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

FORM 10-Q

(Mark One)

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

For the Quarterly Period Ended June 30, 2022

OR

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

Commission File Number 1-3610

HOWMET AEROSPACE INC.
(Exact name of registrant as specified in its charter)

Delaware	25-0317820
(State of incorporation)	(I.R.S. Employer Identification No.)

201 Isabella Street, Suite 200, Pittsburgh, Pennsylvania 15212-5872
(Address of principal executive offices) (Zip code)

Investor Relations 412-553-1950
Office of the Secretary 412-553-1940
(Registrant's telephone number including area code)

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, par value $1.00 per share	**HWM**	**New York Stock Exchange**
$3.75 Cumulative Preferred Stock, par value $100.00 per share	**HWM PR**	**NYSE American**

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

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

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

Large accelerated filer	x	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

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

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

As of August 1, 2022, there were 415,403,018 shares of common stock, par value $1.00 per share, of the registrant outstanding.

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PART I – FINANCIAL INFORMATION

Item 1. Financial Statements and Supplementary Data.

Howmet Aerospace Inc. and subsidiaries
Statement of Consolidated Operations (unaudited)
(U.S. dollars in millions, except per-share amounts)

	Second quarter ended June 30,		Six months ended June 30,	
	2022	**2021**	**2022**	**2021**
Sales (C)	$ 1,393	$ 1,195	$ 2,717	$ 2,404
Cost of goods sold (exclusive of expenses below)	987	857	1,937	1,730
Selling, general administrative, and other expenses	83	55	152	120
Research and development expenses	9	4	16	9
Provision for depreciation and amortization	67	67	133	135
Restructuring and other charges (D)	6	5	8	14
Operating income	241	207	471	396
Loss on debt redemption (N)	2	23	2	23
Interest expense, net	57	66	115	138
Other (income) expense, net (F)	(1)	8	—	12
Income before income taxes	183	110	354	223
Provision for income taxes (G)	36	36	76	69
Net income	$ 147	$ 74	$ 278	$ 154
Amounts Attributable to Howmet Aerospace Common Shareholders (H):				
Net income	$ 147	$ 74	$ 277	$ 153
Earnings per share:				
Basic	$ 0.35	$ 0.17	$ 0.66	$ 0.35
Diluted	$ 0.35	$ 0.17	$ 0.66	$ 0.35
Average Shares Outstanding (H):				
Basic	417	432	418	433
Diluted	422	437	423	438

The accompanying notes are an integral part of the consolidated financial statements.

Howmet Aerospace Inc. and subsidiaries
Statement of Consolidated Comprehensive Income (unaudited)
(U.S. dollars in millions)

	Second quarter ended June 30,		Six months ended June 30,	
	2022	**2021**	**2022**	**2021**
Net income	$ 147	$ 74	$ 278	$ 154
Other comprehensive income (loss), net of tax (I):				
Change in unrecognized net actuarial loss and prior service cost related to pension and other postretirement benefits	22	35	32	77
Foreign currency translation adjustments	(114)	18	(145)	(26)
Net change in unrecognized (losses) gains on cash flow hedges	(36)	4	(16)	8
Total Other comprehensive (loss) income, net of tax	(128)	57	(129)	59
Comprehensive income	$ 19	$ 131	$ 149	$ 213

The accompanying notes are an integral part of the consolidated financial statements.

Howmet Aerospace Inc. and subsidiaries
Consolidated Balance Sheet (unaudited)
(U.S. dollars in millions)

	June 30, 2022	December 31, 2021
Assets		
Current assets:		
Cash and cash equivalents	$ 537	$ 720
Receivables from customers, less allowances of $— in 2022 and 2021 (J)	501	367
Other receivables (J)	49	53
Inventories (K)	1,563	1,402
Prepaid expenses and other current assets	187	195
Total current assets	2,837	2,737
Properties, plants, and equipment, net (L)	2,340	2,467
Goodwill	4,012	4,067
Deferred income taxes	118	184
Intangibles, net	534	549
Other noncurrent assets (M)	211	215
Total assets	$ 10,052	$ 10,219
Liabilities		
Current liabilities:		
Accounts payable, trade	$ 814	$ 732
Accrued compensation and retirement costs	198	198
Taxes, including income taxes	58	61
Accrued interest payable	75	74
Other current liabilities (M)	176	183
Short-term debt (N)	1	5
Total current liabilities	1,322	1,253
Long-term debt, less amount due within one year (N and O)	4,169	4,227
Accrued pension benefits (E)	710	771
Accrued other postretirement benefits (E)	150	153
Other noncurrent liabilities and deferred credits (M)	280	307
Total liabilities	6,631	6,711
Contingencies and commitments (Q)		
Equity		
Howmet Aerospace shareholders' equity:		
Preferred stock	55	55
Common stock	416	422
Additional capital	4,079	4,291
Retained earnings	863	603
Accumulated other comprehensive loss (I)	(1,992)	(1,863)
Total equity	3,421	3,508
Total liabilities and equity	$ 10,052	$ 10,219

The accompanying notes are an integral part of the consolidated financial statements.

Howmet Aerospace Inc. and subsidiaries
Statement of Consolidated Cash Flows (unaudited)
(U.S. dollars in millions)

	Six months ended June 30,	
	2022	**2021**
Operating activities		
Net income	$ 278	$ 154
Adjustments to reconcile net income to cash provided from operations:		
Depreciation and amortization	133	135
Deferred income taxes	52	15
Restructuring and other charges	8	14
Net realized and unrealized losses	7	4
Net periodic pension cost (E)	11	9
Stock-based compensation	29	14
Loss on debt redemption (N)	2	23
Other	27	23
Changes in assets and liabilities, excluding effects of acquisitions, divestitures, and foreign currency translation adjustments:		
Increase in receivables (J)	(169)	(231)
(Increase) decrease in inventories	(191)	19
Decrease in prepaid expenses and other current assets	1	10
Increase in accounts payable, trade	118	48
Decrease in accrued expenses	(40)	(93)
Increase in taxes, including income taxes	1	24
Pension contributions	(20)	(61)
Increase in noncurrent assets	(1)	(4)
Decrease in noncurrent liabilities	(33)	(24)
Cash provided from operations	213	79
Financing Activities		
Net change in short-term borrowings (original maturities of three months or less)	(4)	(1)
Payments on debt (original maturities greater than three months) (N)	(60)	(838)
Debt issuance costs (N)	—	(1)
Premiums paid on early redemption of debt (N)	(2)	(22)
Repurchase of common stock	(235)	(200)
Proceeds from exercise of employee stock options	10	15
Dividends paid to shareholders	(18)	(1)
Other	(22)	(20)
Cash used for financing activities	(331)	(1,068)
Investing Activities		
Capital expenditures (C)	(106)	(91)
Proceeds from the sale of assets and businesses	42	8
Sale of debt securities	—	5
Cash receipts from sold receivables (J)	—	172
Other	(1)	—
Cash (used for) provided from investing activities	(65)	94
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(1)	—
Net change in cash, cash equivalents and restricted cash	(184)	(895)
Cash, cash equivalents and restricted cash at beginning of period	722	1,611
Cash, cash equivalents and restricted cash at end of period	$ 538	$ 716

The accompanying notes are an integral part of the consolidated financial statements.

Howmet Aerospace Inc. and subsidiaries
Statement of Changes in Consolidated Equity (unaudited)
(U.S. dollars in millions, except per-share amounts)

	Howmet Aerospace Shareholders					
	Preferred stock	Common stock	Additional capital	Retained earnings	Accumulated other comprehensive loss	Total Equity
Balance at March 31, 2021	$ 55	$ 434	$ 4,671	$ 443	$ (1,941)	$ 3,662
Net income	—	—	—	74	—	74
Other comprehensive income (I)	—	—	—	—	57	57
Repurchase and retirement of common stock	—	(6)	(194)	—	—	(200)
Stock-based compensation	—	—	8	—	—	8
Common stock issued: compensation plans	—	1	(4)	—	—	(3)
Balance at June 30, 2021	$ 55	$ 429	$ 4,481	$ 517	$ (1,884)	$ 3,598

	Howmet Aerospace Shareholders					
	Preferred stock	Common stock	Additional capital	Retained earnings	Accumulated other comprehensive loss	Total Equity
Balance at March 31, 2022	$ 55	$ 418	$ 4,123	$ 725	$ (1,864)	$ 3,457
Net income	—	—	—	147	—	147
Other comprehensive loss (I)	—	—	—	—	(128)	(128)
Cash dividends declared:						
Common @ $0.02 per share	—	—	—	(9)	—	(9)
Repurchase and retirement of common stock	—	(2)	(58)	—	—	(60)
Stock-based compensation	—	—	18	—	—	18
Common stock issued: compensation plans	—	—	(4)	—	—	(4)
Balance at June 30, 2022	$ 55	$ 416	$ 4,079	$ 863	$ (1,992)	$ 3,421

The accompanying notes are an integral part of the consolidated financial statements.

Howmet Aerospace Inc. and subsidiaries
Statement of Changes in Consolidated Equity (unaudited)
(U.S. dollars in millions, except per-share amounts)

	Howmet Aerospace Shareholders					
	Preferred stock	Common stock	Additional capital	Retained earnings	Accumulated other comprehensive loss	Total Equity
Balance at December 31, 2020	$ 55	$ 433	$ 4,668	$ 364	$ (1,943)	$ 3,577
Net income	—	—	—	154	—	154
Other comprehensive income (I)	—	—	—	—	59	59
Cash dividends declared:						
Preferred-Class A @ $1.8750 per share	—	—	—	(1)	—	(1)
Repurchase and retirement of common stock	—	(6)	(194)	—	—	(200)
Stock-based compensation	—	—	14	—	—	14
Common stock issued: compensation plans	—	2	(7)	—	—	(5)
Balance at June 30, 2021	$ 55	$ 429	$ 4,481	$ 517	$ (1,884)	$ 3,598

	Howmet Aerospace Shareholders					
	Preferred stock	Common stock	Additional capital	Retained earnings	Accumulated other comprehensive loss	Total Equity
Balance at December 31, 2021	$ 55	$ 422	$ 4,291	$ 603	$ (1,863)	$ 3,508
Net income	—	—	—	278	—	278
Other comprehensive loss (I)	—	—	—	—	(129)	(129)
Cash dividends declared:						
Preferred-Class A @ $1.8750 per share	—	—	—	(1)	—	(1)
Common @ $0.04 per share	—	—	—	(17)	—	(17)
Repurchase and retirement of common stock	—	(7)	(228)	—	—	(235)
Stock-based compensation	—	—	29	—	—	29
Common stock issued: compensation plans	—	1	(13)	—	—	(12)
Balance at June 30, 2022	$ 55	$ 416	$ 4,079	$ 863	$ (1,992)	$ 3,421

The accompanying notes are an integral part of the consolidated financial statements.

Howmet Aerospace Inc. and subsidiaries
Notes to the Consolidated Financial Statements (unaudited)
(U.S. dollars in millions, except per-share amounts)

A. Basis of Presentation

The interim Consolidated Financial Statements of Howmet Aerospace Inc. and subsidiaries ("Howmet" or the "Company" or "we" or "our") are unaudited. These Consolidated Financial Statements include all adjustments, consisting only of normal recurring adjustments, considered necessary by management to fairly state the Company's results of operations, financial position, and cash flows. The results reported in these Consolidated Financial Statements are not necessarily indicative of the results that may be expected for the entire year. The 2021 year-end balance sheet data was derived from audited financial statements but does not include all disclosures required by accounting principles generally accepted in the United States of America ("GAAP"). This Form 10-Q report should be read in conjunction with the Company's Annual Report on Form 10-K for the year ended December 31, 2021, which includes all disclosures required by GAAP. Certain amounts in previously issued financial statements were reclassified to conform to the current period presentation.

In the second quarter of 2022, the Company derived approximately 45% of its revenue from products sold to the commercial aerospace market which is substantially less than the pre-pandemic 2019 annual rate of approximately 60%. Due to the global COVID-19 pandemic and its impact on the commercial aerospace industry to date, there has been a decrease in domestic and international air travel, which in turn has adversely affected demand for narrow-body and wide-body aircraft. Although domestic air travel is increasing, it still is below pre-pandemic 2019 levels on an average monthly basis. International travel also continues to be lower than pre-pandemic 2019 levels. Narrow-body demand is returning faster than wide-body demand and the commercial wide-body aircraft market is taking longer to recover, which is creating a shift in our product mix compared to pre-pandemic conditions. In addition to the impact from the pandemic, the timing and level of future aircraft builds by original equipment manufacturers are subject to changes and uncertainties, such as declines in Boeing 787 production rates due to delays in its recertification, which may cause our future results to differ from prior periods due to changes in product mix in certain segments.

The preparation of the Consolidated Financial Statements of the Company in conformity with GAAP requires management to make certain judgments, estimates, and assumptions. These estimates are based on historical experience and, in some cases, assumptions based on current and future market experience, including considerations relating to the impact of COVID-19 and changes in the aerospace industry as a result of the pandemic. The impact of these changes is rapidly changing and of unknown duration and macroeconomic impact and, as a result, these considerations remain highly uncertain. Management has made its best estimates using all relevant information available at the time, but it is possible that our estimates will differ from our actual results and affect the Consolidated Financial Statements in future periods and potentially require adverse adjustments to the recoverability of goodwill, intangible and long-lived assets, the realizability of deferred tax assets and other judgments and estimations and assumptions that may be impacted by COVID-19 and changes in the aerospace industry.

B. Recently Adopted and Recently Issued Accounting Guidance

Adopted

On January 1, 2021, the Company adopted changes issued by the Financial Accounting Standards Board ("FASB") that were intended to simplify various aspects of accounting for income taxes by eliminating certain exceptions contained in existing guidance and amending other guidance to simplify several other income tax accounting matters. The adoption of this new guidance did not have a material impact on the Consolidated Financial Statements.

Issued

In March 2020, the FASB issued amendments that provide optional expedients and exceptions for applying GAAP to contracts, hedging relationships, and other transactions affected by reference rate reform, if certain criteria are met. The amendments apply only to contracts and hedging relationships that reference London Inter-bank Offered Rate ("LIBOR") or another reference rate expected to be discontinued due to reference rate reform. These amendments are effective immediately and may be applied prospectively to contract modifications made and hedging relationships entered into or evaluated on or before December 31, 2022. Based upon the provisions of our agreements that were amended to date, management does not believe that the impact of these changes will have a material impact on the Consolidated Financial Statements.

C. Segment Information

Howmet is a global leader in lightweight metals engineering and manufacturing. Howmet’s innovative, multi-material products, which include nickel, titanium, aluminum, and cobalt, are used worldwide in the aerospace (commercial and defense), commercial transportation, and industrial and other markets. Segment performance under Howmet’s management reporting system is evaluated based on a number of factors; however, the primary measure of performance is Segment Adjusted EBITDA. Prior to the first quarter of 2022, the Company used Segment operating profit as its primary measure of performance. However, the Company’s Chief Executive Officer believes that Segment Adjusted EBITDA is now a better representation of its business because it provides additional information with respect to the Company’s operating performance and the Company’s ability to meet its financial obligations. Howmet’s definition of Segment Adjusted EBITDA (Earnings before interest, taxes, depreciation, and amortization) is net margin plus an add-back for depreciation and amortization. Net margin is equivalent to Sales minus the following items: Cost of goods sold; Selling, general administrative, and other expenses; Research and development expenses; and Provision for depreciation and amortization. Special items, including Restructuring and other charges, are also excluded from Net margin and Segment Adjusted EBITDA. Segment Adjusted EBITDA may not be comparable to similarly titled measures of other companies. Differences between the total segment and consolidated totals are in Corporate.

Howmet’s operations consist of four worldwide reportable segments as follows:

Engine Products

Engine Products produces investment castings, including airfoils, and seamless rolled rings primarily for aircraft engines and industrial gas turbines. Engine Products produces rotating parts as well as structural parts.

Fastening Systems

Fastening Systems produces aerospace fastening systems, as well as commercial transportation, industrial and other fasteners. The business’s high-tech, multi-material fastening systems are found nose to tail on aircraft and aero engines. Fastening Systems’ products are also critical components of commercial transportation vehicles, automobiles, construction and industrial equipment, and renewable energy sectors.

Engineered Structures

Engineered Structures produces titanium ingots and mill products for aerospace and defense applications and is vertically integrated to produce titanium forgings, extrusions, forming and machining services for airframe, wing, aero-engine, and landing gear components. Engineered Structures also produces aluminum forgings, nickel forgings, and aluminum machined components and assemblies for aerospace and defense applications.

Forged Wheels

Forged Wheels provides forged aluminum wheels and related products for heavy-duty trucks and the commercial transportation market.

The operating results of the Company's reportable segments were as follows:

	Engine Products		Fastening Systems		Engineered Structures		Forged Wheels		Total Segment	
Second quarter ended June 30, 2022										
Sales:										
Third-party sales	$	652	$	277	$	185	$	279	$	1,393
Inter-segment sales		1		—		1		—		2
Total sales	$	653	$	277	$	186	$	279	$	1,395
Profit and loss:										
Provision for depreciation and amortization	$	31	$	11	$	12	$	10	$	64
Segment Adjusted EBITDA		179		56		26		75		336
Restructuring and other charges		4		—		1		—		5
Capital expenditures		24		8		2		5		39
Second quarter ended June 30, 2021										
Sales:										
Third-party sales	$	544	$	262	$	160	$	229	$	1,195
Inter-segment sales		1		—		2		—		3
Total sales	$	545	$	262	$	162	$	229	$	1,198
Profit and loss:										
Provision for depreciation and amortization	$	30	$	13	$	13	$	9	$	65
Segment Adjusted EBITDA		130		63		24		70		287
Restructuring and other charges		5		3		—		—		8
Capital expenditures		16		9		5		13		43

	Engine Products		Fastening Systems		Engineered Structures		Forged Wheels		Total Segment	
Six months ended June 30, 2022										
Sales:										
Third-party sales	$	1,283	$	541	$	367	$	526	$	2,717
Inter-segment sales		2		—		2		—		4
Total sales	$	1,285	$	541	$	369	$	526	$	2,721
Profit and loss:										
Provision for depreciation and amortization	$	62	$	23	$	24	$	20	$	129
Segment Adjusted EBITDA		352		112		49		142		655
Restructuring and other charges (credits)		7		(3)		3		—		7
Capital expenditures		51		23		9		14		97
Six months ended June 30, 2021										
Sales:										
Third-party sales	$	1,078	$	534	$	336	$	456	$	2,404
Inter-segment sales		2		—		3		—		5
Total sales	$	1,080	$	534	$	339	$	456	$	2,409
Profit and loss:										
Provision for depreciation and amortization	$	61	$	25	$	25	$	19	$	130
Segment Adjusted EBITDA		262		120		46		150		578
Restructuring and other charges		10		5		1		—		16
Capital expenditures		27		14		10		22		73

The following table reconciles Total Segment Adjusted EBITDA to Income before income taxes:

	Second quarter ended June 30,		Six months ended June 30,	
	2022	2021	2022	2021
Total Segment Adjusted EBITDA	$ 336	$ 287	$ 655	$ 578
Segment provision for depreciation and amortization	(64)	(65)	(129)	(130)
Unallocated amounts:				
Restructuring and other charges	(6)	(5)	(8)	(14)
Corporate expense	(25)	(10)	(47)	(38)
Operating income	$ 241	$ 207	$ 471	$ 396
Loss on debt redemption	(2)	(23)	(2)	(23)
Interest expense, net	(57)	(66)	(115)	(138)
Other income (expense), net	1	(8)	—	(12)
Income before income taxes	$ 183	$ 110	$ 354	$ 223

Differences between the total segment and consolidated totals are in Corporate. The following table reconciles total segment capital expenditures with Capital expenditures as presented in the Statement of Consolidated Cash Flows:

	Second quarter ended June 30,		Six months ended June 30,	
	2022	2021	2022	2021
Total segment capital expenditures	$ 39	$ 43	$ 97	$ 73
Corporate	5	(7)	9	18
Capital expenditures	$ 44	$ 36	$ 106	$ 91

The following table disaggregates segment revenue by major market served. Differences between the total segment and consolidated totals are in Corporate.

	Engine Products	Fastening Systems	Engineered Structures	Forged Wheels	Total Segment
Second quarter ended June 30, 2022					
Aerospace - Commercial	$ 362	$ 155	$ 108	$ —	$ 625
Aerospace - Defense	123	37	63	—	223
Commercial Transportation	—	53	—	279	332
Industrial and Other	167	32	14	—	213
Total end-market revenue	$ 652	$ 277	$ 185	$ 279	$ 1,393
Second quarter ended June 30, 2021					
Aerospace - Commercial	$ 260	$ 129	$ 79	$ —	$ 468
Aerospace - Defense	121	41	64	—	226
Commercial Transportation	—	49	—	229	278
Industrial and Other	163	43	17	—	223
Total end-market revenue	$ 544	$ 262	$ 160	$ 229	$ 1,195
Six months ended June 30, 2022					
Aerospace - Commercial	$ 691	$ 303	$ 217	$ —	$ 1,211
Aerospace - Defense	260	69	120	—	449
Commercial Transportation	—	106	—	526	632
Industrial and Other	332	63	30	—	425
Total end-market revenue	$ 1,283	$ 541	$ 367	$ 526	$ 2,717
Six months ended June 30, 2021					
Aerospace - Commercial	$ 487	$ 277	$ 159	$ —	$ 923
Aerospace - Defense	272	83	141	—	496
Commercial Transportation	—	95	—	456	551
Industrial and Other	319	79	36	—	434
Total end-market revenue	$ 1,078	$ 534	$ 336	$ 456	$ 2,404

The Company derived 61% and 59% of its revenue from the aerospace market for the six months ended June 30, 2022 and 2021, respectively.

General Electric Company represented approximately 13% and 12% of the Company's third-party sales for the six months ended June 30, 2022 and 2021, respectively, primarily from Engine Products.

D. Restructuring and Other Charges

	Second quarter ended June 30,		Six months ended June 30,	
	2022	2021	2022	2021
Layoff costs	$ —	$ 2	$ —	$ 2
Reversals of previously recorded layoff reserves	—	(2)	(1)	(1)
Pension and Other post-retirement benefits - net settlements (E)	3	3	4	6
Non-cash asset impairments	—	4	—	4
Net loss related to divestitures of assets and businesses (P)	—	—	—	4
Other	3	(2)	5	(1)
Restructuring and other charges	$ 6	$ 5	$ 8	$ 14

In the second quarter of 2022, the Company recorded Restructuring and other charges of $6, which were primarily due to charges for U.S. pension plan settlements of $3 and exit related costs, including accelerated depreciation, of $3.

In the six months ended June 30, 2022, the Company recorded Restructuring and other charges of $8, which were primarily due to exit related costs, including accelerated depreciation, of $5 and charges for U.S. pension plan settlements of $4, partially offset by a reversal of $1 for a layoff reserve related to a prior period.

In the second quarter and six months ended June 30, 2021, the Company recorded Restructuring and other charges of $5 and $14, respectively, which was primarily due to charges for pension plan settlements and exit related costs.

	Layoff costs	Other exit costs	Total
Reserve balances at December 31, 2021	$ 17	$ 2	$ 19
Cash payments	(8)	(4)	(12)
Restructuring charges	3	5	8
Other[1]	(4)	(1)	(5)
Reserve balances at June 30, 2022	$ 8	$ 2	$ 10

(1) In the six months ended June 30, 2022, Other for layoff costs included a $4 charge for U.S. pension plan settlements and Other exit costs included a $1 charge for accelerated depreciation.

The majority of the layoff cost and other exit cost reserves is expected to be paid in cash during 2022 and 2023, with small amounts to be paid through 2024.

E. Pension and Other Postretirement Benefits

The components of net periodic cost (benefit) were as follows:

	Second quarter ended June 30,		Six months ended June 30,	
	2022	2021	2022	2021
Pension benefits				
Service cost	$ 1	$ 1	$ 2	$ 2
Interest cost	13	12	25	24
Expected return on plan assets	(21)	(23)	(41)	(46)
Recognized net actuarial loss	12	15	25	29
Settlements	3	3	4	6
Net periodic cost[1]	$ 8	$ 8	$ 15	$ 15
Other postretirement benefits				
Service cost	$ 1	$ 1	$ 1	$ 1
Interest cost	1	2	2	3
Recognized net actuarial loss	1	—	1	—
Amortization of prior service benefit	(3)	(3)	(5)	(4)
Net periodic benefit[1]	$ —	$ —	$ (1)	$ —

(1) Service cost was included within Cost of goods sold, Selling, general administrative, and other expenses, and Research and development expenses; settlements were included in Restructuring and other charges; and all other cost components were recorded in Other (income) expense, net in the Statement of Consolidated Operations.

Pension benefits

The Company applied settlement accounting to certain U.S. pension plans due to lump sum payments made to participants, which resulted in settlement charges of $3 and $4 in the second quarter and six months ended June 30, 2022, respectively, and $3 and $6 in the second quarter and six months ended June 30, 2021, respectively, that were recorded in Restructuring and other charges in the Statement of Consolidated Operations.

On March 11, 2021, the American Rescue Plan Act of 2021 (“ARPA 2021”) was signed into law in the United States. ARPA 2021, in part, provides temporary relief for employers who sponsor defined benefit pension plans related to funding contributions under the Employee Retirement Income Security Act of 1974. For the second quarter and six months ended

June 30, 2022, Howmet's combined pension contributions and other postretirement benefit payments were approximately $12 and $25, respectively. For the second quarter and six months ended June 30, 2021, Howmet's combined pension contributions and other postretirement benefit payments were approximately $36 and $69, respectively.

Other postretirement benefits

In the first quarter of 2021, the Company announced a plan administration change of certain of its Medicare-eligible prescription drug benefits to an Employer Group Waiver Plan with a wrap-around secondary plan effective July 1, 2021. The administration change is expected to reduce costs to the Company through the usage of Medicare Part D and drug manufacturer subsidies. Due to this amendment, along with the associated plan remeasurements, the Company recorded a decrease to its Accrued other postretirement benefits liability of $39, which was offset in Accumulated other comprehensive loss in the Consolidated Balance Sheet.

F. Other (Income) Expense, Net

	Second quarter ended June 30,		Six months ended June 30,	
	2022	2021	2022	2021
Non-service related net periodic benefit cost	$ 3	$ 3	$ 7	$ 6
Interest income	(1)	(1)	(1)	(1)
Foreign currency (gains) losses, net	(1)	1	(4)	3
Net realized and unrealized losses	4	1	7	4
Deferred compensation	(6)	4	(9)	6
Other, net	—	—	—	(6)
Other (income) expense, net	$ (1)	$ 8	$ —	$ 12

G. Income Taxes

The Company's year-to-date tax provision is comprised of the most recent estimated annual effective tax rate applied to year-to-date pre-tax ordinary income. The tax impacts of unusual or infrequently occurring items, including changes in judgment about valuation allowances and effects of changes in tax laws or rates, are recorded discretely in the interim period in which they occur. In addition, the tax provision is adjusted for the interim period impact of non-benefited pre-tax losses.

The estimated annual effective tax rate, before discrete items, applied to ordinary income was 23.9% in both the second quarter and six months ended June 30, 2022 and 29.1% in both the second quarter and six months ended June 30, 2021. The 2022 and 2021 rates were higher than the U.S. federal statutory rate of 21% primarily due to additional estimated U.S. tax on Global Intangible Low-Taxed Income ("GILTI") and other foreign earnings, incremental state tax and foreign taxes on earnings also subject to U.S. federal income tax, and nondeductible expenses.

For the second quarter of 2022 and 2021, the tax rate including discrete items was 19.7% and 32.7%, respectively. For the second quarter of 2022, the Company recorded a discrete tax benefit of $7 attributable to a $6 benefit to release a valuation allowance related to an interest carryforward tax attribute in the U.K. and a net benefit of $1 for other small items. For the second quarter of 2021, the Company recorded a discrete tax charge of $4 attributable to a $2 charge for a U.K. tax rate change and a net charge of $2 for other small items.

For the six months ended June 30, 2022 and 2021, the tax rate including discrete items was 21.5% and 30.9%, respectively. For the six months ended June 30, 2022, the Company recorded a discrete net tax benefit of $9 attributable to a $6 benefit to release a valuation allowance related to an interest carryforward tax attribute in the U.K., a $5 excess benefit for stock compensation and a net charge of $2 for other small items. For the six months ended June 30, 2021, the Company recorded a discrete tax charge of $3 attributable to a $2 charge for a U.K. tax rate change and a net charge of $1 for other small items.

The tax provision was comprised of the following:

	Second quarter ended June 30,		Six months ended June 30,	
	2022	2021	2022	2021
Pre-tax income at estimated annual effective income tax rate before discrete items	$ 44	$ 32	$ 85	$ 65
Impact of change in estimated annual effective tax rate on previous quarter’s pre-tax income	(1)	(1)	—	—
Interim period treatment of operational losses in foreign jurisdictions for which no tax benefit is recognized	—	1	—	1
Other discrete items	(7)	4	(9)	3
Provision for income taxes	$ 36	$ 36	$ 76	$ 69

H. Earnings Per Share

Basic earnings per share (“EPS”) amounts are computed by dividing earnings, after the deduction of preferred stock dividends declared, by the average number of common shares outstanding. Diluted EPS amounts assume the issuance of common stock for all potentially dilutive share equivalents outstanding.

The information used to compute basic and diluted EPS attributable to Howmet common shareholders was as follows (shares in millions):

	Second quarter ended June 30,		Six months ended June 30,	
	2022	2021	2022	2021
Net income attributable to common shareholders	$ 147	$ 74	$ 278	$ 154
Less: preferred stock dividends declared	—	—	1	1
Net income available to Howmet Aerospace common shareholders - basic and diluted	$ 147	$ 74	$ 277	$ 153
Average shares outstanding - basic	417	432	418	433
Effect of dilutive securities:				
Stock options	—	1	—	1
Stock and performance awards	5	4	5	4
Average shares outstanding - diluted	422	437	423	438

Common stock outstanding at June 30, 2022 and 2021 was approximately 416 million and 429 million, respectively.

On August 18, 2021, the Company announced that its Board of Directors authorized a share repurchase program of up to $1,500 of the Company's outstanding common stock. In the quarter ended June 30, 2022, the Company repurchased approximately 2 million shares of its common stock at an average price of $33.89 per share (excluding commissions cost) for $60 in cash. For the six months ended June 30, 2022, the Company repurchased approximately 7 million shares for $235 in cash. All of the shares repurchased have been retired. After giving effect to the share repurchases made through June 30, 2022, approximately $1,112 Board authorization remains available. Under the Company’s share repurchase programs (the “Share Repurchase Programs”), the Company may repurchase shares by means of trading plans established from time to time in accordance with Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, block trades, private transactions, open market repurchases and/or accelerated share repurchase agreements, or other derivative transactions. There is no stated expiration for the Share Repurchase Programs. Under its Share Repurchase Programs, the Company may repurchase shares from time to time, in amounts, at prices, and at such times as the Company deems appropriate, subject to market conditions, legal requirements and other considerations, including limits under its Five-Year Revolving Credit Agreement (the “Credit Agreement”) (see Note N). The Company is not obligated to repurchase any specific number of shares or to do so at any particular time, and the Share Repurchase Programs may be suspended, modified or terminated at any time without prior notice.

The approximately 15 million decrease in average shares outstanding (basic) for the second quarter of 2022 compared to the second quarter of 2021 was primarily due to the approximately 20 million shares repurchased between July 1, 2021 and June 30, 2022. As average shares outstanding are used in the calculation for both basic and diluted EPS, the full impact of share repurchases was not realized in EPS in the second quarter and six months ended June 30, 2022 as share repurchases occurred at varying points during the quarter.

In July 2022, the Company repurchased approximately 1 million shares of its common stock under the Share Repurchase Programs at an average price of $32.22 per share (excluding commissions cost) for approximately $30 in cash. After the share repurchases made through July 31, 2022, approximately $1,082 remains authorized for common stock share repurchases.

There were no stock options shares excluded from the calculation of average shares outstanding – diluted for the second quarter and six months ended June 30, 2022 and 2021. Additionally, there were no anti-dilutive stock options shares as of June 30, 2022 and 2021.

I. Accumulated Other Comprehensive Loss

The following table details the activity of the three components that comprise Accumulated other comprehensive loss:

	Second quarter ended June 30,		Six months ended June 30,	
	2022	2021	2022	2021
Pension and other postretirement benefits (E)				
Balance at beginning of period	$ (789)	$ (938)	$ (799)	$ (980)
Other comprehensive income:				
Unrecognized net actuarial gain and prior service cost/benefit	15	30	16	67
Tax expense	(3)	(7)	(3)	(15)
Total Other comprehensive income before reclassifications, net of tax	12	23	13	52
Amortization of net actuarial loss and prior service cost[1]	13	15	25	31
Tax expense[2]	(3)	(3)	(6)	(6)
Total amount reclassified from Accumulated other comprehensive loss, net of tax[3]	10	12	19	25
Total Other comprehensive income	22	35	32	77
Balance at end of period	$ (767)	$ (903)	$ (767)	$ (903)
Foreign currency translation				
Balance at beginning of period	$ (1,093)	$ (1,010)	$ (1,062)	$ (966)
Other comprehensive (loss) income	(114)	18	(145)	(26)
Balance at end of period	$ (1,207)	$ (992)	$ (1,207)	$ (992)
Cash flow hedges				
Balance at beginning of period	$ 18	$ 7	$ (2)	$ 3
Other comprehensive income (loss):				
Net change from periodic revaluations	(36)	11	(11)	19
Tax income (expense)	8	(2)	2	(4)
Total Other comprehensive (loss) income before reclassifications, net of tax	(28)	9	(9)	15
Net amount reclassified to earnings	(11)	(5)	(10)	(8)
Tax benefit[2]	3	—	3	1
Total amount reclassified from Accumulated other comprehensive loss, net of tax[3]	(8)	(5)	(7)	(7)
Total Other comprehensive (loss) income	(36)	4	(16)	8
Balance at end of period	$ (18)	$ 11	$ (18)	$ 11
Accumulated other comprehensive loss	$ (1,992)	$ (1,884)	$ (1,992)	$ (1,884)

(1) These amounts were recorded in Other (income) expense, net (see Note F) and Restructuring and other charges (see Note D) in the Statement of Consolidated Operations.

(2) These amounts were included in Provision for income taxes (see Note G) in the Statement of Consolidated Operations.

(3) A positive amount indicates a corresponding charge to earnings and a negative amount indicates a corresponding benefit to earnings.

J. Receivables

Sale of Receivables Programs

The Company maintains an accounts receivables securitization arrangement through a wholly-owned special purpose entity (“SPE”). The Company previously had a second arrangement which terminated on August 30, 2021. The net cash funding from the sale of accounts receivable was neither a use of cash nor a source of cash for any quarter of 2022 or 2021.

The terminated arrangement was with financial institutions to sell certain customer receivables without recourse on a revolving basis. The Company had $22 net cash repayments ($41 in draws and $63 in repayments) for the six months ended June 30, 2021 in connection with this arrangement. The total cash receipts from both customer payments on sold receivables (which were cash receipts on the underlying trade receivables that had been previously sold) and net cash repayments under the program were presented as cash receipts from sold receivables within investing activities in the Statement of Consolidated Cash Flows for the six months ended June 30, 2021.

The current accounts receivables securitization arrangement is one in which the Company, through an SPE, has a receivables purchase agreement (the “Receivables Purchase Agreement”) such that the SPE may sell certain receivables to financial institutions until the earlier of August 30, 2024 or a termination event. The Receivables Purchase Agreement also contains customary representations and warranties, as well as affirmative and negative covenants. Pursuant to the Receivables Purchase Agreement, the Company does not maintain effective control over the transferred receivables, and therefore accounts for these transfers as sales of receivables. This accounts receivable securitization arrangement totaled $325 at both June 30, 2022 and December 31, 2021 of which $250 was drawn as of both June 30, 2022 and December 31, 2021. As collateral against the sold receivables, the SPE maintains a certain level of unsold receivables, which were $130 and $79 at June 30, 2022 and December 31, 2021, respectively.

The Company sold $437 and $901 of its receivables without recourse and received cash funding under this program during the second quarter and six months ended June 30, 2022, respectively, resulting in derecognition of the receivables from the Company’s Consolidated Balance Sheet. Costs associated with the sales of receivables are reflected in the Company’s Statement of Consolidated Operations for the periods in which the sales occur. Cash receipts from sold receivables under the Receivables Purchase Agreement are presented within operating activities in the Statement of Consolidated Cash Flows.

Other Customer Receivable Sales

In the second quarter and six months ended June 30, 2022, the Company sold $117 and $223, respectively, of certain customers’ receivables in exchange for cash ($125 was outstanding from customers at June 30, 2022), the proceeds from which are presented in changes in receivables within operating activities in the Statement of Consolidated Cash Flows. In the second quarter and six months ended June 30, 2021, the Company sold $98 and $164, respectively, of certain customers’ receivables in exchange for cash, the proceeds from which are presented in changes in receivables within operating activities in the Statement of Consolidated Cash Flows.

K. Inventories

	June 30, 2022	December 31, 2021
Finished goods	$ 486	$ 478
Work-in-process	725	631
Purchased raw materials	307	256
Operating supplies	45	37
Total inventories	$ 1,563	$ 1,402

At June 30, 2022 and December 31, 2021, the portion of inventories valued on a last-in, first-out (“LIFO”) basis was $627 and $523, respectively. These amounts exclude the effects of LIFO valuation reductions, which were $203 and $192 at June 30, 2022 and December 31, 2021, respectively.

L. Properties, Plants, and Equipment, net

	June 30, 2022	December 31, 2021
Land and land rights[(1)]	$ 87	$ 91
Structures[(1)]	973	1,034
Machinery and equipment	3,905	3,932
	4,965	5,057
Less: accumulated depreciation and amortization[(1)]	2,779	2,772
	2,186	2,285
Construction work-in-progress	154	182
Properties, plants, and equipment, net	$ 2,340	$ 2,467

(1) In the first quarter of 2022, the Company reached an agreement to sell the corporate headquarters in Pittsburgh, PA. The proceeds from the sale of the corporate headquarters were $44, excluding $3 of transaction costs, and the carrying value at the time of sale was $41. A loss of less than $1 was recorded in Restructuring and other charges in the Statement of Consolidated Operations upon finalization of the sale in the second quarter of 2022. The Company entered into a 12-year lease with the purchaser for a portion of the property.

The Company incurred capital expenditures which remained unpaid at June 30, 2022 and June 30, 2021 of $30 and $39, respectively, and will result in cash outflows within investing activities in the Statement of Consolidated Cash Flows in subsequent periods.

M. Leases

Operating lease cost, which includes short-term leases and variable lease payments and approximates cash paid, was $14 and $16 in the second quarter of 2022 and 2021, respectively. Operating lease cost, which includes short-term leases and variable lease payments and approximates cash paid, was $30 and $33 in the six months ended June 30, 2022 and 2021, respectively.

Operating lease right-of-use assets and lease liabilities in the Consolidated Balance Sheet were as follows:

	June 30, 2022	December 31, 2021
Right-of-use assets classified in Other noncurrent assets	$ 109	$ 108
Current portion of lease liabilities classified in Other current liabilities	$ 32	$ 33
Long-term portion of lease liabilities classified in Other noncurrent liabilities	82	81
Total lease liabilities	$ 114	$ 114

N. Debt

	June 30, 2022	December 31, 2021
5.125% Notes, due 2024	$ 1,090	$ 1,150
6.875% Notes, due 2025	600	600
5.900% Notes, due 2027	625	625
6.750% Bonds, due 2028	300	300
3.000% Notes, due 2029	700	700
5.950% Notes, due 2037	625	625
4.750% Iowa Finance Authority Loan, due 2042	250	250
Other[(1)]	(20)	(18)
	4,170	4,232
Less: amount due within one year	1	5
Total long-term debt	$ 4,169	$ 4,227

(1) Includes various financing arrangements related to subsidiaries, unamortized debt discounts, and unamortized debt issuance costs related to outstanding notes and bonds listed in the table above.

Public Debt

On January 15, 2021, the Company completed the early redemption of all the remaining $361 of its 5.400% Notes due 2021 at par and paid $5 in accrued interest.

On May 3, 2021, the Company completed the early redemption of all the remaining $476 aggregate principal amount of its 5.870% Notes due 2022 and paid an aggregate of $503, including $5 of accrued interest. The Company also incurred an early termination premium and other costs of $23, which was recorded in Loss on debt redemption in the Statement of Consolidated Operations.

In the second quarter of 2022, the Company repurchased in the open market approximately $60 aggregate principal amount of its 5.125% Notes due 2024 and paid approximately $62, including an early termination premium of approximately $2, which was recorded in Loss on debt redemption in the Statement of Consolidated Operations.

Credit Facility

On September 28, 2021, the Company amended and restated its Credit Agreement. The Credit Agreement provides a $1,000 senior unsecured revolving credit facility that matures on September 28, 2026, unless extended or earlier terminated in accordance with the provisions of the Credit Agreement. Capitalized terms used in this "Credit Facility" section but not otherwise defined shall have the meanings given to such terms in the Credit Agreement.

Under the Credit Agreement, the Company's ratio of Consolidated Net Debt to Consolidated EBITDA as of the end of each fiscal quarter for the period of the four fiscal quarters of the Company most recently ended, is required to be no greater than 3.50 to 1.00; provided, however, that during the Covenant Relief Period through December 31, 2022 (unless the Company elects to terminate the Covenant Relief Period earlier in accordance with the Credit Agreement), the Company's Consolidated Net Debt to Consolidated EBITDA ratio cannot exceed the levels set forth below:

	No greater than
(i) for the quarter ending June 30, 2022	4.50 to 1.00
(ii) for the quarter ending September 30, 2022	4.25 to 1.00
(iii) for the quarter ending December 31, 2022	3.75 to 1.00

During the Covenant Relief Period, common stock dividends and share repurchases (see Note H) are permitted only if no loans under the Credit Agreement are outstanding at the time and are limited to an aggregate amount not to exceed $500 during the year ending December 31, 2022. Common stock dividends and share repurchases were $252 for the six months ended June 30, 2022.

There were no amounts outstanding under the Credit Agreement at June 30, 2022 or December 31, 2021, and no amounts were borrowed during 2022 or 2021 under the Credit Agreement. At June 30, 2022, the Company was in compliance with all covenants under the Credit Agreement. Availability under the Credit Agreement could be reduced in future periods if the Company fails to maintain the required ratios referenced above.

O. Fair Value of Financial Instruments

The carrying values of Cash and cash equivalents, restricted cash, derivatives, noncurrent receivables, and Short-term debt included in the Consolidated Balance Sheet approximate their fair value. The Company holds exchange-traded fixed income securities which are considered available-for-sale securities that are carried at fair value which is based on quoted market prices which are classified in Level 1 of the fair value hierarchy and are included in Prepaid expenses and other current assets in the Consolidated Balance Sheet. The fair value of Long-term debt, less amount due within one year was based on quoted market prices for public debt and on interest rates that are currently available to Howmet for issuance of debt with similar terms and maturities for non-public debt. The fair value amounts for all Long-term debt were classified in Level 2 of the fair value hierarchy.

	June 30, 2022		December 31, 2021	
	Carrying value	**Fair value**	**Carrying value**	**Fair value**
Long-term debt, less amount due within one year	$ 4,169	$ 4,037	$ 4,227	$ 4,707

Restricted cash, which is included in Prepaid expenses and other current assets in the Consolidated Balance Sheet, was $1 and $2 at June 30, 2022 and December 31, 2021, respectively.

P. Divestiture

2021 Divestiture

On March 15, 2021, the Company reached an agreement to sell a small manufacturing plant in France within the Fastening Systems segment, which resulted in a charge of $4 related to the non-cash impairment of the net book value of the business, primarily goodwill, in the first quarter of 2021 which was recorded in Restructuring and other charges in the Statement of Consolidated Operations. On June 1, 2021, the Company completed the sale for $10 (of which $8 of cash was received in the second quarter of 2021). The remaining $2 in escrow will be received no later than July 2023.

Q. Contingencies and Commitments

Contingencies

The following information supplements and, as applicable, updates the discussion of the contingencies and commitments in Note V to the Consolidated Financial Statements in our Annual Report on Form 10-K for the year ended December 31, 2021 (the "Form 10-K"), and should be read in conjunction with the complete descriptions provided in the Form 10-K.

Environmental Matters. Howmet participates in environmental assessments and cleanups at more than 30 locations. These include owned or operating facilities and adjoining properties, previously owned or operated facilities and adjoining properties, and waste sites, including Superfund (Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA")) sites.

A liability is recorded for environmental remediation when a cleanup program becomes probable and the costs can be reasonably estimated. As assessments and cleanups proceed, the liability is adjusted based on progress made in determining the extent of remedial actions and related costs. The liability can change substantially due to factors such as the nature and extent of contamination, changes in remedial requirements, and technological changes, among others.

The Company's remediation reserve balance was $15 at both June 30, 2022 and December 31, 2021, and was recorded in Other noncurrent liabilities and deferred credits in the Consolidated Balance Sheet (of which $6 was classified as a current liability for both periods), and reflects the most probable costs to remediate identified environmental conditions for which costs can be reasonably estimated. Payments related to remediation expenses applied against the reserve were less than $1 in the second quarter ended June 30, 2022 and included expenditures currently mandated, as well as those not required by any regulatory authority or third party.

Included in annual operating expenses are the recurring costs of managing hazardous substances and environmental programs. These costs are estimated to be less than 1% of Cost of goods sold.

Indemnified Matters. The Separation and Distribution Agreement, dated October 31, 2016, that the Company entered into with Alcoa Corporation in connection with its separation from Alcoa Corporation, provides for cross-indemnities between the Company and Alcoa Corporation for claims subject to indemnification. The Separation and Distribution Agreement, dated March 31, 2020, that the Company entered into with Arconic Corporation in connection with its separation from Arconic Corporation, provides for cross-indemnities between the Company and Arconic Corporation for claims subject to indemnification. Among other claims that are covered by these indemnities, Arconic Corporation indemnifies the Company (f/k/a Arconic Inc. and f/k/a Alcoa Inc.) for all potential liabilities associated with the fire that occurred at the Grenfell Tower in London, U.K. on June 14, 2017, including the following legal proceedings, as updated from the Form 10-K:

United Kingdom Litigation (various claims on behalf of survivors and estates of decedents). The suits are stayed. A case management conference was held during the week of April 26, 2022. On July 28, 2022, the stay was extended.

Behrens et al. v. Arconic Inc. et al. (various claims on behalf of survivors and estates of decedents). On September 16, 2020, the court dismissed the U.S. case, determining that the U.K. is the appropriate jurisdiction for the case. On July 8, 2022, the Third Circuit Court of Appeals affirmed the dismissal. A petition for a rehearing was filed before the Third Circuit Court.

Howard v. Arconic Inc. et al. (securities law related claims). On July 29, 2022, the court denied the Company's motion for certification of an interlocutory appeal. The court also ordered the parties to submit a pre-scheduling conference report and a stipulation selecting an alternative dispute resolution process.

With respect to the *Raul v. Albaugh, et al.* (derivative related claim) proceeding, the regulatory investigations and the stockholder demands specified in the Form 10-K, there are no updates.

Lehman Brothers International (Europe) ("LBIE") Legal Proceeding. *Lehman Brothers International (Europe) ("LBIE") Proceeding*. On June 26, 2020, LBIE filed formal proceedings against two Firth Rixson entities ("Firth") in the High Court of Justice, Business and Property Courts of England and Wales. The proceedings relate to interest rate swap transactions that Firth entered into with LBIE in 2007 to 2008. In 2008, LBIE commenced insolvency proceedings, an event of default under the agreements, rendering LBIE unable to meet its obligations under the swaps and suspending Firth's payment obligations. In the court proceedings, LBIE seeks a declaration that Firth has a contractual obligation to pay the amounts owing to LBIE under the agreements upon its emergence from insolvency proceedings which is expected to occur by 2023, which LBIE claims to be approximately $64, plus applicable interest. Firth will continue to maintain its position that multiple events of default under the agreements related to LBIE's insolvency proceeding cannot be cured or continue indefinitely, which the Company believes are meritorious defenses. A virtual hearing in this matter occurred on January 13 and 14, 2021 in London, England, and a ruling has yet to be issued to date. Given the importance of the case for LBIE and Firth, it is expected that, irrespective of the outcome of the most recent hearing, the case will be appealed and any requirement for the parties to pay amounts under the agreements will be stayed. An appeal of the case could continue into 2023. The Company intends to vigorously defend against these claims.

Other. In addition to the matters discussed above, various other lawsuits, claims, and proceedings have been or may be instituted or asserted against the Company, including those pertaining to environmental, product liability, safety and health, employment, tax and antitrust matters. While the amounts claimed in these other matters may be substantial, the ultimate liability cannot currently be determined because of the considerable uncertainties that exist. Therefore, it is possible that the Company's liquidity or results of operations in a period could be materially affected by one or more of these other matters. However, based on facts currently available, management believes that the disposition of these other matters that are pending or asserted will not have a material adverse effect, individually or in the aggregate, on the results of operations, financial position or cash flows of the Company.

Commitments

Guarantees

At June 30, 2022, Howmet had outstanding bank guarantees related to tax matters, outstanding debt, workers' compensation, environmental obligations, energy contracts, and customs duties, among others. The total amount committed under these guarantees, which expire at various dates between 2022 and 2040, was $13 at June 30, 2022.

Pursuant to the Separation and Distribution Agreement, dated as of October 31, 2016, between Howmet and Alcoa Corporation, Howmet was required to provide certain guarantees for Alcoa Corporation, which had a fair value of $6 at both June 30, 2022 and December 31, 2021, and were included in Other noncurrent liabilities and deferred credits in the Consolidated Balance Sheet. The remaining guarantee, for which the Company and Arconic Corporation are secondarily liable in the event of a payment default by Alcoa Corporation, relates to a long-term energy supply agreement that expires in 2047 at an Alcoa Corporation facility. The Company currently views the risk of an Alcoa Corporation payment default on its obligations under the contract to be remote. The Company and Arconic Corporation are required to provide a guarantee up to an estimated present value amount of approximately $1,406 at both June 30, 2022 and December 31, 2021 in the event of an Alcoa Corporation default. In December 2021, a surety bond with a limit of $80 relating to this guarantee was obtained by Alcoa Corporation to protect Howmet's obligation. This surety bond will be renewed on an annual basis by Alcoa Corporation.

Letters of Credit

The Company has outstanding letters of credit primarily related to workers' compensation, environmental obligations, and leasing obligations. The total amount committed under these letters of credit, which automatically renew or expire at various dates, mostly in 2022 and 2023, was $123 at June 30, 2022.

Pursuant to the Separation and Distribution Agreements between the Company and Arconic Corporation and between the Company and Alcoa Corporation, the Company is required to retain letters of credit of $53 (which are included in the $123 in the above paragraph) that had previously been provided related to the Company, Arconic Corporation, and Alcoa Corporation workers' compensation claims that occurred prior to the respective separation transactions of April 1, 2020 and November 1, 2016. Arconic Corporation and Alcoa Corporation workers' compensation and letters of credit fees paid by the Company are proportionally billed to, and are reimbursed by, Arconic Corporation and Alcoa Corporation, respectively. Also, the Company was required to provide letters of credit for certain Arconic Corporation environmental obligations and, as a result, the Company has $17 of outstanding letters of credit relating to such liabilities (which are also included in the $123 in the above paragraph).

Surety Bonds

The Company has outstanding surety bonds primarily related to tax matters, contract performance, workers' compensation, environmental-related matters, and customs duties. The total amount committed under these annual surety bonds, which expire and automatically renew at various dates, primarily in 2022 and 2023, was $46 at June 30, 2022.

Pursuant to the Separation and Distribution Agreements between the Company and Arconic Corporation and between the Company and Alcoa Corporation, the Company is required to provide surety bonds of $25 (which are included in the $46 in the above paragraph) that had previously been provided related to the Company, Arconic Corporation, and Alcoa Corporation workers' compensation claims that occurred prior to the respective separation transactions of April 1, 2020 and November 1,

2016. Arconic Corporation and Alcoa Corporation workers’ compensation claims and surety bond fees paid by the Company are proportionately billed to, and are reimbursed by, Arconic Corporation and Alcoa Corporation, respectively.

R. Subsequent Events

Management evaluated all activity of Howmet and concluded that no subsequent events have occurred that would require recognition in the Consolidated Financial Statements or disclosure in the Notes to the Consolidated Financial Statements, except as noted below:

See Note H for the common stock repurchases made subsequent to the second quarter of 2022.

On July 30, 2022, the Company’s cast house in Barberton, Ohio, which produces aluminum ingot used in the production of wheels for the North American commercial transportation market, experienced a mechanical failure resulting in substantial heat and fire-related damage to equipment. The facility is temporarily closed due to this event. An estimate of the impact is on-going and not currently available.

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

(U.S. dollars in millions, except per share amounts)

The following Management’s Discussion and Analysis of Financial Condition and Results of Operations (“MD&A”) is intended to help the reader understand our results of operations and financial condition. The MD&A is provided as a supplement to, and should be read in conjunction with, our consolidated financial statements and notes thereto included in Part I, Item 1 (Financial Statements and Supplementary Data) of this Form 10-Q.

Overview

Howmet is a global leader in lightweight metals engineering and manufacturing. Howmet’s innovative, multi-material products, which include nickel, titanium, aluminum, and cobalt, are used worldwide in the aerospace (commercial and defense), commercial transportation, and industrial and other markets.

In the second quarter of 2022, the Company derived approximately 45% of its revenue from products sold to the commercial aerospace market which is substantially less than the pre-pandemic 2019 annual rate of approximately 60%. Due to the global COVID-19 pandemic and its impact on the commercial aerospace industry to date, there has been a decrease in domestic and international air travel, which in turn has adversely affected demand for narrow-body and wide-body aircraft. Although domestic air travel is increasing, it still is below pre-pandemic 2019 levels on an average monthly basis. International travel also continues to be lower than pre-pandemic 2019 levels. Narrow-body demand is returning faster than wide-body demand and the commercial wide-body aircraft market is taking longer to recover, which is creating a shift in our product mix compared to pre-pandemic conditions. In addition to the impact from the pandemic, the timing and level of future aircraft builds by original equipment manufacturers are subject to changes and uncertainties, such as declines in Boeing 787 production rates due to delays in its recertification, which may cause our future results to differ from prior periods due to changes in product mix in certain segments.

For additional information regarding the ongoing risks related to our business, see section Part I, Item 1A in the Company’s Annual Report on Form 10-K for the year ended December 31, 2021.

Results of Operations

Earnings Summary:

Sales. Sales were $1,393 in the second quarter of 2022 compared to $1,195 in the second quarter of 2021 and $2,717 in the six months ended June 30, 2022 compared to $2,404 in the six months ended June 30, 2021. The increase of $198, or 17%, in the second quarter of 2022 was primarily due to higher sales of 34% from the commercial aerospace market, an increase in material cost pass through of approximately $60, and favorable product pricing of $19. The increase of $313, or 13%, in the six months ended June 30, 2022 was primarily due to higher sales of 31% from the commercial aerospace market, an increase in material cost pass through of approximately $100, and favorable product pricing of $33, partially offset by lower sales in the defense aerospace market.

Cost of goods sold (“COGS”). COGS as a percentage of Sales was 70.9% in the second quarter of 2022 compared to 71.7% in the second quarter of 2021 and 71.3% in the six months ended June 30, 2022 compared to 72.0% in the six months ended June 30, 2021. The decrease in the second quarter and six months ended June 30, 2022 was primarily due to higher sales volumes and favorable product pricing, partially offset by material cost pass through and increased headcount, primarily in the Engine Products and Fastening Systems segments, in anticipation of future revenue increases in 2022. Additionally, the Company recorded total COGS reimbursements of $3 and net charges of $6 in the second quarter and six months ended June 30, 2021, respectively, related to fires that occurred at a Fastening Systems plant in France in 2019 (the “France Plant Fire”) and at a Forged Wheels plant in Barberton, Ohio in 2020 (the “Barberton Plant Fire”). The Company recorded total COGS charges of $2 and $7 in the second quarter and six months ended June 30, 2022, respectively, related to the France Plant Fire and Barberton Plant Fire. The Company anticipates additional charges of approximately $2 to $6 in the third quarter of 2022, with further impacts in subsequent quarters as the businesses continue to recover from the fires.

Selling, general administrative, and other expenses (“SG&A”). SG&A expenses were $83 in the second quarter of 2022 compared to $55 in the second quarter of 2021 and $152 in the six months ended June 30, 2022 compared to $120 in the six months ended June 30, 2021. The increase of $28, or 51%, in the second quarter of 2022 and $32, or 27%, in the six months ended June 30, 2022 was primarily due to the timing of expenditures, higher employment and legacy costs, as well as legal and other advisory reimbursements received in 2021 that did not occur in 2022.

Research and development expenses (“R&D”). R&D expenses were $9 in the second quarter of 2022 and $4 in the second quarter of 2021, an increase of $5, or 125%. R&D expenses were $16 in the six months ended June 30, 2022 and $9 in the six months ended June 30, 2021, an increase of $7, or 78%. The increase in the second quarter and six months ended June 30, 2022 was primarily due to higher spending on technology projects.

Restructuring and other charges. Restructuring and other charges were $6 in the second quarter of 2022 compared to $5 in the second quarter of 2021 or an increase of $1. Restructuring and other charges were $8 in the six months ended June 30, 2022 compared to $14 in the six months ended June 30, 2021 or a decrease of $6. Restructuring and other charges for the second quarter of 2022 were primarily due to charges for U.S. pension plan settlements of $3 and exit related costs, including accelerated depreciation, of $3. Restructuring and other charges for the six months ended June 30, 2022 were primarily due to exit related costs, including accelerated depreciation, of $5 and charges for U.S. pension plan settlements of $4. Restructuring and other charges for the second quarter and six months ended June 30, 2021 were primarily due to charges for pension plan settlements and exit related costs.

See Note D to the Consolidated Financial Statements in Part I, Item I of this Form 10-Q for additional detail.

Interest expense, net. Interest expense, net was $57 in the second quarter of 2022 compared to $66 in the second quarter of 2021 and $115 in the six months ended June 30, 2022 compared to $138 in the six months ended June 30, 2021. The decrease of $9, or 14%, in the second quarter of 2022 and $23, or 17%, in the six months ended June 30, 2022 was primarily due to a reduced average level of debt for the second quarter and six months ended June 30, 2022.

See Note N to the Consolidated Financial Statements in Part I, Item I of this Form 10-Q for additional detail related to the Company's debt.

Loss on debt redemption. Debt redemption or tender premiums include the cost to redeem or repurchase certain of the Company's notes at a price which may be equal to the greater of the principal amount or the sum of the present values of the remaining scheduled payments, discounted using a defined treasury rate plus a spread, or a price based on the market price of its notes. Loss on debt redemption was $2 in the second quarter and six months ended June 30, 2022 compared with $23 in the second quarter and six months ended June 30, 2021. The decrease of $21 for both periods was primarily due to the debt premiums paid in the second quarter of 2021 on the 5.870% Notes due 2022, partially offset by the debt premiums paid on the 5.125% Notes due 2024 in the second quarter of 2022.

Other (income) expense, net. Other income, net was $1 in the second quarter of 2022 compared to Other expense, net of $8 in the second quarter of 2021 and Other expense, net was zero in the six months ended June 30, 2022 compared to Other expense, net of $12 in the six months ended June 30, 2021. The decrease of $9, or 113%, in the second quarter of 2022 was primarily due to the impacts of deferred compensation arrangements of $10, partially offset by an increase from net realized and unrealized losses of $3, primarily due to unrealized losses on investments. The decrease of $12, or 100%, in the six months ended June 30, 2022 was primarily due to the impacts of deferred compensation arrangements of $15 and an increase in foreign currency gains of $7, partially offset by mark-to-market adjustments of $6 in 2021 that did not occur in 2022 and an increase from net realized and unrealized losses of $3, primarily due to unrealized losses on investments.

Provision for income taxes. The estimated annual effective tax rate, before discrete items, applied to ordinary income was 23.9% in both the second quarter and six months ended June 30, 2022 compared to 29.1% in both the second quarter and six months ended June 30, 2021. The tax rate including discrete items was 19.7% in the second quarter of 2022 compared to 32.7% in the second quarter of 2021. A discrete tax benefit of $7 was recorded in the second quarter of 2022 compared to a discrete tax charge of $4 in the second quarter of 2021. The tax rate including discrete items was 21.5% in the six months ended June 30, 2022 compared to 30.9% in the six months ended June 30, 2021. A discrete tax benefit of $9 was recorded in the six months ended June 30, 2022 compared to a discrete tax charge of $3 in the six months ended June 30, 2021. The estimated annual effective tax rate is a reflection of global income across numerous jurisdictions. As a result of the recovery in domestic profitability, the annual effective tax rate has decreased.

See Note G to the Consolidated Financial Statements in Part I, Item I of this Form 10-Q for additional detail.

Net income. Net income was $147, or $0.35 per diluted share, in the second quarter of 2022 compared to $74, or $0.17 per diluted share, in the second quarter of 2021 and $278, or $0.66 per diluted share, in the six months ended June 30, 2022 compared to $154, or $0.35 per diluted share, in the six months ended June 30, 2021. The increase of $73 in the second quarter of 2022 was primarily due to higher sales in the commercial aerospace market, price increases, a decrease in the Loss on debt redemption, and a decrease in Interest expense, net, due to lower long-term debt levels, partially offset by lower sales in the defense aerospace market, an increase in material costs and other inflationary costs, and an increase in Research and development expenses. The increase of $124 in the six months ended June 30, 2022 was primarily due to higher sales in the commercial aerospace market, price increases, a decrease in Interest expense, net, due to lower long-term debt levels, a decrease in the Loss on debt redemption, and a decrease in Restructuring and other charges, partially offset by lower sales in the defense aerospace market, an increase in material costs and other inflationary costs, an increase in the provision for income taxes primarily driven by an increase in income before income taxes, and an increase in Research and development expenses.

Segment Information

The Company's operations consist of four worldwide reportable segments: Engine Products, Fastening Systems, Engineered Structures, and Forged Wheels. Segment performance under Howmet's management reporting system is evaluated based on a number of factors; however, the primary measure of performance is Segment Adjusted EBITDA. Prior to the first quarter of 2022, the Company used Segment operating profit as its primary measure of performance. However, the Company's Chief Executive Officer ("CEO") believes that Segment adjusted EBITDA is now a better representation of its business because it provides additional information with respect to the Company's operating performance and the Company's ability to meet its financial obligations. Howmet's definition of Segment Adjusted EBITDA (Earnings before interest, taxes, depreciation, and amortization) is net margin plus an add-back for depreciation and amortization. Net margin is equivalent to Sales minus the following items: Cost of goods sold; Selling, general administrative, and other expenses; Research and development expenses; and Provision for depreciation and amortization. Special items, including Restructuring and other charges, are also excluded from Net margin and Segment Adjusted EBITDA. Segment Adjusted EBITDA may not be comparable to similarly titled measures of other companies. Differences between the total segment and consolidated totals are in Corporate (See Note C to the Consolidated Financial Statements in Part I, Item 1 of this Form 10-Q for a description of each segment).

The Company has aligned its operations consistent with how the CEO assesses operating performance and allocates capital.

The Company produces aerospace engine parts and components and aerospace fastening systems for Boeing 737 MAX ("737 MAX") airplanes. In late December 2019, Boeing announced a temporary suspension of the production of 737 MAX airplanes. This decline in production had a negative impact on sales and Segment Adjusted EBITDA in the Engine Products, Fastening Systems, and Engineered Structures segments in 2020 and the first half of 2021. While regulatory authorities in the United States and certain other jurisdictions lifted grounding orders beginning in late 2020, our sales remained at lower levels through the first half of 2021 due to the residual impacts of the 737 MAX grounding.

The Company also produces aerospace engine parts and components and aerospace fastening systems for Boeing 787 airplanes. In 2020 and 2021, Boeing reduced production rates of the 787 airplanes. Boeing paused deliveries of its 787 aircraft in May 2021. The significant decline in Boeing 787 production rates had a negative impact on sales and Segment Adjusted EBITDA in the Engine Products, Fastening Systems, and Engineered Structures segments in 2021 and the first half of 2022. We expect reduced production rates to continue to have a negative impact on our sales and Segment Adjusted EBITDA in the second half of 2022.

Engine Products

	Second quarter ended June 30,		Six months ended June 30,	
	2022	2021	2022	2021
Third-party sales	$ 652	$ 544	$ 1,283	$ 1,078
Segment Adjusted EBITDA	179	130	352	262

Third-party sales for the Engine Products segment increased $108, or 20%, in the second quarter of 2022 compared to the second quarter of 2021, primarily due to higher sales volumes in the commercial aerospace and oil and gas markets and an increase in material cost pass through.

Third-party sales for the Engine Products segment increased $205, or 19%, in the six months ended June 30, 2022 compared to the six months ended June 30, 2021, primarily due to higher sales volumes in the commercial aerospace market and an increase in material cost pass through.

Segment Adjusted EBITDA for the Engine Products segment increased $49, or 38%, in the second quarter of 2022 compared to the second quarter of 2021, primarily due to higher sales volumes in the commercial aerospace and oil and gas markets as well as strong productivity gains. The segment added approximately 455 net headcount in the second quarter of 2022 in anticipation of future revenue increases in 2022.

Segment Adjusted EBITDA for the Engine Products segment increased $90, or 34%, in the six months ended June 30, 2022 compared to the six months ended June 30, 2021, primarily due to higher sales volumes in the commercial aerospace market as well as strong productivity gains. The segment added approximately 780 net headcount in the six months ended June 30, 2022 in anticipation of future revenue increases in 2022.

For the full year 2022 compared to 2021, demand in the commercial aerospace, industrial gas turbine, and oil and gas markets is expected to increase. An increase in material costs is expected to contribute to an increase in sales as the Company generally passes through these costs.

Fastening Systems

	Second quarter ended June 30,		Six months ended June 30,	
	2022	2021	2022	2021
Third-party sales	$ 277	$ 262	$ 541	$ 534
Segment Adjusted EBITDA	56	63	112	120

Third-party sales for the Fastening Systems segment increased $15, or 6%, in the second quarter of 2022 compared to the second quarter of 2021, primarily due to higher sales volumes in the commercial aerospace market, with narrow body recovery more than offsetting Boeing 787 production declines, and an increase in material cost pass through, partially offset by lower sales volumes in the industrial market.

Third-party sales for the Fastening Systems segment increased $7, or 1%, in the six months ended June 30, 2022 compared to the six months ended June 30, 2021, primarily due to higher sales volumes in the commercial aerospace market, with narrow body recovery more than offsetting Boeing 787 production declines, higher sales volumes in the commercial transportation market, and an increase in material cost pass through, partially offset by lower sales volumes in the defense aerospace and industrial markets.

Segment Adjusted EBITDA for the Fastening Systems segment decreased $7, or 11%, in the second quarter of 2022 compared to the second quarter of 2021, primarily due to Boeing 787 production declines, lower sales volumes in the industrial market, and inflationary costs, partially offset by favorable sales volumes in the narrow body commercial aerospace market. The segment added approximately 245 net headcount in the second quarter of 2022 in anticipation of future revenue increases in 2022.

Segment Adjusted EBITDA for the Fastening Systems segment decreased $8, or 7%, in the six months ended June 30, 2022 compared to the six months ended June 30, 2021, primarily due to Boeing 787 production declines, lower sales volumes in the defense aerospace and industrial markets, and inflationary costs, partially offset by favorable sales volumes in the narrow body commercial aerospace and commercial transportation markets. The segment added approximately 380 net headcount in the six months ended June 30, 2022 in anticipation of future revenue increases in 2022.

For the full year 2022 compared to 2021, demand in the commercial aerospace and commercial transportation markets is expected to increase. An increase in material costs is expected to contribute to an increase in sales as the Company generally passes through these costs.

Engineered Structures

	Second quarter ended June 30,		Six months ended June 30,	
	2022	2021	2022	2021
Third-party sales	$ 185	$ 160	$ 367	$ 336
Segment Adjusted EBITDA	26	24	49	46

Third-party sales for the Engineered Structures segment increased $25, or 16%, in the second quarter of 2022 compared to the second quarter of 2021, primarily due to higher sales volumes in the commercial aerospace market, with narrow body recovery more than offsetting Boeing 787 production declines, and an increase in material cost pass through.

Third-party sales for the Engineered Structures segment increased $31, or 9%, in the six months ended June 30, 2022 compared to the six months ended June 30, 2021, primarily due to higher sales volumes in the commercial aerospace market, with narrow body recovery more than offsetting Boeing 787 production declines, and an increase in material cost pass through, partially offset by lower sales volumes in the defense aerospace market, including lower F-35 program volumes.

Segment Adjusted EBITDA for the Engineered Structures segment increased $2, or 8%, in the second quarter of 2022 compared to the second quarter of 2021, primarily due to higher sales volumes in the commercial aerospace market, with narrow body recovery more than offsetting Boeing 787 production declines, partially offset by inflationary costs.

Segment Adjusted EBITDA for the Engineered Structures segment increased $3, or 7%, in the six months ended June 30, 2022 compared to the six months ended June 30, 2021, primarily due to higher sales volumes in the commercial aerospace market, with narrow body recovery more than offsetting Boeing 787 production declines, partially offset by lower sales volumes in the defense aerospace market, including lower F-35 program volumes, as well as inflationary costs.

For the full year 2022 compared to 2021, demand in the commercial aerospace market is expected to increase. However, demand in the defense aerospace market is expected to be down. An increase in material costs is expected to contribute to an increase in sales as the Company generally passes through these costs.

Forged Wheels

	Second quarter ended June 30,		Six months ended June 30,	
	2022	2021	2022	2021
Third-party sales	$ 279	$ 229	$ 526	$ 456
Segment Adjusted EBITDA	75	70	142	150

Third-party sales for the Forged Wheels segment increased $50, or 22%, in the second quarter of 2022 compared to the second quarter of 2021, primarily due to an increase in material and inflationary cost pass through and a 7% increase in volumes, partially offset by unfavorable foreign currency movements.

Third-party sales for the Forged Wheels segment increased $70, or 15%, in the six months ended June 30, 2022 compared to the six months ended June 30, 2021, primarily due to an increase in material and inflationary cost pass through, partially offset by unfavorable foreign currency movements.

Segment Adjusted EBITDA for the Forged Wheels segment increased $5, or 7%, in the second quarter of 2022 compared to the second quarter of 2021, primarily due to higher sales volumes, partially offset by unfavorable foreign currency movements.

Segment Adjusted EBITDA for the Forged Wheels segment decreased $8, or 5%, in the six months ended June 30, 2022 compared to the six months ended June 30, 2021, primarily due to unfavorable foreign currency movements.

For the full year 2022 compared to 2021, demand in the commercial transportation markets served by Forged Wheels is expected to increase in most regions. An increase in material and inflationary costs is expected to contribute to an increase in sales as the Company generally passes through these costs. However, sales in the Forged Wheels segment could be negatively impacted by customer supply chain constraints.

Reconciliation of Total Segment Adjusted EBITDA to Income before income taxes

	Second quarter ended June 30,		Six months ended June 30,	
	2022	2021	2022	2021
Income before income taxes	$ 183	$ 110	$ 354	$ 223
Loss on debt redemption	2	23	2	23
Interest expense, net	57	66	115	138
Other (income) expense, net	(1)	8	—	12
Operating income	$ 241	$ 207	$ 471	$ 396
Segment provision for depreciation and amortization	64	65	129	130
Unallocated amounts:				
Restructuring and other charges	6	5	8	14
Corporate expense	25	10	47	38
Total Segment Adjusted EBITDA	$ 336	$ 287	$ 655	$ 578

Total Segment Adjusted EBITDA is a non-GAAP financial measure. Management believes that this measure is meaningful to investors because it provides additional information with respect to the Company's operating performance and the Company's ability to meet its financial obligations. Differences between the total segment and consolidated totals are in Corporate.

See Restructuring and other charges, Interest expense, net, Loss on debt redemption, and Other (income) expense, net discussions above, under Results of Operations for reference.

Corporate expense increased $15, or 150%, in the second quarter of 2022 compared to the second quarter of 2021, primarily due to higher costs related to the France Plant Fire and the Barberton Plant Fire of $5, legal and other advisory reimbursements received in the second quarter of 2021 that did not occur in the second quarter of 2022 of $4, costs associated with closures, shutdowns, and other items of $1, and higher employment and legacy costs.

Corporate expense increased $9, or 24%, in the six months ended June 30, 2022 compared to the six months ended June 30, 2021, primarily due to higher legal and other advisory reimbursements received in the six months ended June 30, 2021 compared to the six months ended June 30, 2022 of $1, costs associated with closures, shutdowns, and other items of $1, and higher employment and legacy costs.

Environmental Matters

See the Environmental Matters section of Note Q to the Consolidated Financial Statements in Part I, Item 1 of this Form 10-Q.

Subsequent Events

See Note R to the Consolidated Financial Statements in Part I, Item 1 of this Form 10-Q for subsequent events.

Liquidity and Capital Resources

Operating Activities

Cash provided from operations was $213 in the six months ended June 30, 2022 compared to $79 in the six months ended June 30, 2021. The increase of $134, or 170%, was primarily due to higher operating results of $156 and lower pension contributions of $41, partially offset by an increase in working capital of $57. The components of the change in working capital primarily included inventories of $210, taxes, including income taxes, of $23, and prepaid expenses and other current assets of $9, partially offset by a change in accounts payable of $70, favorable changes in receivables of $62, including employee retention credit receivables, and accrued expenses of $53.

Management expects Howmet's estimated pension contributions and other postretirement benefit payments in 2022 to be approximately $60.

Financing Activities

Cash used for financing activities was $331 in the six months ended June 30, 2022 compared to $1,068 in the six months ended June 30, 2021. The decrease of $737, or 69%, was primarily due to less payments made in connection with the redemption of long-term debt of $778 (See Note N to the Consolidated Financial Statements in Part I, Item 1 of this Form 10-Q for reference) and a reduction in the premiums paid on the early redemption of debt of $20, partially offset by incremental common stock repurchases of $35 and dividends paid to common stock shareholders of $17. On an annual basis, the debt repurchases in 2022 will decrease Interest expense, net by approximately $3.

The Company maintains a credit facility pursuant to its Five-Year Revolving Credit Agreement (the "Credit Agreement") with a syndicate of lenders and issuers named therein (See Note N to the Consolidated Financial Statements in Part I, Item 1 of this Form 10-Q for reference).

The Company has an effective shelf registration statement on Form S-3, filed with the SEC, which allows for offerings of debt securities from time to time. The Company may opportunistically issue new debt securities under such registration statement or otherwise in accordance with securities laws, including but not limited to in order to refinance existing indebtedness.

The Company may in the future repurchase additional portions of its debt or equity securities from time to time, in either the open market or through privately negotiated transactions, in accordance with applicable SEC and other legal requirements. The timing, prices, and sizes of purchases depend upon prevailing trading prices, general economic and market conditions, and other factors, including applicable securities laws. Such purchases may be completed by means of trading plans established from time to time in accordance with Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, block trades, private transactions, open market repurchases, tender offers, and/or accelerated share repurchase agreements or other derivative transactions.

The Company's costs of borrowing and ability to access the capital markets are affected not only by market conditions but also by the short and long-term debt ratings assigned to the Company by the major credit rating agencies.

The Company's credit ratings from the three major credit rating agencies are as follows:

	Issuer Rating	Outlook	Date of Last Update
Standard and Poor's Ratings Service ("S&P")	BB+	Stable	December 3, 2021
Moody's Investors Service ("Moody's")	Ba1	Stable	April 27, 2022
Fitch Investors Service ("Fitch")	BBB-	Stable	March 22, 2022

On April 27, 2022, Moody's upgraded Howmet's long-term debt rating from Ba2 to Ba1 citing the Company's ability to improve its financial leverage, strong cash generation, and well-balanced financial policies and affirmed the current outlook as stable.

On March 22, 2022, Fitch affirmed the following ratings for Howmet: long-term debt at BBB- and the current outlook as stable.

Investing Activities

Cash used for investing activities was $65 in the six months ended June 30, 2022 compared to cash provided from investing activities of $94 in the six months ended June 30, 2021. The change of $159, or 169%, was primarily due to cash receipts from sold receivables of $172 in 2021, which did not have activity in the current year as a result of the termination of an accounts receivables securitization program in August 2021, and an increase in capital expenditures of $15. The net cash funding from the sale of accounts receivable was neither a use of cash nor a source of cash during 2022 and 2021. These changes were partially offset by incremental proceeds from the sale of assets of $34, which was primarily due to the sale of the corporate center. In the second quarter of 2022, the Company sold the corporate headquarters in Pittsburgh, PA. The proceeds from the sale of the corporate headquarters were $44, excluding $3 of transaction costs, and a carrying value of $41. The Company entered into a 12-year lease with the purchaser for a portion of the property.

Recently Adopted and Recently Issued Accounting Guidance

See Note B to the Consolidated Financial Statements in Part I, Item 1 of this Form 10-Q.

Forward-Looking Statements

This report contains (and oral communications made by Howmet Aerospace may contain) statements that relate to future events and expectations and as such constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include those containing such words as “anticipates,” “believes,” “could,” “estimates,” “expects,” “forecasts,” “goal,” “guidance,” “intends,” “may,” “outlook,” “plans,” “projects,” “seeks,” “sees,” “should,” “targets,” “will,” “would,” or other words of similar meaning. All statements that reflect Howmet Aerospace’s expectations, assumptions or projections about the future, other than statements of historical fact, are forward-looking statements, including, without limitation, statements, forecasts and outlook relating to the condition of end markets; future financial results or operating performance; future strategic actions; Howmet Aerospace’s strategies, outlook, and business and financial prospects; and any future repurchases of its debt or equity securities. These statements reflect beliefs and assumptions that are based on Howmet Aerospace’s perception of historical trends, current conditions and expected future developments, as well as other factors Howmet Aerospace believes are appropriate in the circumstances. Forward-looking statements are not guarantees of future performance and are subject to risks, uncertainties, and changes in circumstances that are difficult to predict, which could cause actual results to differ materially from those indicated by these statements. Such risks and uncertainties include, but are not limited to: (a) uncertainty of the duration, extent and impact of the COVID-19 pandemic on Howmet Aerospace’s business, results of operations, and financial condition; (b) deterioration in global economic and financial market conditions generally (including as a result of COVID-19 and its effects, among other things, on global supply, demand, and distribution disruptions); (c) unfavorable changes in the markets served by Howmet Aerospace; (d) the impact of potential cyber attacks and information technology or data security breaches; (e) the loss of significant customers or adverse changes in customers’ business or financial conditions; (f) manufacturing difficulties or other issues that impact product performance, quality or safety; (g) inability of suppliers to meet obligations due to supply chain disruptions or otherwise; (h) the inability to achieve revenue growth, cash generation, cost savings, restructuring plans, cost reductions, improvement in profitability, or strengthening of competitiveness and operations anticipated or targeted; (i) inability to meet increased demand, production targets or commitments; (j) competition from new product offerings, disruptive technologies or other developments; (k) geopolitical, economic, and regulatory risks relating to Howmet Aerospace’s global operations, including geopolitical and diplomatic tensions, instabilities and conflicts, as well as compliance with U.S. and foreign trade and tax laws, sanctions, embargoes and other regulations; (l) the outcome of contingencies, including legal proceedings, government or regulatory investigations, and environmental remediation, which can expose Howmet Aerospace to substantial costs and liabilities; (m) failure to comply with government contracting regulations; (n) adverse changes in discount rates or investment returns on pension assets; and (o) the other risk factors summarized in Howmet Aerospace’s Form 10-K for the year ended December 31, 2021 and other reports filed with the U.S. Securities and Exchange Commission. Market projections are subject to the risks discussed above and other risks in the market. The statements in a presentation or document are made as of the date of such presentation or document. Howmet Aerospace disclaims any intention or obligation to update publicly any forward-looking statements, whether in response to new information, future events, or otherwise, except as required by applicable law.

Item 3. Quantitative and Qualitative Disclosures about Market Risk.

Not material.

Item 4. Controls and Procedures.

(a) Evaluation of Disclosure Controls and Procedures

The Company's Chief Executive Officer and Chief Financial Officer have evaluated the Company’s disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as of the end of the period covered by this report, and they have concluded that these controls and procedures are effective.

(b) Changes in Internal Control over Financial Reporting

There have been no changes in internal control over financial reporting during the second quarter of 2022 that have materially affected, or are reasonably likely to materially affect, the Company’s internal control over financial reporting.

PART II – OTHER INFORMATION

Item 1. Legal Proceedings.

See Note Q to the Consolidated Financial Statements in Part I, Item 1 of this Form 10-Q.

Item 1A. Risk Factors.

There have been no material changes from the risk factors previously disclosed in Part I, Item 1A, "Risk Factors" in the Company's Annual Report on Form 10-K for the year ended December 31, 2021.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

The following table presents information with respect to the Company's repurchases of its common stock during the quarter ended June 30, 2022:

		(in millions except share and per share amounts)		
Period	**Total Number of Shares Purchased**	**Average Price Paid Per Share[1]**	**Total Number of Shares Purchased as Part of Publicly Announced Repurchase Plans or Programs**	**Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs[1][2]**
April 1 - April 30, 2022	31,422[3]	$34.16	—	$1,172
May 1 - May 31, 2022	1,770,271	$33.89	1,770,271	$1,112
June 1 - June 30, 2022	—	$—	—	$1,112
Total for quarter ended June 30, 2022	1,801,693	$33.90	1,770,271	

(1) Excludes commissions cost.

(2) On August 18, 2021, the Company announced that its Board of Directors authorized a share repurchase program of up to $1,500 million of the Company's outstanding common stock. After giving effect to the share repurchases made through June 30, 2022, approximately $1,112 million Board authorization remains available. Under the Company's share repurchase programs (the "Share Repurchase Programs"), the Company may repurchase shares by means of trading plans established from time to time in accordance with Rule 10b5-1 under the Securities Exchange Act of 1934, as amended, block trades, private transactions, open market repurchases and/or accelerated share repurchase agreements or other derivative transactions. There is no stated expiration for the Share Repurchase Programs. Under its Share Repurchase Programs, the Company may repurchase shares from time to time, in amounts, at prices, and at such times as the Company deems appropriate, subject to market conditions, legal requirements and other considerations, including limits under the Company's Five-Year Revolving Credit Agreement (See Note N to the Consolidated Financial Statements in Part I, Item 1 of this Form 10-Q for reference). The Company is not obligated to repurchase any specific number of shares or to do so at any particular time, and the Share Repurchase Programs may be suspended, modified or terminated at any time without prior notice.

(3) Reflects the surrender of shares of Howmet common stock by a participant in the Company's stock incentive plan to the Company to satisfy the exercise price and tax withholding obligations of employee stock options at the time of exercise. These surrendered shares are not part of any Share Repurchase Programs.

Item 6. Exhibits.

10.1	First Amendment, effective as of April 1, 2022, to Amended and Restated Trademark License Agreement by and between Alcoa USA Corp. and Howmet Aerospace Inc.
31	Certifications pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32	Certification pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document.
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
104.	Cover Page Interactive Data File - the cover page from this Quarterly Report on Form 10-Q for the quarter ended June 30, 2022, formatted in Inline XBRL (included within the Exhibit 101 attachments).

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.

	Howmet Aerospace Inc.
August 4, 2022	/s/ Ken Giacobbe
Date	Ken Giacobbe
	Executive Vice President and
	Chief Financial Officer
	(Principal Financial Officer)
August 4, 2022	/s/ Barbara L. Shultz
Date	Barbara L. Shultz
	Vice President and Controller
	(Principal Accounting Officer)

Exhibit 10.1

FIRST AMENDMENT
TO AMENDED AND RESTATED TRADEMARK LICENSE
AGREEMENT

THE FIRST AMENDMENT TO THE AMENDED AND RESTATED TRADEMARK LICNESE AGREEMENT (the “First Amendment”) is made and entered into effective as of April 1, 2022 (the “First Amendment Effective Date”), by and between Alcoa USA Corp. (“Alcoa”) and Howmet Aerospace Inc. (“Howmet”). Individually, Alcoa and Howmet are referred to in this First Amendment as a “Party” and collectively as the “Parties.”

RECITALS

WHEREAS, Alcoa and Alcoa Inc. were and are parties to that certain Amended and Restated Trademark License Agreement, having an effective date of October 31, 2016 under which Alcoa was identified as the “Licensor” and Alcoa Inc. was identified as the “Licensee” (the “Agreement”);

WHEREAS, effective as of November 1, 2016, Alcoa Inc. changed its name to Arconic Inc.;

WHEREAS, effective as of March 30, 2020, Arconic Inc. changed its name to Howmet;

WHEREAS, Howmet now desires that (i) Alcoa file and prosecute additional trademark applications for certain of the Licensed Marks in selected countries in the trademark class applicable to commercial wheels, (ii) any eventual trademark registrations granted by such countries resulting from such additional trademark applications be licensed to Howmet for Wheel Products pursuant to the terms of the Agreement, and (iii) Alcoa consent to Howmet’s registration and maintenance of certain internet domain names which incorporate certain of the Licensed Marks, and the addition of such internet domain names, once registered, to the “List of Domain Names” contained at Schedule 4 of the Agreement; and

WHEREAS, the Parties now desire to amend the Agreement pursuant to the terms of this First Amendment.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, and good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereto, intending to be legally bound, agree as follows:

1. Definitions. All capitalized terms used in this First Amendment but not defined in this First Amendment shall have the meanings ascribed to them in the Agreement. To the extent there is a conflict in meaning or interpretation as between the Agreement and this First Amendment, this First Amendment shall govern.

2. Amendments to the Agreement. The Agreement is hereby amended as of the First Amendment Effective Date as follows:

a) Alcoa shall file and prosecute trademark applications for the following Licensed Marks: and in the following countries in the trademark class applicable to commercial wheels (typically trademark class 12) (collectively, the “New TM Applications”):

Israel
Lichtenstein
Monaco
South Africa
Turkey

Alcoa and Howmet agree that any eventual trademark registrations granted by the above- mentioned countries for the Licensed Marks resulting from the New TM Applications shall be owned by Alcoa.

Alcoa and Howmet agree that any eventual trademark registrations granted by the above- mentioned countries for the Licensed Marks resulting from the New TM Applications shall be licensed to Howmet for Wheel Products pursuant to the terms of the Agreement.

b) Howmet shall reimburse Alcoa for any and all:

(i) costs (including government filing fees, outside counsel fees, translation fees, etc.) associated with preparation, filing, prosecution, and issuance of the New TM Applications; and

(ii) ongoing trademark annuities assessed by the trademark offices in the above- mentioned countries to maintain in force any trademark application and/or registration that issues off of the New TM Applications.

All payments made by Howmet to Alcoa hereunder shall and will be payable in United States Dollars in immediately available funds to an account designated by Alcoa via Electronic Funds Transfer (EFT) or such other electronic payment form as agreed to in writing by Alcoa.

c) Subject to the terms of the Agreement, Alcoa consents to Howmet’s registration and maintenance, in Howmet’s name and at Howmet’s sole cost, of the following internet domain names which incorporate certain of the License Marks:

alcoawheels.bg
alcoawheels.com.hr
alcoawheels.hr
alcoawheels.cz
alcoawheels.co.cz
alcoawheels.com.ee
alcoawheels.ee
alcoawheels.com.gr
alcoawheels.gr
alcoawheels.co.hu
alcoawheels.hu
alcoawheels.ie
alcoawheels.co.il

alcoawheels.lu
alcoawheels.com.pt
alcoawheels.pt
alcoawheels.co.pt
alcoawheels.sk
alcoawheels.si
alcoawheels.com.tr
alcoawheels.co.za

d) Alcoa and Howmet agree that, once registered by Howmet, (i) the above internet domain names shall be deemed added to the "List of Domain Names" contained at Schedule 4 of the Agreement and (ii) the use of such internet domain names by Howmet shall be governed by the terms of the Agreement.

3. No Other Amendments; Confirmation. Except as expressly amended hereby, the provisions of the Agreement are and shall remain in full force and effect. Nothing herein shall be deemed to entitle either Party to a consent to, or a waiver, amendment, modification or other change of, any of the terms, conditions, obligations, covenant or agreements contained in the First Amendment other than as provided herein.

4. Severability. If any term, provision, covenant or condition of this First Amendment is held invalid or unenforceable for any reason, the remaining provisions of this First Amendment shall continue in full force and effect as if this First Amendment had been executed with the invalid portion eliminated, provided the effectiveness of the remaining portions of this First Amendment will not defeat the overall intent of the Parties. In such a situation, the Parties agree, to the extent legal and possible, to incorporate a replacement provision to accomplish the originally intended effect.

5. Electronic/Facsimile Signatures; Counterparts. The Parties agree that a facsimile or electronically-copied signature has the same effect as an original signature. This First Amendment may be executed in multiple copies, each of which is an original and all of which constitute one instrument.

[REMAINDER OF PAGE INTENTIONALLY BLANK – SIGNATURE PAGE TO FOLLOW]

IN WITNESS WHEREOF, the Parties hereto have executed this First Amendment or caused the same to be executed by a duly authorized officer as of the First Amendment Effective Date.

ALCOA USA CORP.	HOWMET AEROSPACE INC.
/s/ Nicklaus A. Oliver	/s/ Randall Scheps
By: Signature	By: Signature
Nicklaus A. Oliver	Randall Scheps
Name:	Name:
Associate General Counsel	President HWS
Title:	Title:
Pittsburgh, PA, USA	Cleveland, OH, USA
Place:	Place:
March 31, 2022	3.31.22
Date:	Date:

Exhibit 31

Certifications

I, John C. Plant, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Howmet Aerospace Inc.;

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

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

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

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

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

5. The registrant's other certifying officer 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.

Date: August 4, 2022

/s/ John C. Plant

John C. Plant
Executive Chairman and Chief Executive Officer

I, Ken Giacobbe, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Howmet Aerospace Inc.;
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 and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
    (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer 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.

Date: August 4, 2022

/s/ Ken Giacobbe

Ken Giacobbe

Executive Vice President and Chief Financial Officer

Exhibit 32

Certification
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), each of the undersigned officers of Howmet Aerospace Inc., a Delaware corporation (the "Company"), does hereby certify that:

The Quarterly Report on Form 10-Q for the period ended June 30, 2022 (the "Form 10-Q") of the Company fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 and information contained in the Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated:	August 4, 2022	/s/ John C. Plant
		John C. Plant
		Executive Chairman and Chief Executive Officer
Dated:	August 4, 2022	/s/ Ken Giacobbe
		Ken Giacobbe
		Executive Vice President and Chief Financial Officer

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

The foregoing certification is being furnished to the Securities and Exchange Commission as an exhibit to the Form 10-Q and shall not be considered filed as part of the Form 10-Q.