to our common shareholder	_		_		_		116	_	_		116
	Currency translation adjustment included in AOCI	_		_		_		_	(1)	_		(1)
	Change in fair value of effective portion of cash flow hedges, net of tax provision of \$2 million included in AOCI	_		_		_		_	9	_		9
	Change in pension and other benefits, net of tax provision of \$3 million included in AOCI	_		_		_		_	6	1		7
Ba	ance as of September 30, 2018	1,000	\$	_	\$	1,404	\$	22	\$ (416)	\$ (36)	\$	974

					Equity	y of our Comm	on Sh	areholder					
		Comm	on S	tock						Accumulated Other		Non-	
		Shares		Amount		Additional d-in Capital	Re	tained Earnings	Con	prehensive Income (Loss)	controlling Interest		 Total Equity
Bal	ance as of June 30, 2019	1,000	\$	_	\$	1,404	\$	330	\$	(483)	\$	(33)	\$ 1,218
	Net income attributable to our common shareholder	_		_		_		123		_		_	123
	Currency translation adjustment included in AOCI	_		_		_		_		(86)		_	(86)
	Change in fair value of effective portion of cash flow hedges, net of tax benefit of \$11 million included in AOCI	_		_		_		_		(25)		_	(25)
	Change in pension and other benefits, net of tax provision of \$6 million included in AOCI	_		_				_		11		1	12
Bal	ance as of September 30, 2019	1,000	\$		\$	1,404	\$	453	\$	(583)	\$	(32)	\$ 1,242

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. All of the common shares of Novelis are owned directly by AV Metals Inc. and indirectly by Hindalco.

Organization and Description of Business

We produce aluminum 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, electronics, architectural and industrial product markets. We have recycling operations in many of our plants to recycle post-consumer aluminum, such as used-beverage cans and post-industrial aluminum, such as class scrap. As of September 30, 2019, we had manufacturing operations in nine countries on four continents: North America, South America, Asia and Europe, through 23 operating facilities, including recycling operations in twelve of these plants.

The March 31, 2019 condensed consolidated balance sheet data was derived from the March 31, 2019 audited financial statements, but does not include all disclosures required by accounting principles generally accepted in the United States of America (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 Form 10-K for the year-ended March 31, 2019 filed with the United States Securities and Exchange Commission (SEC) on May 8, 2019. 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 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 all significant 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 where we have the ability to exercise significant influence over operating and financial policies. Consolidated "Net income attributable to our common shareholder" includes our share of net income (loss) of these entities.

Restricted Cash Policy

Restricted cash is comprised of cash deposits for employee benefits and is disclosed on the condensed consolidated statement of cash flows.

Use of Estimates and Assumptions

The preparation of our condensed consolidated financial statements in conformity with accounting principles generally accepted in the United States of America (U.S. GAAP) requires us to make estimates and assumptions. These estimates and assumptions affect the reported amounts of assets and liabilities and 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) the fair value of derivative financial instruments; (2) impairment of goodwill; (3) impairment of long lived assets and other intangible assets; (4) impairment and assessment of consolidation of equity investments; (5) actuarial assumptions related to pension and other postretirement benefit plans; (6) tax uncertainties and valuation allowances; and (7) 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, as more experience is acquired, as additional information is obtained and as 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.

Recently Adopted Accounting Standards

Standard	Adoption	Description	Disclosure Impact
ASU 2019-07, Codification Updates to SEC Sections (Issued July 2019)	July 1, 2019	The standard provides various codification updates and improvements to address comments received.	The adoption of this standard did not have an impact on the condensed consolidated financial statements. Our condensed consolidated statement of shareholder's equity now discloses current and prior period quarter-to-date activity as required by the ASU.
ASU 2016-02, <i>Leases (Topic 842)</i> along with additional technical improvements, practical expedients, and clarifications since issued. (Issued February 2016)	April 1, 2019	The standard requires organizations that lease assets to recognize assets and liabilities for the rights and obligations created by the leases on balance sheet. The standard requires qualitative and quantitative disclosures to help investors and financial statement users better understand the amount, timing and uncertainty of cash flows arising from leases.	We recognized right-of-use assets and lease liabilities on our consolidated balance sheets with no impact to the opening balance of retained earnings. The adoption of this standard did not have a material effect on the condensed consolidated statement of operations or the condensed consolidated statement of cash flows. See Note 5 — Leases for further details on the adoption of this standard.
ASU 2018-09, Codification Improvements (Issued July 2018)	April 1, 2019	The standard provides various codification updates and improvements to address comments received.	The adoption of this standard did not have an impact on the condensed consolidated financial statements and disclosures.
ASU 2018-16, Derivatives and Hedging (Topic 815): Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes (Issued October 2018)	April 1, 2019	The standard permits the use of the OIS based on the SOFR as a U.S. benchmark interest rate for purposes of hedge accounting under Topic 815 as requested by the Federal Reserve Board during deliberations leading to the issuance of ASU 2017-12. The FASB recognized that although the OIS rate based on SOFR is not yet widely recognized and quoted within the U.S. financial market, the attributes of the repo rates underlying the calculation of SOFR are recognized.	The adoption of this standard did not have an impact on the condensed consolidated financial statements and disclosures. The Company does not currently have any interest rate derivative instruments, but is currently evaluating the potential future impact of this standard.
ASU 2018-02, Income Statement- Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income. (Issued February 2018)	April 1, 2018	This standard provides an option to reclassify stranded tax effects within Accumulated other comprehensive income (loss) (AOCI) to Retained earnings due to the U.S. federal corporate income tax rate change in the U.S. Tax Cuts and Jobs Act of 2017 (the "Act").	We reclassified \$16 million into retained earnings of our common shareholder from AOCI. This reclassification consisted of deferred taxes originally recorded in AOCI at rates that exceeded the newly enacted U.S. federal corporate tax rate. There was no impact to net income. Certain prior period amounts have been adjusted as a result of the adoption of this standard.
ASU 2016-16, Income Taxes (Topic 740) - Intra-Entity Asset Transfers of Assets Other than Inventory (Issued October 2016)	April 1, 2018	This standard eliminates the exception for all intra-entity sales of assets other than inventory. It requires the tax effect of intra-entity sales of assets other than inventory to be recognized currently which will impact Novelis' effective tax rate. The changes require the current and deferred income tax consequences of the intra-entity transfer to be recorded when the transaction occurs.	We adopted this standard on a modified retrospective basis and the cumulative effect of the change on retained earnings is \$36 million with a corresponding impact to deferred tax balances. Certain prior period amounts have been adjusted as a result of the adoption of this standard.

Recently Issued Accounting Standards (Not yet adopted)

Standard	Adoption	Description	Disclosure Impact
ASU 2019-04, Codification Improvements: Topic 326: Financial Instruments - Credit Losses, Topic 815: Derivatives and Hedging, and Topic 825: Financial Instruments	Various	The standard provides various codification updates and improvements to address comments received.	The Company is currently evaluating the impact of this standard.
ASU 2018-17, Consolidation (Topic 810): Targeted Improvements to Related Party Guidance for Variable Interest Entities (Issued October 2018)	April 1, 2020	This standard eliminates the requirement that entities consider indirect interests held through related parties under common control in their entirety when assessing whether a decision-making fee is a variable interest. Instead, the reporting entity must consider such indirect interests on a proportionate basis.	The Company is currently evaluating the impact of this standard.
ASU 2018-15, Intangibles-Goodwill and Other Internal-Use Software (Topic 350- 40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement that Is a Service Contract (Issued August 2018)	April 1, 2020	This standard requires capitalization of implementation costs incurred in a hosting arrangement that is a service contract. This change will better align with requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). The accounting for the service element of a hosting arrangement that is a service contract is not affected.	The Company is currently evaluating the impact of this standard.
ASU 2018-14, Compensation - Retirement Benefits - Defined Benefit Plans - General (Topic 715-20): Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans (Issued August 2018)	April 1, 2020	This standard added requirements for new disclosures such as requiring a narrative description of the reasons for significant gains and losses affecting the benefit obligation for the period and also an explanation of any other significant changes in the benefit obligation or plan assets that are not otherwise apparent in the other disclosures required by ASC 715. Further, the standard removes some currently required disclosures such as (a) the requirement (for public entities) to disclose the effects of a one-percentage-point change on the assumed health care costs and the effect of this change in rates on service cost, interest cost, and the benefit obligation for postretirement health care benefits and (b) the amounts in accumulated other comprehensive income "OCI" expected to be recognized in net periodic benefit costs over the next fiscal year.	The Company is currently evaluating the impact of this standard.
ASU 2017-04, Intangibles-Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment (Issued January 2017)	April 1, 2020	This standard removes Step 2 from the goodwill impairment test. As amended, the goodwill impairment test will consist of one step comparing the fair value of a reporting unit with its carrying amount. Under the simplified model, a goodwill impairment is calculated as the difference between the carrying amount of the reporting unit and its fair value, but not to exceed the carrying amount of goodwill allocated to that reporting unit. This standard will need to be considered each time Novelis performs an assessment of goodwill for impairment under the quantitative test.	The Company is currently evaluating the impact of this standard.
ASU 2016-13, Financial Instrument- Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments along with additional technical improvements and clarifications since issued. (Issued June 2016)	April 1, 2020	The standard provides financial statement users with more decision-useful information about expected credit losses on financial instruments and other commitments to extend credit held by a reporting entity at each reporting date. The "current expected credit loss" (CECL) model requires the Company to measure all expected credit losses for financial instruments held at the reporting date based on historical experience, current conditions, and reasonable supportable forecasts.	The Company is currently evaluating the impact of this standard.
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2. REVENUE FROM CONTRACTS WITH CUSTOMERS

The Company's contracts with customers are comprised of purchase orders along with standard terms and conditions. These contracts with customers typically consist of the manufacture of products which represent single performance obligations that are satisfied upon transfer of control of the product to the customer at a point in time. Transfer of control is assessed based on alternative use of the products we produce and our enforceable right to payment for performance to date under the contract terms. Transfer of control and revenue recognition generally occur upon shipment or delivery of the product, which is when title, ownership and risk of loss pass to the customer and is based on the applicable shipping terms. The shipping terms vary across all businesses and depend on the product, the country of origin, and the type of transportation (truck, train, or vessel). The length of payment terms can vary per contract but none extend beyond one year. Revenue is recognized net of any volume rebates or other incentives.

We disaggregate revenue from contracts with customers on a geographic basis based on our segment view. This disaggregation also achieves the disclosure objective to depict how the nature, amount, timing, and uncertainty of revenue and cash flows are affected by economic factors. We manage our activities on the basis of geographical regions and are organized under four operating segments: North America, South America, Asia and Europe. See Note 18 — Segment, Major Customer and Major Supplier Information for further information about our segment revenue.

3. RESTRUCTURING AND IMPAIRMENT, NET

"Restructuring and impairment, net" includes restructuring costs, impairments, and other related expenses. "Restructuring and impairment, net" for the three and six months ended September 30, 2019 totaled \$32 million and \$33 million, respectively, and is primarily related to portfolio optimization efforts resulting in the upcoming closure of certain non-core operations in Europe. Of the \$32 million recognized during the three months ended September 30, 2019, \$21 million is related to employee severance and \$11 million is related primarily to the impairment of property, plant, and equipment. We do not anticipate significant changes in relation to this restructuring plan between now and March 2020, the expected date that operations plan to cease, that will have a material impact on future results of operations, liquidity, and capital resources.

"Restructuring and impairment, net" for the three months ended September 30, 2018 totaled less than \$1 million. "Restructuring and impairment, net" for the six months ended September 30, 2018 totaled \$1 million.

As of September 30, 2019, the restructuring liability totaled \$36 million with \$27 million included in "Accrued expenses and other current liabilities" and the remaining is within "Other long-term liabilities" on our accompanying condensed consolidated balance sheet. As of September 30, 2019, the restructuring liability totaled \$24 million for the Europe segment, \$11 million for South America segment, and \$1 million for the North America segment.

The following table summarizes our restructuring liability activity and other impairment charges (in millions).

	tructuring ilities	Other restructuring charges (A)	restructuring charges	Other impairments (B)	Total restructuring and impairments, net
Balance as of March 31, 2019	\$ 17				
Fiscal 2020 Activity:					
Expenses	22	11	\$ 33	_	\$ 33
Cash payments	(2)				
Foreign currency	(1)				
Balance as of September 30, 2019	\$ 36				

⁽A) Other restructuring charges include restructuring related impairments and period expenses that were not recorded through the restructuring liability.

⁽B) Other impairment charges not related to restructuring activities.

4. INVENTORIES

"Inventories" consist of the following (in millions).

	September 30, 2019	March 31, 2019
Finished goods	\$ 379	\$ 354
Work in process	654	684
Raw materials	249	254
Supplies	172	168
Inventories	\$ 1,454	\$ 1,460

5. LEASES

We lease certain land, buildings and equipment under noncancelable operating lease arrangements and certain office space under finance (capital) lease arrangements. Upon adoption of ASC 842, we elected the following practical expedients:

- Non-lease components: Leases that contain non-lease components (primarily equipment maintenance) are accounted for as a single component and recorded on the
 condensed consolidated balance sheet for certain asset classes including real estate and certain equipment. Non-lease components include, but are not limited to,
 common area maintenance, service arrangements, and supply agreements.
- Package of practical expedients: We will not reassess whether any expired or existing contracts are leases or contain leases, the lease classification for any expired or existing leases or any initial direct costs for any expired or existing leases as of the transition date.
- Additional transition method: We adopted the standard using a modified retrospective approach, applying the standard's transition provisions at the beginning of the period of adoption and maintain previous disclosure requirements for comparative periods.

We used the following policies and/or assumptions in evaluating our lease population:

- Lease determination: Novelis considers a contract to be or to contain a lease if the contract conveys the right to control the use of identified property, plant, or
 equipment (an identified asset) for a period of time in exchange for consideration.
- **Discount rate:** When our lease contracts do not provide a readily determinable implicit rate, we use the estimated incremental borrowing rate based on information available at the inception of the lease. The discount rate is determined by region and asset class.
- Variable payments: Novelis includes payments that are based on an index or rate within the calculation of right of use leased assets and lease liabilities, initially
 measured at the lease commencement date. Other variable lease payments include, but are not limited to, maintenance, service, and supply costs. These costs are
 disclosed as a component of total lease costs.
- Purchase options: Certain leases include options to purchase the leased property. The depreciable life of assets and leasehold improvements are limited by the expected lease term, unless there is a transfer of title or purchase option reasonably certain of exercise.
- Renewal options: Most leases include one or more options to renew, with renewal terms that can extend the lease term from one or more years. The exercise of lease renewal options is at our sole discretion.
- Residual value guarantees, restrictions, or covenants: Our lease agreements do not contain any material residual value guarantees or material restrictive covenants.
- Short-term leases: Leases with an initial term of 12 months or less are not recorded on the balance sheet; we recognize lease expense for these leases on a straight-line basis over the lease term and expense the associated operating lease costs to "Selling, general, and administrative expenses" on the condensed consolidated statement of operations.

The table below presents the classification of leasing assets and liabilities.

Leases	Septemb	September 30, 2019		
Assets				
Operating lease right-of-use assets	Other long-term assets	\$	100	
Finance lease assets (A)	Property, plant and equipment, net		2	
Total lease assets	Total lease assets		102	
Liabilities				
Current				
Operating lease liabilities	Accrued expenses and other current liabilities	\$	24	
Finance lease liabilities	Current portion of long-term debt		_	
Long term				
Operating lease liabilities	Other long-term liabilities		76	
Finance lease liabilities	Long-term debt, net of current portion		1	
Total lease liabilities		\$	101	

⁽A) Finance lease assets are recorded net of accumulated depreciation of \$6 million as of September 30, 2019.

The table below presents the classification of lease related expenses or income as reported on the condensed consolidated statements of operations. Amortization of and interest on liabilities related to finance leases were less than \$1 million during the three and six months ended September 30, 2019. Sublease income was less than \$1 million during the three and six months ended September 30, 2019.

Expense Type	Income Statement Classification	 hree Months Ended September 30, 2019	Six Mo	onths Ended September 30, 2019
Operating lease costs (A)	Selling, general and administrative expenses	\$ 13	\$	24

⁽A) Operating lease costs include short-term leases and variable lease costs.

Future minimum lease payments as of September 30, 2019, for our operating and finance leases having an initial or remaining non-cancelable lease term in excess of one year are as follows (in millions).

Period Ending September 30,	Operating leases	s (A)	Finance leases (B)	Total
2020	\$	17	<u> </u>	\$ 17
2021		26	_	26
2022		19	_	19
2023		14	_	14
2024		13	_	13
Thereafter		27	1	28
Total minimum lease payments	\$	116	\$ 1	\$ 117
Less: interest		16	_	16
Present value of lease liabilities	\$	100	\$ 1	\$ 101

⁽A) Operating lease payments related to options to extend lease terms that are reasonably certain of being exercised are immaterial and we do not have leases signed but not yet commenced as of September 30, 2019.

⁽B) Finance lease payments related to options to extend lease terms that are reasonably certain of being exercised are immaterial and we do not have leases signed but not yet commenced as of September 30, 2019.

The following table presents the weighted-average remaining lease term and discount rates.

Weighted-average remaining lease term (years)	As of September 30, 2019
Operating leases	6.5
Finance leases	6.7
Weighted-average discount rate	
Operating leases	3.73%
Finance leases	3.11%

The following table presents supplemental information on our operating leases for the six months ended September 30, 2019 (in millions). Operating and financing cash flows from finance leases were less than \$1 million for the six months ended September 30, 2019. Leased assets obtained in exchange for new operating and financing lease liabilities were \$14 million for the six months ended September 30, 2019, individually and in the aggregate.

Supplemental information	Six Months Ended September 2019	er 30,
Cash paid for amounts included in the measurement of lease liabilities		
Operating cash flows from operating leases	\$	27

Disclosure related to periods prior to adoption of the new lease standard

The following table sets forth the aggregate minimum lease payments under finance and operating leases (in millions).

Year Ending March 31,	Operating leases	Finance	e lease obligations
2020	\$ 29	\$	_
2021	22		_
2022	16		_
2023	12		_
2024	10		_
Thereafter	17		1
Total minimum lease payments	\$ 106	\$	1
Less: interest portion on finance leases			_
Principal obligation on finance leases		\$	1

6. CONSOLIDATION

Variable Interest Entities (VIE)

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 Aluminum Inc. (Logan) is a consolidated joint venture in which we hold 40% ownership. Our joint venture partner is Tri-Arrows Aluminum Inc. (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 its investors, 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.

Other than the contractually required reimbursements, we do not provide other 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).

	 September 30, 2019	March 31, 2019
Assets		
Current assets		
Cash and cash equivalents	\$ 5	\$ 1
Accounts receivable	14	40
Inventories	82	72
Prepaid expenses and other current assets	1	1
Total current assets	\$ 102	\$ 114
Property, plant and equipment, net	24	29
Goodwill	12	12
Deferred income taxes	64	64
Other long-term assets	35	27
Total assets	\$ 237	\$ 246
Liabilities		
Current liabilities		
Accounts payable	\$ 39	\$ 43
Accrued expenses and other current liabilities	21	21
Total current liabilities	\$ 60	\$ 64
Accrued postretirement benefits	238	245
Other long-term liabilities	1	1
Total liabilities	\$ 299	\$ 310

7. 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. See Note 18 — Segment, Major Customer and Major Supplier Information for the respective carrying values by segment as reported in our condensed consolidated balance sheets (in millions).

Alunorf

Aluminium Norf GmbH (Alunorf) is a joint venture investment between Novelis Deutschland GmbH, a subsidiary of Novelis, and Hydro Aluminum Deutschland GmbH (Hydro). 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 expense.

UAL

Ulsan Aluminum, Ltd. (UAL) is a joint venture investment between Novelis Korea Ltd., a subsidiary of Novelis, and Kobe Steel Ltd (Kobe). UAL currently produces flat rolled aluminum products exclusively for Novelis and Kobe. As of September 30, 2019, Novelis and Kobe both hold 50% interests in UAL. UAL is a thinly capitalized VIE that relies on the regular reimbursement of costs and expenses from its investors, 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.

AluInfra

AluInfra Services (AluInfra) is a joint venture investment between Novelis Switzerland SA (Novelis Switzerland), a subsidiary of Novelis, and Constellium N.V. (Constellium). 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 affiliates in the aggregate, and the nature and amounts of significant transactions we have with our non-consolidated affiliates (in millions). The amounts in the table below are disclosed at 100% of the operating results of these affiliates.

	Three Months Ended September 30,					Six Months Ended September 30,				
		2019	2018		2019			2018		
Net sales	\$	308	\$	332	\$	608	\$	650		
Costs and expenses related to net sales		302		327		595		642		
Income tax provision		2		2		3		3		
Net income	\$	4	\$	3	\$	10	\$	5		
Purchases of tolling services from Alunorf (Novelis' share)	\$	63	\$	65	\$	127	\$	129		

The following table describes the period-end account balances, shown as related party balances in the accompanying condensed consolidated balance sheets (in millions). We had no other material related party balances with non-consolidated affiliates.

	September 2019	30,	March 31, 2019
Accounts receivable-related parties	\$	159	\$ 164
Accounts payable-related parties	\$	202	\$ 175

Transactions with Hindalco

We occasionally have related party transactions with Hindalco. During the three and six months ended September 30, 2019 and 2018, we recorded "Net sales" of less than \$1 million between Novelis and Hindalco related primarily to sales of equipment and other services. As of September 30, 2019 and March 31, 2019, there was \$1 million and less than \$1 million of outstanding "Accounts receivable, net - related parties" and "Accounts Payable, net - related parties" related to transactions with Hindalco, respectively. During each of the three and six months ended September 30, 2019 and 2018, Novelis purchased less than \$1 million in raw materials from Hindalco.

8. DEBT

Debt consisted of the following (in millions).

			Septe	mber 30, 20	19	March 31, 2019																									
	Interest Rates (A)	P	rincipal	Car	nortized rrying ustments (B)	(Carrying Value	Principal		Principal		Principal		Principal		Principal		Principal		Principal		Principal		Principal		Principal		Unamortized Carrying Value Adjustments (B)		C	Carrying Value
Third party debt:											_																				
Short-term borrowings	4.19%	\$	14	\$	_	\$	14	\$	39	\$	_	\$	39																		
Novelis Inc.																															
Floating rate Term Loan Facility, due June 2022	3.95%		1,751		(28)		1,723		1,760		(33)		1,727																		
Novelis Corporation																															
5.875% Senior Notes, due September 2026	5.875%		1,500		(17)		1,483		1,500		(19)		1,481																		
6.25% Senior Notes, due August 2024	6.25%		1,150		(12)		1,138		1,150		(14)		1,136																		
Novelis China																															
Bank loans, due through June 2027 (CNY 83 million)	4.90%		12		_		12		_		_		_																		
Other																															
Finance lease obligations and other debt, due through December 2026	4.54%		1		_		1		3		_		3																		
Total debt		\$	4,428	\$	(57)	\$	4,371	\$	4,452	\$	(66)	\$	4,386																		
Less: Short-term borrowings			(14)		_		(14)		(39)		_		(39)																		
Less: Current portion of long-term debt			(19)		_		(19)		(19)		_		(19)																		
Long-term debt, net of current portion		\$	4,395	\$	(57)	\$	4,338	\$	4,394	\$	(66)	\$	4,328																		

⁽A) Interest rates are the stated rates of interest on the debt instrument (not the effective interest rate) as of September 30, 2019, and therefore, exclude the effects of related interest rate swaps and accretion/amortization of fair value adjustments as a result of purchase accounting in connection with Hindalco's purchase of Novelis and accretion/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.

Principal repayment requirements for our total debt over the next five years and thereafter using exchange rates as of September 30, 2019 (for our debt denominated in foreign currencies) are as follows (in millions).

As of September 30, 2019	 Amount
Short-term borrowings and current portion of long-term debt due within one year	\$ 33
2 years	18
3 years	1,716
4 years	1
5 years	1,152
Thereafter	1,508
Total	\$ 4,428

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

Short Term Credit Facility

Our credit agreement (the "Short Term Credit Agreement") governs the commitments of certain financial institutions to provide, subject to closing conditions (including the concurrent closing of our previously announced proposed acquisition of Aleris Corporation (Aleris)), up to \$1.5 billion of short term loans for purposes of funding a portion of the consideration payable in connection with the proposed acquisition of Aleris or repaying certain indebtedness of Aleris and its subsidiaries. The short term loans, once borrowed, will be unsecured, will mature one year from the borrowing date of the loans, will not be subject to any amortization payments and will accrue interest at LIBOR (as defined in the Term Loan Facility described below) plus 0.95%. The short term loans will be guaranteed by the same entities that have provided guarantees under the Term Loan Facility and ABL Revolver.

Senior Notes

As of September 30, 2019, we were in compliance with the covenants of our Senior Notes.

Term Loan Facility

On December 18, 2018, we entered into an increase joinder amendment (the "Term Loan Increase Joinder Amendment") to our existing secured term loan credit agreement (as amended by the Term Loan Increase Joinder Amendment, the "Amended Secured Term Loan Credit Agreement"). The Term Loan Increase Joinder Amendment governs the commitments of certain financial institutions to provide, subject to closing conditions (including the concurrent closing of the proposed acquisition of Aleris), up to \$775 million of incremental term loans under our existing term loan credit agreement.

The proceeds of the incremental term loans may be used to pay a portion of the consideration payable in connection with the proposed acquisition of Aleris and fees and expenses related to the proposed acquisition, the incremental term loans and short term loans. The incremental term loans will mature on the fifth anniversary of the date on which they are borrowed, subject to 0.25% quarterly amortization payments. The incremental term loans will, once borrowed, accrue interest at LIBOR (as defined in the Amended Secured Term Loan Credit Agreement) plus 1.75%. The incremental term loans will be subject to the same voluntary and mandatory prepayment provisions, affirmative and negative covenants and events of default as those applicable to the existing term loans outstanding under the Amended Secured Term Loan Credit Agreement. The incremental term loans will be guaranteed by the same entities that have provided guarantees under our Term Loan Facility and secured on a pari passu basis with our existing term loans by security interests in substantially all of the assets of the Company and the guarantors, subject to our existing intercreditor agreement.

As of September 30, 2019, borrowings outstanding under the Term Loan Facility (excluding the incremental term loans) consisted of a \$1.8 billion five-year secured term loan with \$18 million due within one year. As of September 30, 2019, we were in compliance with the covenants of our Term Loan Facility.

ABL Revolver

In April 2019, we entered into an amendment (the "Amendment") to our existing ABL Revolver facility. Pursuant to the terms of the agreement, the commitments under the pre-existing \$1 billion facility increased by \$500 million on October 15, 2019. Aleris and certain of its subsidiaries will become borrowers under the ABL Revolver Facility upon closing of the proposed acquisition, and the Amendment includes additional changes to facilitate the proposed acquisition of Aleris (including permitting borrowings under the Short Term Credit Agreement) and the inclusion of certain Aleris assets in the borrowing base following the acquisition, if consummated. The Amendment also includes additional changes to increase our operating flexibility.

As of September 30, 2019, the ABL Revolver consisted of a \$1 billion facility. As of September 30, 2019, the revolver had a zero balance and \$21 million was utilized for letters of credit. There was \$759 million in remaining availability, including \$104 million of remaining availability which can be utilized for letters of credit, and we were in compliance with the covenants of our ABL Revolver Facility.

Other Short-Term Borrowings

As of September 30, 2019, the \$14 million in short-term borrowings was primarily related to China loans (CNY 97 million). We had \$100 million in availability under our Novelis Korea revolving facilities and \$16 million in availability under our Novelis China revolving facilities.

China Bank Loans

In September 2019, we entered into a credit agreement with the Bank of China to provide up to \$75 million in unsecured loans to support previously announced capital expansion projects in China.

Refer to our Form 10-K for the year-ended March 31, 2019 for details on the issuances and respective covenants of our senior notes, short term credit facility, and senior secured credit facilities, which includes the Term Loan Facility and ABL Revolver facility.

9. SHARE-BASED COMPENSATION

During the six months ended September 30, 2019, we granted 2,681,386 Hindalco phantom restricted stock units (RSUs) and 3,475,995 Hindalco Stock Appreciation Rights (Hindalco SARs). Total compensation expense was \$6 million and \$12 million for the six months ended September 30, 2019 and 2018, respectively. As of September 30, 2019, the outstanding liability related to share-based compensation was \$16 million.

The cash payments made to settle all SAR liabilities were \$3 million and \$4 million in the six months ended September 30, 2019 and 2018, respectively. Total cash payments made to settle RSUs were \$9 million and \$14 million in the six months ended September 30, 2019 and 2018, respectively. Unrecognized compensation expense related to the non-vested Hindalco SARs (assuming all future performance criteria are met) was \$4 million, which is expected to be recognized over a weighted average period of 1.5 years. Unrecognized compensation expense related to the RSUs was \$8 million, which will be recognized over the remaining weighted average vesting period of 1.5 years.

For a further description of authorized long term incentive plans (LTIPs), including Hindalco SARs, RSUs, and Novelis Performance Units, please refer to our Form 10-K for the year ended March 31, 2019.

10. POSTRETIREMENT BENEFIT PLANS

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

		Pension Be	<u> </u>	Other Benefit Plans								
	Т	hree Months En	iber 30,	Three Months Ended September 30,								
		2019		2018		2019		2018				
Service cost	\$	10	\$	10	\$	3	\$	2				
Interest cost		15		15		2		2				
Expected return on assets		(18)		(16)		_		_				
Amortization — losses, net		9		8		_		1				
Net periodic benefit cost (A)	\$	16	\$	17	\$	5	\$	5				

	Pension Benefit Plans					Other Benefit Plans							
	Six Months Ended September 30,					Six Months Ended September 30,							
	20)19		2018		2019	2018						
Service cost	\$	20	\$	20	\$	6	\$	4					
Interest cost		30		30		4		4					
Expected return on assets		(36)		(32)		_		_					
Amortization — losses, net		17		16		_		2					
Net periodic benefit cost (A)	\$	31	\$	34	\$	10	\$	10					

⁽A) 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 (income) expenses, net."

The average expected long-term rate of return on plan assets is 5.5% in fiscal 2020.

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., U.K., Canada, Germany, Italy, Switzerland and Brazil. We contributed the following amounts (in millions) to all plans.

	Three Months En	ded Se	eptember 30,	 Six Months End	led September 30,		
	 2019		2018	 2019		2018	
Funded pension plans	\$ 33	\$	14	\$ 38	\$	16	
Unfunded pension plans	3		3	5		6	
Savings and defined contribution pension plans	7		7	17		16	
Total contributions	\$ 43	\$	24	\$ 60	\$	38	

During the remainder of fiscal 2020, we expect to contribute an additional \$13 million to our funded pension plans, \$7 million to our unfunded pension plans and \$17 million to our savings and defined contribution pension plans.

11. CURRENCY (GAINS) LOSSES

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

	 Three Months En	ded Sej	ptember 30,	Six Months Ended September 30,					
	 2019		2018		2019		2018		
(Gain) loss on remeasurement of monetary assets and liabilities, net	\$ (1)	\$	_	\$	(6)	\$	(6)		
(Gain) loss recognized on balance sheet remeasurement currency exchange contracts, net	2		_		8		6		
Currency (gains) losses, net	\$ 1	\$	_	\$	2	\$	_		

The following currency gains (losses) are included in "Accumulated other comprehensive income (loss)," net of tax and "Noncontrolling interest" in the accompanying condensed consolidated balance sheets (in millions).

	Ended September 30, 2019	Year End	ed March 31, 2019
Cumulative currency translation adjustment — beginning of period	\$ (236)	\$	(65)
Effect of changes in exchange rates	(81)		(171)
Cumulative currency translation adjustment — end of period	\$ (317)	\$	(236)

12. 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 (in millions).

	 September 30, 2019												
	As			Liab	ilitie	s		Net Fair Value					
	Current	Noncurrent (A)			Current	Noncurrent (A)			Assets / (Liabilities)				
Derivatives designated as hedging instruments:													
Cash flow hedges													
Metal contracts	\$ 28	\$	_	\$	(5)	\$	(1)	\$	22				
Currency exchange contracts	3		_		(31)		(9)		(37)				
Energy contracts	_		_		(5)		(6)		(11)				
Total derivatives designated as hedging instruments	\$ 31	\$	_	\$	(41)	\$	(16)	\$	(26)				
Derivatives not designated as hedging instruments:													
Metal contracts	47		_		(46)		_		1				
Currency exchange contracts	23		_		(15)		_		8				
Total derivatives not designated as hedging instruments	\$ 70	\$	_	\$	(61)	\$	_	\$	9				
Total derivative fair value	\$ 101	\$	_	\$	(102)	\$	(16)	\$	(17)				

				March 31, 2019				
	As	sets		Liab		Net Fair Value		
	Current		Noncurrent (A)	Current	Noncurrent (A)			Assets / (Liabilities)
Derivatives designated as hedging instruments:	 _							
Cash flow hedges								
Metal contracts	\$ 6	\$	_	\$ (10)	\$	_	\$	(4)
Currency exchange contracts	4		_	(15)		(1)		(12)
Energy contracts	_		_	(1)		(4)		(5)
Total derivatives designated as hedging instruments	\$ 10	\$	_	\$ (26)	\$	(5)	\$	(21)
Derivatives not designated as hedging instruments:								
Metal contracts	38		1	(34)		(1)		4
Currency exchange contracts	22		1	(27)		(1)		(5)
Total derivatives not designated as hedging instruments	\$ 60	\$	2	\$ (61)	\$	(2)	\$	(1)
Total derivative fair value	\$ 70	\$	2	\$ (87)	\$	(7)	\$	(22)

⁽A) The noncurrent portions of derivative assets and liabilities are included in "Other long-term assets-third parties" and in "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 the London Metals Exchange (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 local market premiums also results in metal price lag.

Price risk exposure arises from commitments to sell aluminum in future periods at fixed prices. We identify and designate certain LME aluminum forward contracts as fair value hedges of the metal price risk associated with fixed price sales commitments that qualify as firm commitments. We did not have any outstanding aluminum forward purchase contracts designated as fair value hedges as of September 30, 2019 and March 31, 2019.

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 two years in length. The average duration of undesignated 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 two years in length. The average duration of undesignated contracts is less than one year.

In addition to aluminum, we entered into LME copper and LMP forward contracts. As of September 30, 2019 and March 31, 2019, the fair value of these contracts represented a liability and an asset, respectively, of less than \$1 million. These contracts are undesignated with an average duration of less than two years.

The following table summarizes our metal notional amounts in kilotonnes (kt). One kt is 1,000 metric tonnes.

	September 30, 2019	March 31, 2019
Hedge type		
Purchase (sale)		
Cash flow purchases	44	_
Cash flow sales	(387)	(353)
Not designated	(32)	15
Total, net	(375)	(338)

Foreign Currency

We use foreign exchange forward contracts, cross-currency swaps and options 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 \$688 million and \$703 million in outstanding foreign currency forwards designated as cash flow hedges as of September 30, 2019 and March 31, 2019, respectively.

We use foreign currency contracts to hedge our foreign currency exposure to our net investment in foreign subsidiaries. We did not have any outstanding foreign currency forwards designated as net investment hedges as of September 30, 2019 and March 31, 2019.

As of September 30, 2019 and March 31, 2019, we had outstanding foreign currency exchange contracts with a total notional amount of \$846 million and \$737 million, respectively, to primarily hedge balance sheet remeasurement risk, which were not designated as hedges. Contracts representing the majority of this notional amount will mature during the third quarter of fiscal 2020 and offset the remeasurement impact.

Energy

We own an interest in an electricity swap contract to hedge our exposure to fluctuating electricity prices, which matures on January 5, 2022. As of September 30, 2019 and March 31, 2019, 1 million of notional megawatt hours was outstanding and the fair value of this swap was a liability of \$5 million and \$3 million, respectively. The electricity swap is designated as a cash flow hedge.

We use natural gas forward purchase contracts to manage our exposure to fluctuating energy prices in North America. We had a notional of 13 million MMBTUs designated as cash flow hedges as of September 30, 2019, and the fair value was a liability of \$5 million. There was a notional of 15 million MMBTU forward contracts designated as cash flow hedges as of March 31, 2019 and the fair value was a liability of \$2 million. As of September 30, 2019 and March 31, 2019, we had notionals of less than 1 million MMBTU forward contracts that were not designated as hedges. The fair value of forward contracts not designated as hedges as of September 30, 2019 and March 31, 2019 was a liability of less than \$1 million. The average duration of undesignated contracts is less than three years in length. One MMBTU is the equivalent of one decatherm, or one million British Thermal Units.

We use diesel fuel forward contracts to manage our exposure to fluctuating fuel prices in North America. We had a notional of 6 million gallons designated as cash flow hedges as of September 30, 2019, and the fair value was a liability of \$1 million. There was a notional of 8 million gallons designated as cash flow hedges as of March 31, 2019, and the fair value was a liability of less than \$1 million.

Interest Rate

As of September 30, 2019 and March 31, 2019, we had no outstanding interest rate swaps.

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 (income) expenses, net" (in millions). Gains (losses) recognized in other line items in the condensed consolidated statement of operations are separately disclosed within this footnote.

	Three Months En	ded Sept		Six Months End	tember 30,		
	2019		2018		2019		2018
Derivative instruments not designated as hedges	_						
Metal contracts	\$ (2)	\$	10	\$	(4)	\$	(6)
Currency exchange contracts	(2)		1		(8)		(9)
Energy contracts (A)	2		3		3		5
Gain (loss) recognized in "Other (income) expenses, net"	\$ (2)	\$	14	\$	(9)	\$	(10)
Derivative instruments designated as hedges	_						
Gain (loss) recognized in "Other (income) expenses, net" (B)	\$ 2	\$	_	\$	2	\$	_
Total gain (loss) recognized in "Other (income) expenses, net"	\$ _	\$	14	\$	(7)	\$	(10)
Balance sheet remeasurement currency exchange contract losses	\$ (2)	\$	_	\$	(8)	\$	(6)
Realized gains (losses), net	(1)		13		(8)		(1)
Unrealized gains (losses) on other derivative instruments, net	3		1		9		(3)
Total gain (loss) recognized in "Other (income) expenses, net"	\$ _	\$	14	\$	(7)	\$	(10)

(A) Includes amounts related to diesel swaps not designated as hedges, and electricity swap settlements.

The following table summarizes the impact on AOCI and earnings of derivative instruments designated as cash flow hedges (in millions). Within the next twelve months, we expect to reclassify \$2 million of losses from AOCI to earnings, before taxes.

	 OCI (Effec	tive Po	Recognized in ortion)	Amount of Gain (Loss) Recognized in OC1 (Effective Portion) Six Months Ended September 30,				 Amount of Recogn "Other (Income (Ineffec Excluded	ized i) Expetive a l Port	n enses, net" nd ion)	Amount of Gain (Loss) Recognized in "Other (Income) Expenses, net (Ineffective and Excluded Portion) Six Months Ended September 3			
	 2019	iucu 5	2018		2019	cu sc	2018	 Three Months Ended September 30, 2019 2018			_	2019		2018
Cash flow hedging derivatives					,		,	 						
Metal contracts	\$ 28	\$	29	\$	76	\$	(36)	\$ _	\$	_	\$	_	\$	_
Currency exchange contracts	(43)		_		(42)		(35)	2		_		2		_
Energy contracts	(5)		1		(9) 1		_	_			_		_	
Total	\$ (20)	\$	30	\$	25	\$	(70)	\$ 2	\$	_	\$	2	\$	_

⁽B) Amount includes: forward market premium/discount excluded from hedging relationship on designated foreign currency capital expenditure contracts; releases to income from AOCI on balance sheet remeasurement contracts.

Gain (Loss) Reclassification

	Amount of Gain (Loss) Reclassified from AOCI into Income/(Expense) (Effective Portion) Three Months Ended September 30,						(Exp Mont		Location of Gain (Loss) Reclassified from AOCI into Earnings
Cash flow hedging derivatives	2019			2018 2019 2018				2018	
Energy contracts (A)	\$	(1)	\$	_	\$	(2)	\$	(1)	Cost of goods sold (B)
Metal contracts		(1)		_		(1)		_	Cost of goods sold (B)
Metal contracts		23		27		53		_	Net sales
Currency exchange contracts		_		(5)		(1)		(7)	Cost of goods sold (B)
Currency exchange contracts		_		(1)		_		(1)	Selling, general and administrative expenses
Currency exchange contracts		(4)		(2)		(7)		(3)	Net sales
Currency exchange contracts		(1)		(1)		(1)		(1)	Depreciation and amortization
Total	\$	16	\$	18	\$	41	\$	(13)	Income (loss) before taxes
		(4)		(6)		(10)		2	Income tax (provision) benefit
	\$	12	\$	12	\$	31	31 \$ (11)		Net gain (loss)

- (A) Includes amounts related to electricity, natural gas, and diesel swaps.
- (B) "Cost of goods sold" is exclusive of depreciation and amortization.

The following tables summarize the location and amount of gains (losses) that were reclassified from "Accumulated other comprehensive income (loss)" into earnings and the amount excluded from the assessment of effectiveness for the periods presented (in millions).

	Three Months Ended September 30, 2019								Six Months Ended September 30, 2019										
	Net Sales		Cost of	Goods Sold	Se	lling, General & Administrative Expenses	Dep Aı	reciation and mortization	er (Income) penses, Net		Net Sales	Cost	of Goods Sold	Sel	lling, General & Administrative Expenses	Depi Ar	reciation and nortization		r (Income) enses, Net
Gain (loss) on cash flow hedging relationships																			
Metal commodity contracts:																			
Amount of gain reclassified from AOCI into income	\$	23	\$	(1)	\$	_	\$	_	\$ _	\$	53	\$	(1)	\$	_	\$	_	\$	_
Energy commodity contracts:																			
Amount of loss reclassified from AOCI into income	\$	_	\$	(1)	\$	_	\$	_	\$ _	\$	_	\$	(2)	\$	_	\$	_	\$	_
Foreign exchange contracts:																			
Amount of loss reclassified from AOCI into income	\$	(4)	\$	_	\$	_	\$	(1)	\$ _	\$	(7)	\$	(1)	\$	_	\$	(1)	\$	_
Amount excluded from effectiveness testing recognized in earnings based on changes in fair value	\$	_	\$	_	\$	_	\$	_	\$ 2	\$	_	\$	_	\$	_	\$	_	\$	2

	Three Months Ended September 30, 2018								Six Months Ended September 30, 2018											
•	N	Net Sales Cost of Goods Sold		Selling, General & Administrative oods Sold Expenses		Depreciation and Amortization		Other (Income) Expenses, Net		Net Sales		Cost of Goods Sold		Selling, General & Administrative Expenses		Depreciation and Amortization			er (Income) penses, Net	
Gain (loss) on cash flow hedging relationships																				
Metal commodity contracts:																				
Amount of gain reclassified from AOCI into income	\$	27	\$	_	\$	_	\$	_	\$	_	\$	_	\$	_	\$	_	\$	_	\$	_
Energy commodity contracts:																				
Amount of loss reclassified from AOCI into income	\$	_	\$	_	\$	_	\$	_	\$	_	\$	_	\$	(1)	\$	_	\$	_	\$	_
Foreign exchange contracts:																				
Amount of loss reclassified from AOCI into income	\$	(2)	\$	(5)	\$	(1)	\$	(1)	\$	_	\$	(3)	\$	(7)	\$	(1)	\$	(1)	\$	_

13. ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

The following tables summarize the change in the components of Accumulated other comprehensive income (loss), net of tax and excluding "Noncontrolling interest", for the periods presented (in millions).

	Currency Translation		(A)	Cash Flow Hedges		ostretirement nefit Plans	Total
Balance as of June 30, 2019	\$	(231)	\$	(8)	\$	(244)	\$ (483)
Other comprehensive income (loss) before reclassifications		(86)		(13)		5	(94)
Amounts reclassified from AOCI, net		_		(12)		6	(6)
Net current-period other comprehensive income (loss)		(86)		(25)		11	(100)
Balance as of September 30, 2019	\$	(317)	\$	(33)	\$	(233)	\$ (583)
	Currenc	cy Translation	(A)	Cash Flow Hedges		ostretirement nefit Plans	 Total
Balance as of June 30, 2018	\$	(182)	\$	(21)	\$	(227)	\$ (430)
Other comprehensive income (loss) before reclassifications		(1)		21		(1)	19
Amounts reclassified from AOCI, net				(12)		7	 (5)
Net current-period other comprehensive income (loss)		(1)		9		6	 14
Balance as of September 30, 2018	\$	(183)	\$	(12)	\$	(221)	\$ (416)
	Currenc	cy Translation	(A)	Cash Flow Hedges		stretirement nefit Plans	Total
Balance as of March 31, 2019	\$	(236)	\$	(22)	\$	(248)	\$ (506)
Other comprehensive income (loss) before reclassifications		(81)		20		3	(58)
Amounts reclassified from AOCI, net				(31)		12	 (19)
Net current-period other comprehensive income (loss)		(81)		(11)		15	(77)
Balance as of September 30, 2019	\$	(317)	\$	(33)	\$	(233)	\$ (583)
	Currene	cy Translation	(A)	Cash Flow Hedges		ostretirement nefit Plans	 Total
Balance as of March 31, 2018	\$	(65)	\$	31	\$	(227)	\$ (261)
Amounts reclassified from AOCI, net - due to adoption of accounting standard updates		_		(3)		(13)	(16)
Balance as of April 1, 2018	\$	(65)	\$	28	\$	(240)	\$ (277)
Other comprehensive income (loss) before reclassifications		(118)		(51)		5	(164)
Amounts reclassified from AOCI, net		_		11		14	25
Net current-period other comprehensive income (loss)		(118)		(40)	_	19	(139)
Balance as of September 30, 2018	\$	(183)	\$	(12)	\$	(221)	\$ (416)

⁽A) For additional information on our cash flow hedges, see Note 12 — Financial Instruments and Commodity Contracts.

⁽B) For additional information on our postretirement benefit plans, see Note 10 — Postretirement Benefit Plans.

14. FAIR VALUE MEASUREMENTS

We record certain assets and liabilities, primarily derivative instruments, on our 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 we 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 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, 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, cross-currency swaps, foreign currency contracts, aluminum and copper forward contracts, natural gas and diesel fuel forward contracts.

We classify derivative contracts that are valued based on models with significant unobservable market inputs as Level 3 of the valuation hierarchy. Our electricity swap, which is our only Level 3 derivative contract, represents an agreement to buy electricity at a fixed price at our Oswego, New York facility. Forward prices are not observable for this market, so we must make certain assumptions based on available information we believe to be relevant to market participants. We use observable forward prices for a geographically nearby market and adjust for 1) historical spreads between the cash prices of the two markets, and 2) historical spreads between retail and wholesale prices.

For the electricity swap, the average forward price at September 30, 2019, estimated using the method described above, was \$40 per megawatt hour, which represented an approximately \$2 premium over forward prices in the nearby observable market. The actual rate from the most recent swap settlement was approximately \$30 per megawatt hour. Each \$1 per megawatt hour decline in price decreases the valuation of the electricity swap by \$1 million.

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 September 30, 2019 and March 31, 2019, we did not have any Level 1 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 following table presents our derivative assets and liabilities which were measured and recognized at fair value on a recurring basis and classified under the appropriate level of the fair value hierarchy as of September 30, 2019 and March 31, 2019 (in millions). The table below also discloses the net fair value of the derivative instruments after considering the impact of master netting agreements.

	Septembe	er 30,	2019		March	19	
	Assets		Liabilities		Assets		Liabilities
Level 2 instruments:							
Metal contracts	\$ 75	\$	(52)	\$	45	\$	(45)
Currency exchange contracts	26		(55)		27		(44)
Energy contracts	_		(6)		_		(2)
Total level 2 instruments	\$ 101	\$	(113)	\$	72	\$	(91)
Level 3 instruments:						-	
Energy contracts	_		(5)		_		(3)
Total level 3 instruments	\$ _	\$	(5)	\$	_	\$	(3)
Total gross	\$ 101	\$	(118)	\$	72	\$	(94)
Netting adjustment (A)	\$ (45)	\$	45	\$	(36)	\$	36
Total net	\$ 56	\$	(73)	\$	36	\$	(58)

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

There were no unrealized gains (losses) recognized in "Other (income) expenses, net" for the three and six months ended September 30, 2019 related to Level 3 financial instrument.

The following table presents a reconciliation of fair value activity for Level 3 derivative contracts (in millions).

	Level 3 Derivative Inst (A)	ivative Instruments		
Balance as of March 31, 2019	\$	(3)		
Unrealized/realized gain (loss) included in earnings (B)		2		
Unrealized/realized gain (loss) included in AOCI (C)		(3)		
Settlements (B)		(1)		
Balance as of September 30, 2019	\$	(5)		

⁽A) Represents net derivative liabilities.

- (B) Included in "Other (income) expenses, net."
- (C) Included in "Net change in fair value of effective portion of cash flow hedges."

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 (in millions). The table excludes short-term financial assets and liabilities for which we believe carrying value approximates fair value. We value 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.

		Septemb	019		March	31, 20	19	
	Ca	arrying Value	Fair Value		Carrying Value			Fair Value
Liabilities								
Total debt — third parties (excluding short-term borrowings)	\$	4,357	\$	4,582	\$	4,347	\$	4,472

15. OTHER (INCOME) EXPENSES, NET

"Other (income) expenses, net" is comprised of the following (in millions).

		Three Months En	ded Sep	ptember 30,	Six Months Ende	ed September 30,		
		2019		2018	2019		2018	
Currency (gains) losses, net (A)	\$	1	\$	_	\$ 2	\$	_	
Unrealized (gains) losses on change in fair value of derivative instruments, net (B)	t	(3)		(1)	(9)		3	
Realized (gains) losses on change in fair value of derivative instruments, net (B)		1		(13)	8		1	
(Gain) loss on sale of assets, net		(1)		(1)	(2)		2	
Loss on Brazilian tax litigation, net (C)		1		1	1		1	
Interest income		(3)		(2)	(6)		(5)	
Non-operating net periodic benefit cost		8		8	15		16	
Other, net		(2)		2	(3)		5	
Other (income) expenses, net	\$	2	\$	(6)	\$ 6	\$	23	

⁽A) See Note 11 — Currency (Gains) Losses for further details.

⁽B) See Note 12 — Financial Instruments and Commodity Contracts for further details.
(C) See Note 17 — Commitments and Contingencies for further details.

16. INCOME TAXES

For the three and six months ended September 30, 2019, we had effective tax rates of 27% and 30%, respectively. For the three and six months ended September 30, 2018, we had effective tax rates of 36% and 32%, respectively. These tax rates are primarily due to the results of operations taxed at foreign statutory tax rates that differ from the 25% Canadian tax rate, including withholding taxes, also driven by changes in valuation allowances and certain other non-deductible expenses, offset by tax credits.

As of September 30, 2019, we had a net deferred tax liability of \$112 million. This amount included gross deferred tax assets of approximately \$1.1 billion and a valuation allowance of \$744 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 authorities continue to examine certain of our tax filings for fiscal years 2005 through 2018. As a result of audit settlements, 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 decrease in the next twelve months by an amount up to approximately \$5 million.

Novelis Inc. NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (unaudited) -

17. 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 \$75 million. This estimated aggregate range of reasonably possible losses is based upon currently available information. The Company's estimates involve significant judgment, and 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 September 30, 2019 and March 31, 2019 were approximately \$9 million. Of the total \$9 million at September 30, 2019, \$7 million was associated with restructuring actions and the remaining \$2 million is associated with undiscounted environmental clean-up costs. As of September 30, 2019, \$5 million is included in "Accrued expenses and other current liabilities" and the remaining 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. Total settlement liabilities as of September 30, 2019 and March 31, 2019 were \$37 million and \$44 million, respectively. As of September 30, 2019, \$7 million is included in "Accrued expenses and other current liabilities" and the remaining 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 \$23 million as of September 30, 2019 and March 31, 2019. As of September 30, 2019, \$2 million is included in "Accrued expenses and other current liabilities" and the remaining 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, partially offset by interest earned on the cash deposit is reported as "Loss on Brazilian tax litigation, net" in Note 15 — Other (Income) Expenses.

For additional information, please refer to our Form 10-K for the year ended March 31, 2019.

Novelis Inc. NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (unaudited) -

18. SEGMENT, MAJOR CUSTOMER AND MAJOR SUPPLIER INFORMATION

Segment Information

Due in part to the regional nature of 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.

The following is a description of our operating segments:

North America. Headquartered in Atlanta, Georgia, this segment operates eight plants, including two fully dedicated recycling facilities and two facilities with recycling operations, in two countries.

Europe. Headquartered in Küsnacht, Switzerland, this segment operates ten plants, including two fully dedicated recycling facilities and three facilities with recycling operations, in four countries.

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

South America. Headquartered in Sao Paulo, Brazil, this segment comprises power generation operations, and operates two plants, including a facility with recycling operations, in Brazil.

Net sales and expenses are measured in accordance with the policies and procedures described in Note 1 — Business and Summary of Significant Accounting Policies shown in our Form 10-K for the year ended March 31, 2019.

We measure the profitability and financial performance of our operating segments based on segment income. Segment income provides a measure of our underlying segment results that is in line with our approach to risk management. We define segment income 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 segment income; (e) impairment of goodwill; (f) gain or loss on extinguishment of debt; (g) noncontrolling interest's share; (h) adjustments to reconcile our proportional share of segment income from non-consolidated affiliates to income as determined on the equity method of accounting; (i) "restructuring and impairment, 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) provision or benefit for taxes on income (loss); (o) cumulative effect of accounting change, net of tax; (p) metal price lag; and (q) business acquisition and other integration related costs.

The tables below show selected segment financial information (in millions). The "Eliminations and Other" column in the table below 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 6 — Consolidation and Note 7 — 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.

${\bf Novelis~Inc.}$ NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (unaudited) -

Selected Segment Financial Information

September 30, 2019		North America		Europe		Asia		South America]	Eliminations and Other		Total
Investment in and advances to non-consolidated	_					• • •	_				Φ.	
affiliates	\$	_	\$	468	\$	300	\$		\$	_	\$	768
Total assets	\$	3,261	\$	2,893	\$	1,589	\$	1,566	\$	268	\$	9,577
March 31, 2019		North America		Europe		Asia		South America		Eliminations and Other		Total
Investment in and advances to non-consolidated affiliates	\$		\$	478	\$	314	\$		\$		\$	792
Total assets	\$	2,918	\$	2,872	\$	1,717	\$		\$	225	\$	9,563
Selected Operating Results Three Months Ended	Ť	_,,	*	_, -, -	•	-,, -,		-,		Eliminations and	•	
September 30, 2019	_	North America	Φ.	Europe	Φ.	Asia	Φ.	South America	Φ.	Other	Φ.	Total
Net sales-third party	\$	1,070	\$	770	\$	478	\$		\$	76	\$	2,851
Net sales-intersegment	_			38		3		13		(54)		
Net sales	\$	1,070	\$	808	\$	481	\$	470	\$	22	\$	2,851
Depreciation and amortization	\$	38	\$	28	\$	15	\$	17	\$	(10)	\$	88
Income tax provision	\$	11	\$	(3)	\$	5	\$	28	\$	4	\$	45
Capital expenditures	\$	72	\$	13	\$	34	\$	19	\$	_	\$	138
Selected Operating Results Three Months Ended September 30, 2018		North America		Europe		Asia		South America		Climinations and Other		Total
Net sales-third party	\$	1,211	\$	832	\$	517	\$	512	\$	64	\$	3,136
Net sales-intersegment	Ψ	1,211	Ψ	31	Ψ	8	Ψ	6	Ψ	(46)	Ψ	
Net sales	\$	1,212	\$	863	\$	525	\$	518	\$	18	\$	3,136
1.00 0010	=	1,212	Ψ				Ψ.		<u> </u>		<u> </u>	3,120
Depreciation and amortization	\$	37	\$	29	\$	16	\$	16	\$	(12)	\$	86
Income tax provision	\$	18	\$	4	\$	6	\$	33	\$	3	\$	64
Capital expenditures	\$	28	\$	14	\$	9	\$	11	\$	(2)	\$	60
Selected Operating Results Six Months Ended September 30, 2019		North America		Europe		Asia		South America]	Eliminations and Other		Total
Net sales-third party	\$	2,186	\$	1,522	\$	990	\$		\$	154	\$	5,776
Net sales-intersegment		_		84		5		25		(114)		_
Net sales	\$	2,186	\$	1,606	\$	995	\$	949	\$	40	\$	5,776
Depreciation and amortization	\$	76	\$	57	\$	31	\$	33	\$	(21)	\$	176
Income tax provision	\$	28	\$	_	\$	13	\$	55	\$	12	\$	108
Capital expenditures	\$	164	\$	23	\$	72	\$	38	\$	3	\$	300
Selected Operating Results Six Months Ended September									1	Eliminations and		
30, 2018		North America		Europe		Asia		South America		Other		Total
Net sales-third party	\$	2,332	\$	1,685	\$	1,059	\$,	\$	127	\$	6,233
Net sales-intersegment	_	1		46		16		16		(79)		
Net sales	\$	2,333	\$	1,731	\$	1,075	\$	1,046	\$	48	\$	6,233
Depreciation and amortization	\$	74	\$	56	\$	33	\$	33	\$	(24)	\$	172
Income tax provision	\$	32	\$	8	\$	12	\$		\$	8	\$	117
Capital expenditures	\$	50	\$	30	\$	11	\$		\$	2	\$	114
Capital Orpolation	Ψ	50	Ψ	50	Ψ	- 11	φ	21	Ψ	<u> </u>	Ψ	117
				39								

Novelis Inc. NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (unaudited) -

The table below displays the reconciliation from "Net income attributable to our common shareholder" to segment income from reportable segments (in millions).

	Thi	ee Months En	ded Septe	mber 30,	Six Months End	ded September 30,		
		2019	:	2018	2019		2018	
Net income attributable to our common shareholder	\$	123	\$	116	\$ 250	\$	253	
Noncontrolling interest		_		_	_		_	
Income tax provision		45		64	108		117	
Depreciation and amortization		88		86	176		172	
Interest expense and amortization of debt issuance costs		61		68	126		134	
Adjustment to reconcile proportional consolidation		14		15	29		31	
Unrealized (gains) losses on change in fair value of derivative instruments, net		(3)		(1)	(9)		3	
Realized (gains) losses on derivative instruments not included in segment income		1		(1)	3		(1)	
Restructuring and impairment, net		32		_	33		1	
(Gain) loss on sale of fixed assets		(1)		(1)	(2)		2	
Metal price lag		5		(1)	7		(34)	
Business acquisition and other integration related costs		12		8	29		10	
Other, net		(3)		2	(4)		1	
Total of reportable segments	\$	374	\$	355	\$ 746	\$	689	

[&]quot;Business acquisition and other integration related costs" are primarily legal and professional fees associated with our proposed acquisition of Aleris. The acquisition is subject to closing conditions and regulatory approvals.

The table below displays segment income from reportable segments by region (in millions).

	Three Months Ended September 30,					Six Months End	ed Sep	tember 30,
		2019		2018		2019		2018
North America	\$	171	\$	151	\$	341	\$	270
Europe		60		59		113		122
Asia		46		47		99		102
South America		97		98		193		195
Total of reportable segments	\$	374	\$	355	\$	746	\$	689

[&]quot;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 provision."

[&]quot;Realized (gains) losses on derivative instruments not included in segment income" represents foreign currency derivatives not related to operations.

[&]quot;Other, net" is related primarily to losses on certain indirect tax expenses in Brazil and interest income.

$Novel is\ Inc.$ NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (unaudited) -

Information about Product Sales, Major Customers and Primary Supplier

Product Sales

The following table displays our Net sales by value stream (in millions).

	Three Months Ended September 30,					ix Months End	led Sept	ember 30,
		2019		2018		2019		2018
Can	\$	1,591	\$	1,651	\$	3,178	\$	3,340
Automotive		672		771		1,381		1,497
Specialty (and other)		588		714		1,217		1,396
Net sales	\$	2,851	\$	3,136	\$	5,776	\$	6,233

Major Customers

The following table displays net sales to customers representing 10% or more of our total "Net sales."

Three Months End	ded September 30,	Six Months Ende	ed September 30,
2019	2018	2019	2018
23%	22%	22%	23%
10%	11%	10%	10%

Primary Supplier

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

_	Three Months End	ed September 30,	Six Months Ende	d September 30,
	2019	2018	2019	2018
Purchases from RT as a percentage of total combined metal purchases	11%	10%	11%	10%

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 Quarterly Report 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

Novelis is the leading producer of flat-rolled aluminum products and the world's largest recycler of aluminum. Driven by our purpose to shape a sustainable world together, we work alongside our customers to provide innovative solutions to the beverage can, automotive and specialty markets (includes foil packaging, certain transportation products, architectural, industrial, and consumer durables). We have recycling operations in many of our plants to recycle both post-consumer aluminum and post-industrial aluminum. As of September 30, 2019, we had manufacturing operations in nine countries on four continents, which include 23 operating plants, and recycling operations in twelve of these plants.

In this Quarterly Report on Form 10-Q, unless otherwise specified, the terms "we," "our," "us," "Company," and "Novelis" refer to Novelis Inc., a company incorporated in Canada under the Canadian Business Corporations Act (CBCA) and its subsidiaries. References herein to "Hindalco" refer to Hindalco Industries Limited, our indirect parent company, which acquired Novelis in May 2007, through its indirect wholly-owned subsidiary, AV Metals Inc., our direct parent company.

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

References to our Form 10-K made throughout this document refer to our Form 10-K for the year ended March 31, 2019, filed with the United States Securities and Exchange Commission (SEC) on May 8, 2019.

HIGHLIGHTS

Three Months Ended September 30, 2019 Compared to the Three Months Ended September 30, 2018

We reported "Net income attributable to our common shareholder" of \$123 million, an increase of 6% compared to \$116 million in the prior comparable period. We reported segment income of \$374 million, an increase of 5% compared to \$355 million in the prior comparable period. Our strong operational performance was driven by a 3% increase in flat rolled product shipments, as well as favorable price and product mix partially offset by less favorable recycling benefits due to lower average LME aluminum prices. Further, these factors drove net cash provided by operating activities to \$297 million compared to \$210 million, an improvement of \$87 million over the prior comparable period.

During the second quarter of fiscal 2020, we announced plans to cease operations at a foil plant in Germany to further optimize our product portfolio, which led to the recognition of \$32 million in severance and other related expenses. See Note 3 — Restructuring and Impairment. During the quarter, we completed a \$14 million expansion project at our Yeongju Recycling Center, providing the facility with increased production capacity and cost competitiveness with higher usage of recycled contents. We also introduced the AdvanzTM 6HS-s650, an engineered aluminum automotive body sheet product that exceeds industry standards for strength, lightweighting, formability, performance and structural integrity. This latest offering, which we expect to release globally within the next three years, can be recycled into new high-strength aluminum products as part of a closed-loop recycling process. Additionally, our strategic investments continue to progress with construction well underway in Guthrie, Kentucky, Changzhou, China, and Pindamonhangaba (Pinda), Brazil.

In fiscal 2019, we entered into an agreement to acquire Aleris Corporation (Aleris), a global supplier of rolled aluminum products. The acquisition continues to progress and is expected to close by the outside date under the merger agreement, which is in the fourth quarter of fiscal 2020 (first quarter of calendar year 2020), subject to regulatory approvals and customary closing conditions.

On September 4, 2019, the United States Department of Justice (DOJ) filed a civil antitrust lawsuit to block our proposed acquisition of Aleris. Contemporaneously with the lawsuit, the DOJ also announced an agreement with us to resolve the antitrust issues through binding arbitration. The agreement includes a timetable and process for resolving the DOJ's concerns and closing the transaction by the outside date under the merger agreement (prior to completion of the arbitration). Depending on the outcome of the arbitration, we may be required to divest Aleris' Lewisport, Kentucky manufacturing plant after closing our purchase of Aleris.

On October 1, 2019, the European Commission (EC) announced its approval of our proposed acquisition of Aleris, conditioned on the divestiture of certain automotive assets in Europe. The EC's approval of the transaction is also subject to its approval of the proposed buyer of the divested assets.

Our application for antitrust approval of the proposed acquisition is also under review by the State Administration for Market Regulation in China.

BUSINESS AND INDUSTRY CLIMATE

Economic growth, material substitution, and sustainability, including environmental awareness around polyethylene terephthalate (PET) plastics, continue to drive increasing global demand for aluminum and rolled products. With the exception of China where can sheet overcapacity and strong competition remains, favorable market conditions and increasing customer preference for sustainable packaging options is driving higher demand for infinitely recyclable aluminum beverage cans and bottles. In fiscal 2019, we announced plans to expand rolling, casting and recycling capability in Pinda, Brazil to support this demand.

Meanwhile, the demand for aluminum in the automotive industry continues to grow, which drove the investments we made in our automotive sheet finishing capacity in North America, Europe and Asia in recent years, and is driving our additional investments in Guthrie, Kentucky (U.S.) and Changzhou, China. This demand has been primarily driven by the benefits that result from using lightweight aluminum in vehicle structures and components, as companies respond to stricter government emissions and fuel economy regulations, while maintaining or improving vehicle safety and performance, resulting in increased competition with high-strength steel. Further, we signed a definitive agreement to acquire Aleris, which would further diversify our global footprint and product portfolio. The acquisition continues to progress and is expected to close by the outside date under the merger agreement, which is in the fourth quarter of fiscal 2020 (first quarter of calendar year 2020), subject to regulatory approvals and customary closing conditions.

Key Sales and Shipment Trends

(in millions, except percentages and shipments, which are in kt)			Three Mor	ths En	ded			Yea	ar Ended	Three Months Ended			
	June 30, 20	18	Sept 30, 2018	Dec	31, 2018	March 31,	2019	Marc	ch 31, 2019	June 30, 2019	Sept 30, 2019		
Net sales	\$ 3,09	7 \$	3,136	\$	3,009	\$ 3,0)84	\$	12,326	\$ 2,925	\$ 2,851		
Percentage increase in net sales versus comparable previous year period	1	5 %	12 %		3 %		1%		8 %	(6)%	(9)%		
Rolled product shipments:													
North America	27-	4	295		279	2	294		1,142	289	286		
Europe	23:	2	229		211	2	246		918	234	245		
Asia	17:	5	168		182	1	198		723	184	177		
South America	12	5	126		142	1	143		537	139	141		
Eliminations	(1	0)	(11)		(14)		(11)		(46)	(16)	(14)		
Total	79	7	807		800	8	370		3,274	830	835		
The following summarizes the percentage increase (decrease) in rolled product	shipments versu	s the con	nparable previous	year p	eriod:								
North America	_	- %	8 %		4 %		8%		5 %	5 %	(3)%		
Europe	(1)%	(3)%		(5)%		4%		(1)%	1 %	7 %		
Asia	(3)%	(7)%		3 %		14%		2 %	5 %	5 %		
South America	1:	5 %	(4)%		(3)%		5%		3 %	10 %	12 %		
Total		2 %	1 %		1 %		8%		3 %	4 %	3 %		

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: (i) a base aluminum price quoted off the London Metal Exchange (LME); (ii) a local market premium; and (iii) 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. The local market premiums 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 local market premiums to our customers which are recorded through "Net sales." In Asia we purchase our metal inputs based on the LME and incur a local market premium; however, many of our competitors in this region price their metal off the Shanghai Futures Exchange, which does not include a local market premium, making it difficult for us to fully pass through this component of our metal input cost to some of our customers.

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:

	Th	ree Months E	nded S	eptember 30,	Percent		ix Months End	led S	eptember 30,	Percent
		2019		2018	Change		2019		2018	Change
London Metal Exchange Prices										
Aluminum (per metric tonne, and presented in U.S. dollars):										
Closing cash price as of beginning of period	\$	1,774	\$	2,183	(19)%	\$	1,900	\$	1,997	(5)%
Average cash price during the period	\$	1,761	\$	2,056	(14)%	\$	1,777	\$	2,157	(18)%
Closing cash price as of end of period	\$	1,704	\$	2,012	(15)%	\$	1,704	\$	2,012	(15)%

The weighted average local market premium are as follows:

	T	hree Months Er	ided S	eptember 30,	Percent	S	Six Months End	led Sej	ptember 30,	Percent
		2019		2018	Change		2019		2018	Change
Weighted average Local Market Premium (per metric tonne, a	ınd									
presented in U.S. dollars)	\$	239	\$	280	(15)%	\$	241	\$	293	(18)%

Metal Price Lag and Related Hedging Activities

Increases or decreases in the price of aluminum based on the average LME base aluminum prices and local market premiums 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. The majority of our local market premium hedging occurs in North America depending on market conditions; however, exposure here is not fully hedged. In our Europe, Asia and South America regions, the derivative market for local market premiums is not robust or efficient enough for us to offset the impacts of LMP price movements beyond a small volume. As a consequence, volatility in local market premiums 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 before income taxes" and "Net income." Gains and losses on metal derivative contracts are not recognized in segment income 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 as 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:

			Average Excha	inge Rate	Average Exchange Rate					
			Three Month	s Ended	Six Months	Ended				
	Exchange	Rate as of	September	r 30,	September 30,					
	September 30, 2019	March 31, 2019	2019	2018	2019	2018				
U.S. dollar per euro	1.090	1.123	1.102	1.165	1.113	1.173				
Brazilian real per U.S. dollar	4.164	3.897	4.023	3.965	3.964	3.828				
South Korean won per U.S. dollar	1,201	1,138	1,200	1,113	1,184	1,103				
Canadian dollar per U.S. dollar	1.324	1.336	1.322	1.300	1.328	1.299				
Swiss franc per euro	1.088	1.118	1.093	1.139	1.109	1.154				

Exchange rate movements have an impact on our operating results. In Europe, where we have predominantly 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 and cross-currency swaps 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 OPERATIONS

Three Months Ended September 30, 2019 Compared to the Three Months Ended September 30, 2018

"Net sales" were \$2,851 million, a decrease of 9%. The 3% increase in flat rolled product shipments was offset by a 14% decrease in average base aluminum prices.

"Cost of goods sold (exclusive of depreciation and amortization)" was \$2,348 million, a decrease of 12%, and was also attributable to decreases in average base aluminum prices. Additionally, total metal input costs included in "Cost of goods sold (exclusive of depreciation and amortization)" decreased \$297 million over the prior period.

"Income before income taxes" was \$168 million, compared to \$180 million in the prior period. In addition to the factors noted above, the following items affected "Income before income taxes:"

• "Restructuring and impairment, net" of \$32 million related to severance and impairment expenses associated with portfolio optimization efforts resulting in the closure of certain non-core operations in Europe. See Note 3 — Restructuring and Impairment.

We recognized \$45 million of tax expense for the three months ended September 30, 2019, which resulted in an effective tax rate of 27%. This tax rate is primarily due to the results of operations taxed at statutory tax rates that differ from the 25% Canadian tax rate, including withholding taxes. We recognized \$64 million of tax expense in the prior comparable period, which resulted in an effective tax rate of 36%. This tax rate was primarily due to the results of operations, including recording a valuation allowance for tax losses in jurisdictions where the company determined it more likely than not that the loss will not be utilized, and the favorable impact of the weakening Brazilian real.

We reported "Net income attributable to our common shareholder" of \$123 million and \$116 million for the three months ended September 30, 2019 and 2018, respectively, primarily as a result of the factors discussed above.

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 segment income, see Note 18 — Segment, 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, but we manage our Logan affiliate on a proportionately consolidated basis, and eliminate intersegment shipments (in kt).

Selected Operating Results Three Months Ended September 30, 2019	Nort	th America	Europe	Asia	South A	nerica	Eliminations an other	d	Total
Net sales	\$	1,070	\$ 808	\$ 481	\$ 470		\$ 22		\$ 2,851
Shipments (in kt):			 						
Rolled products - third party		286	237	176		136	_	_	835
Rolled products - intersegment		_	8	1		5	(1-	4)	_
Total rolled products		286	245	177		141	(1-	4)	835
Non-rolled products		11	7	1		27	(5)	41
Total shipments		297	252	178		168	(1	9)	876
Selected Operating Results Three Months Ended September 30, 2018	Nort	h America	 Europe	 Asia	South A	nerica	Eliminations an	d	Total
Selected Operating Results Three Months Ended September 30, 2018 Net sales	Nort	th America 1,212	\$ Europe 863	\$ Asia 525	South A	merica 518	other	d	\$ Total 3,136
	Nort		 	\$	South Ar		other		\$
Net sales	Nort		 	\$	South Ar		other		\$
Net sales Shipments (in kt):	Nort	1,212	 863	\$ 525	South Ar	518	other	8	\$ 3,136
Net sales Shipments (in kt): Rolled products - third party	Norte	1,212	 863	\$ 525 165	South Ar	518	**************************************	8 - 1)	\$ 3,136
Net sales Shipments (in kt): Rolled products - third party Rolled products - intersegment	Nort \$	1,212 295 —	 863 222 7	\$ 525 165 3	South Ar	518 125 1	**************************************	8 - 1)	\$ 3,136 807 —

The following table reconciles changes in segment income for the three months ended September 30, 2018 to the three months ended September 30, 2019 (in millions).

Changes in segment income	North	America	Europe	Asia	South America	E	liminations and other (A)	Total
Segment income - Three Months Ended September 30, 2018	\$	151	\$ 59	\$ 47	\$ 98	\$	_	\$ 355
Volume		(12)	18	6	16		(5)	23
Conversion premium and product mix		11	(12)	5	3		_	7
Conversion costs		14	2	(11)	(23)		4	(14)
Foreign exchange		1	(5)	2	4		_	2
Selling, general & administrative and research & development costs (B)		4	_	(3)	1		(2)	_
Other changes		2	(2)	_	(2)		3	1
Segment income - Three Months Ended September 30, 2019	\$	171	\$ 60	\$ 46	\$ 97	\$		\$ 374

⁽A) The recognition of segment income by a region on an intersegment shipment could occur in a period prior to the recognition of segment income 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 segment income for intersegment shipments that occur in a period prior to recognition of segment income 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.

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

North America

"Net sales" decreased \$142 million, or 12%, driven by a decrease in average base aluminum prices along with a decrease in specialty shipments. Segment income was \$171 million, an increase of 13%, primarily due to favorable price and product mix as well as favorable recycling benefits.

Europe

"Net sales" decreased \$55 million, or 6%, primarily driven by a decrease in average base aluminum prices partially offset by an increase in can and specialty shipments. Segment income was \$60 million, an increase of 2%, primarily due to higher specialty and can shipments partially offset by unfavorable product mix and foreign exchange impacts.

Asia

"Net sales" decreased \$44 million, or 8%, primarily driven by a decrease in average base aluminum prices, partially offset by higher can shipments. Segment income was \$46 million, a decrease of 2%, primarily due to less favorable recycling benefits primarily offset by increased volume.

South America

"Net sales" decreased \$48 million, or 9%, primarily driven by a decrease in average base aluminum prices partially offset by higher can shipments. Segment income was \$97 million, a decrease of 1%, primarily due to less favorable recycling benefits primarily offset by increased volume.

Six Months Ended September 30, 2019 Compared to the Six Months Ended September 30, 2018

"Net sales" were \$5,776 million, a decrease of 7%. The 4% increase in flat rolled product shipments was offset by a 18% decrease in average base aluminum prices.

"Cost of goods sold (exclusive of depreciation and amortization)" was \$4,762 million, a decrease of 9%, and was also due to decreases in average base aluminum prices. Additionally, total metal input costs included in "Cost of goods sold (exclusive of depreciation and amortization)" decreased \$462 million over the prior period.

"Income before income taxes" was \$358 million, compared to \$370 million in the comparable period. In addition to the factors noted above, the following items affected "Income before income taxes:"

- "Business acquisition and other integration related costs" of \$29 million related primarily to professional fees associated with the further progressed, proposed Aleris acquisition:
- "Restructuring and impairment, net" of \$33 million related to severance and impairments associated with the closure of certain non-core operations in Europe. See Note 3 Restructuring and Impairment; and
- Fluctuations in local market premiums resulted in \$7 million of unfavorable metal price lag compared to \$34 million of favorable metal price lag in the prior period.

We recognized \$108 million of tax expense for the six months ended September 30, 2019, which resulted in an effective tax rate of 30%. This tax rate is primarily due to the results of operations taxed at statutory tax rates that differ from the 25% Canadian tax rate, including withholding taxes. We recognized \$117 million of tax expense in the prior comparable period which resulted in an effective tax rate of 32%. This tax rate is primarily due to results of operations, including recording a valuation allowance for tax losses in jurisdictions where the company has determined it is more likely than not that the loss will not be utilized.

We reported "Net income attributable to our common shareholder" of \$250 million and \$253 million for the six months ended September 30, 2019 and 2018, respectively, primarily as a result of the factors discussed above.

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 segment income, see Note 18 — Segment, 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, but we manage our Logan affiliate on a proportionately consolidated basis, and eliminate intersegment shipments (in kt).

Selected Operating Results Six Months Ended September 30, 2019	Nor	th America	Europe	Asia	South America	Eliminations and other	1	Гotal
Net sales	\$	2,186	\$ 1,606	\$ 995	\$ 949	\$ 40	\$	5,776
Shipments								
Rolled products - third party		575	460	359	271	_		1,665
Rolled products - intersegment		_	19	2	9	(30)		_
Total rolled products		575	479	361	280	(30)		1,665
Non-rolled products		23	14	2	56	(12)		83
Total shipments		598	493	363	336	(42)		1,748

Selected Operating Results Six Months Ended September 30, 2018	Nor	th America	Europe	Asia		South America		Eliminations and other	Total
Net sales	\$	2,333	\$ 1,731	\$	1,075	\$	1,046	\$ 48	\$ 6,233
Shipments									
Rolled products - third party		569	450		338		247	_	1,604
Rolled products - intersegment		_	11		5		5	(21)	_
Total rolled products		569	 461		343		252	(21)	1,604
Non-rolled products		2	7		3		67	_	79
Total shipments		571	468		346		319	(21)	1,683

The following table reconciles changes in segment income for the six months ended September 30, 2018 to the six months ended September 30, 2019 (in millions).

Changes in segment income	Nort	h America	 Europe	Asia		South America		Eliminations and other (A)		Total
Segment income - Six Months Ended September 30, 2018	\$	270	\$ 122	\$ 102	\$	195	\$	_	\$	689
Volume		9	20	12		30		(15)		56
Conversion premium and product mix		43	(21)	6		9		2		39
Conversion costs		15	_	(14)		(49)		13		(35)
Foreign exchange		1	(7)	(1)		8		_		1
Selling, general & administrative and research & development costs (B)		_	(3)	(6)		1		(3)		(11)
Other changes		3	2	_		(1)		3		7
Segment income - Six Months Ended September 30, 2019	\$	341	\$ 113	\$ 99	\$	193	\$		\$	746

⁽A) The recognition of segment income by a region on an intersegment shipment could occur in a period prior to the recognition of segment income 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 segment income for intersegment shipments that occur in a period prior to recognition of segment income 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.

North America

"Net sales" decreased \$147 million, or 6%, driven by a decrease in average aluminum prices partially offset by increased volume. Segment income was \$341 million, an increase of 26%, primarily due to favorable price and product mix along with increased volume.

Europe

"Net sales" decreased \$125 million, or 7%, driven by lower average aluminum prices partially offset by increased specialty shipments. Segment income was \$113 million, a decrease of 7%, primarily due to unfavorable price and product mix partially offset by higher specialty shipments.

Asia

"Net sales" decreased \$80 million, or 7%, driven by lower average aluminum prices partially offset by increased can shipments. Segment income was \$99 million, a decrease of 3%, primarily driven by less favorable recycling benefits, partially offset by increased volume.

South America

"Net sales" decreased \$97 million, or 9%, driven by lower average aluminum prices partially offset by increased volume along with favorable price and product mix. Segment income was \$193 million, a decrease of 1%, primarily due to increased variable costs and less favorable recycling benefits, partially offset by increased volume.

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

Liquidity and Capital Resources

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. Most of our recent strategic expansion projects are operating close to full capacity and are generating additional operating cash flow. We expect to be able to fund our continued expansions, service our debt obligations, and provide 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. In April 2019, we amended our existing ABL Revolver facility in anticipation of incorporating Aleris' borrowing base following the proposed acquisition. The commitments under the pre-existing \$1 billion facility increased by \$500 million on October 15, 2019. The acquisition continues to progress and is expected to close by the outside date under the merger agreement, which is in the fourth quarter of fiscal 2020 (first quarter of calendar year 2020), subject to regulatory approvals and customary closing conditions.

Non-Guarantor Information

As of September 30, 2019, the Company's subsidiaries that are not guarantors represented the following approximate percentages of (a) "Net sales", (b) Adjusted EBITDA (segment income), and (c) "Total assets" of the Company, on a consolidated basis (including intercompany balances):

Item Description	Ratio
Net sales represented by Net sales to third parties by non-guarantor subsidiaries (for the six months ended September 30, 2019)	20%
Adjusted EBITDA represented by non-guarantor subsidiaries (for the six months ended September 30, 2019)	12%
Assets owned by non-guarantor subsidiaries (as of September 30, 2019)	16%

In addition, for the six months ended September 30, 2019 and 2018, the Company's subsidiaries that are not guarantors had net sales of \$1.4 billion, respectively, and, as of September 30, 2019, those subsidiaries had assets of \$2.1 billion and debt and other liabilities of \$1.3 billion (including inter-company balances).

Available Liquidity

Our available liquidity as of September 30, 2019 and March 31, 2019 is as follows (in millions).

	Septe	mber 30, 2019	March 31, 2019
Cash and cash equivalents	\$	935	\$ 950
Availability under committed credit facilities (A)		875	897
Total available liquidity	\$	1,810	\$ 1,847

⁽A) Our availability under committed credit facilities does not include the financing for Aleris.

The decrease in total available liquidity is primarily related to cash capital spending related to strategic investments, decreases in availability under committed credit facilities, partially offset by free cash flow of \$18 million. See Note 8 — Debt for more details about our availability under committed credit facilities.

The "Cash and cash equivalents" balance above includes cash held in foreign countries in which we operate. As of September 30, 2019, we held \$6 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 September 30, 2019, we held \$790 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 September 30, 2019, we do not believe adverse tax consequences exist that restrict our use of "Cash or cash equivalents" in a material manner.

Free Cash Flow

Refer to Non-GAAP Financial Measures for our definition of free cash flow.

The following table displays the free cash flow, the change between periods, as well as the ending balances of cash and cash equivalents (in millions).

	Six Months Ended September 30,				
		2019		2018	Change
Net cash provided by (used in) operating activities	\$	297	\$	210	\$ 87
Net cash provided by (used in) investing activities		(276)		(343)	67
Plus: Cash used in the acquisition of assets under a capital lease		_		239	(239)
Less: Proceeds from sales of assets and business, net of transaction fees, cash income taxes and hedging		(3)		(2)	(1)
Free cash flow	\$	18	\$	104	\$ (86)
Ending cash and cash equivalents	\$	935	\$	829	\$ 106

Operating Activities

The increase in "Net cash provided by operating activities" primarily relates to higher segment income primarily driven by increased shipments, favorable price and product mix, as well as other operational efficiencies. The net change in working capital was primarily driven by lower quantities of inventory.

Investing Activities

"Net cash used in investing activities" was primarily attributable to increased cash capital spending related to strategic investments and previously announced capacity expansions in Guthrie, Kentucky, Changzhou, China, and Pinda, Brazil. The prior period included a \$239 million cash outflow related to the acquisition of real and personal property that we historically leased at our Sierre, Switzerland rolling facility.

Financing Activities

During the six months ended September 30, 2019, we borrowed \$12 million of long term debt in China to fund capital expansion projects. We made principal repayments of \$9 million on our Term Loan Facility and \$2 million in finance leases and other repayments. The net cash repayments from our credit facilities balance are primarily related to payments of \$23 million on our China credit facility.

During the six months ended September 30, 2018 there were no issuances of long-term borrowings. We made principal repayments of \$27 million on Korean long-term debt, \$9 million on our Term Loan Facility, and \$4 million on finance leases and other obligations. The net cash proceeds from our credit facilities' balance is related to proceeds of \$94 million on our ABL Revolver and of \$9 million on our China credit facilities. We incurred \$2 million in debt issuance costs.

OFF-BALANCE SHEET ARRANGEMENTS

In accordance with SEC rules, the following qualify as off-balance sheet arrangements:

- · any obligation under certain derivative instruments;
- any obligation under certain guarantees or contracts;
- a retained or contingent interest in assets transferred to an unconsolidated entity or similar entity or similar arrangement that serves as credit, liquidity or market risk support to that entity for such assets; and
- any obligation under a material variable interest held by the registrant in an unconsolidated entity that provides financing, liquidity, market risk or credit risk support to the registrant, or engages in leasing, hedging or research and development services with the registrant.

The following discussion addresses the applicable off-balance sheet items for our Company.

Derivative Instruments

See Note 12 — Financial Instruments and Commodity Contracts to our accompanying unaudited condensed consolidated financial statements for a description of derivative instruments.

Guarantees of Indebtedness

We have issued guarantees on behalf of certain of our subsidiaries. The indebtedness guaranteed is for trade accounts payable to third parties and capital expenditures. Some of the guarantees have annual terms while others have no expiration and have termination notice requirements. Neither we nor any of our subsidiaries holds any assets of any third parties as collateral to offset the potential settlement of these guarantees. Since we consolidate wholly-owned and majority-owned subsidiaries in our condensed consolidated financial statements, all liabilities associated with trade payables and short-term debt facilities for these entities are already included in our condensed consolidated balance sheets.

Other Arrangements

Factoring of Trade Receivables

We factor trade receivables based on local cash needs, as well as attempting to balance the timing of cash flows of trade payables and receivables, fund strategic investments, and fund other business needs. Factored invoices are not included in our condensed consolidated balance sheets when we do not retain a financial or legal interest. If a financial or legal interest is retained, we classify these factorings as secured borrowings. However, no such financial or legal interests are currently retained.

Other

As part of our ongoing business, we do not participate in transactions that generate relationships with unconsolidated entities or financial partnerships, such as entities often referred to as special purpose entities (SPEs), which would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. As of September 30, 2019 and March 31, 2019, we are not involved in any unconsolidated SPE transactions.

CONTRACTUAL OBLIGATIONS

We have future obligations under various contracts relating to debt and interest payments, capital and operating leases, long-term purchase obligations, postretirement benefit plans and uncertain tax positions. See Note 8 — Debt to our accompanying condensed consolidated financial statements and "Contractual Obligations" of the Management's Discussion and Analysis of Financial Condition and Results of Operations section of our Form 10-K for the year ended March 31, 2019 for more details.

RETURN OF CAPITAL

Payments to our shareholder are at the discretion of the board of directors and will 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.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Except as otherwise disclosed in Note 1 — Business and Summary of Significant Accounting Policies related to the adoption of new accounting standards (including ASC 842 - Leases), there were no significant changes to our critical accounting policies and estimates as reported in our Form 10-K for the year ended March 31, 2019.

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 including the respective expected dates of adoption and expected effects on results of operations and financial condition.

NON-GAAP FINANCIAL MEASURES

Total segment income presents the sum of the results of our four operating segments on a consolidated basis. We believe that total segment income 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 to 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 segment income, 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 segment income is not a measurement of financial performance under U.S. GAAP, and our total segment income may not be comparable to similarly titled measures of other companies. Total segment income 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 segment income:

- · 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 and amortized.

We also use total segment income:

- 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.

Total segment income is equivalent to our Adjusted EBITDA, which we refer to in our earnings announcements and other external presentations to analysts and investors. Please see Note 18 — Segment, Major Customer and Major Supplier Information for our definition of segment income.

Free cash flow consists of: (a) "net cash provided by (used in) operating activities," (b) plus "net cash provided by (used in) investing activities" (c) plus cash used in the "Acquisition of assets under a capital lease", and (d) less "proceeds from sales of assets and business, net of transaction fees, cash income taxes and hedging." Management believes 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. Management also uses free cash flow to measure the profitability and financial performance of our business. However, free cash flow does not necessarily represent cash available for discretionary activities, as certain debt service obligations must be funded out of free cash flow. Our method of calculating free cash flow may not be consistent with that of other companies.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND MARKET DATA

Statements made in this Quarterly Report on Form 10-Q which describe Novelis' intentions, expectations, beliefs or predictions may be forward-looking within the meaning of securities laws. Forward-looking statements include statements preceded by, followed by, or including the words "believes," "expects," "anticipates," "plans," "estimates," "projects," "forecasts," or similar expressions. Examples of forward-looking statements in this Quarterly Report on Form 10-Q include, but are not limited to, statements about our expectation that we will be able to make strategic investments in capacity and R&D. Novelis cautions that, by their nature, forward-looking statements involve risk and uncertainty and Novelis' actual results could differ materially from those expressed or implied in such 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; the capacity and effectiveness of our hedging activities; 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; risks relating to, and our ability to consummate, pending and future acquisitions, investments or divestitures, including the proposed acquisition of Aleris Corporation; changes in the relative values of various currencies and the effectiveness of our currency hedging activities; 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; competition from other aluminum rolled products producers as well as from substitute materials such as steel, glass, plastic and composite materials; changes in general economic conditions including deterioration in the global economy: changes in government regulations, particularly those affecting taxes, derivative instruments, environmental, health or safety compliance; 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 our Form 10-K for the year-ended March 31, 2019 and see the following sections of the report: "Part I. Item 1A. Risk Factors," "Part II. Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Part II. Item 7. Critical Accounting Policies and Estimates."

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 and local market premiums), 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 manage our exposure to these and 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 effect on the fair values of these derivative instruments as of September 30, 2019, given a 10% change in prices (in millions).

	Change in Price	Change in Fair Value
Aluminum	10 %	\$ (65)
Copper	(10)%	\$ (1)
Energy		

The following table presents the estimated potential effect on the fair values of these derivative instruments as of September 30, 2019, given a 10% decline in spot prices for energy contracts (in millions).

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

Foreign Currency Exchange Risks

The following table presents the estimated potential effect on the fair values of these derivative instruments as of September 30, 2019, given a 10% change in rates (in millions).

	Change in Exchange Rate	Change in Fair Value		
Currency measured against the U.S. dollar				
Brazilian real	(10)%	\$	(42)	
Euro	10 %	\$	(13)	
South Korean won	(10)%	\$	(40)	
Canadian dollar	(10)%	\$	(4)	
British pound	(10)%	\$	(16)	
Swiss franc	(10)%	\$	(25)	
Chinese yuan	10 %	\$	(5)	

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 Securities Exchange Act of 1934, as amended (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 September 30, 2019.

Changes in Internal Control over Financial Reporting

During the quarter ended June 30, 2019, we implemented a new system and modified our internal controls to facilitate the adoption of ASU 2016-02, *Leases (Topic 842)*. The adoption of this standard did not have a material impact to the condensed consolidated statement of operations or the condensed consolidated statement of cash flows. There have been no other 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. For additional information regarding litigation to which we are a party, see Note 17 — Commitments and Contingencies to our accompanying condensed consolidated financial statements.

Item 1A. Risk Factors

See "Risk Factors" in Part I, Item 1A in our Form 10-K for the year ended March 31, 2019. There have been no material changes from the risk factors described in our Form 10-K for the year ended March 31, 2019.

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))
2.2	Agreement and Plan of Merger, dated as of July 26, 2018, among Novelis Inc., Novelis Acquisitions LLC, Aleris Corporation and OCM Opportunities ALS Holdings L.P. (incorporated by reference to Exhibit 2.1 to our Current Report on Form 8-K filed on July 26, 2018) (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 Amalgamation of Novelis Inc., dated March 31, 2016 (incorporated by reference to Exhibit 3.2 to our Annual Report on Form 10-K filed on May 10, 2016 (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 302 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	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase
101.DEF	XBRL Taxonomy Extension Definition Linkbase
101.LAB	XBRL Taxonomy Extension Label Linkbase
101.PRE	XBRL Taxonomy Extension Presentation Linkbase
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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

Vice President Finance and Controller (Principal Accounting Officer)

Date: November 6, 2019

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 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: November 6, 2019

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 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: November 6, 2019

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 September 30, 2019 (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: November 6, 2019

of this Report.

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

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 September 30, 2019 (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: November 6, 2019

of this Report.

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