

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 10-Q

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

For the quarterly period ended 31 March 2022

or

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

For the transition period from _____ to _____

Commission File Number 001-04534



AIR PRODUCTS AND CHEMICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

23-1274455

(I.R.S. Employer Identification No.)

1940 Air Products Boulevard
Allentown, Pennsylvania 18106-5500
(Address of principal executive offices and Zip Code)

610-481-4911
(Registrant's telephone number, including area code)

Not Applicable

(Former name, former address and former fiscal year, if changed since last report)

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

<u>Title of each class</u>	<u>Trading Symbol(s)</u>	<u>Name of each exchange on which registered</u>
Common Stock, par value \$1.00 per share	APD	New York Stock Exchange
1.000% Euro Notes due 2025	APD25	New York Stock Exchange
0.500% Euro Notes due 2028	APD28	New York Stock Exchange
0.800% Euro Notes due 2032	APD32	New York Stock Exchange

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 ☒ 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 ☒

The number of shares of common stock, par value \$1 per share, outstanding at 31 March 2022 was 221,773,327.

AIR PRODUCTS AND CHEMICALS, INC. and Subsidiaries
QUARTERLY REPORT ON FORM 10-Q
For the quarterly period ended 31 March 2022

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FORWARD-LOOKING STATEMENTS

This quarterly report contains “forward-looking statements” within the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include all statements that do not relate solely to historical or current facts and can generally be identified by words such as “anticipate,” “believe,” “could,” “estimate,” “expect,” “forecast,” “future,” “goal,” “intend,” “may,” “outlook,” “plan,” “positioned,” “possible,” “potential,” “project,” “should,” “target,” “will,” “would,” and similar expressions or variations thereof, or the negative thereof, but these terms are not the exclusive means of identifying such statements. Forward-looking statements are based on management’s expectations and assumptions as of the date of this report and are not guarantees of future performance. You are cautioned not to place undue reliance on our forward-looking statements.

Forward-looking statements may relate to a number of matters, including expectations regarding revenue, margins, expenses, earnings, tax provisions, cash flows, pension obligations, share repurchases or other statements regarding economic conditions or our business outlook; statements regarding plans, projects, strategies and objectives for our future operations, including our ability to win new projects and execute the projects in our backlog; and statements regarding our expectations with respect to pending legal claims or disputes. While forward-looking statements are made in good faith and based on assumptions, expectations and projections that management believes are reasonable based on currently available information, actual performance and financial results may differ materially from projections and estimates expressed in the forward-looking statements because of many factors, including, without limitation:

- the duration and impacts of the ongoing COVID-19 global pandemic and efforts to contain its transmission, including the effect of these factors on our business, our customers, economic conditions and markets generally;
- changes in global or regional economic conditions, inflation and supply and demand dynamics in the market segments we serve, or in the financial markets that may affect the availability and terms on which we may obtain financing;
- the ability to implement price increases to offset cost increases;
- disruptions to our supply chain and related distribution delays and cost increases;
- risks associated with having extensive international operations, including political risks, risks associated with unanticipated government actions and risks of investing in developing markets;
- project delays, contract terminations, customer cancellations, or postponement of projects and sales;
- our ability to develop, operate, and manage costs of large scale and technically complex projects, including gasification and hydrogen projects;
- the future financial and operating performance of major customers, joint ventures, and equity affiliates;
- our ability to develop, implement, and operate new technologies;
- our ability to execute the projects in our backlog and refresh our pipeline of new projects;
- tariffs, economic sanctions and regulatory activities in jurisdictions in which we and our affiliates and joint ventures operate;
- the impact of environmental, tax, or other legislation, as well as regulations and other public policy initiatives affecting our business and the business of our affiliates and related compliance requirements, including legislation, regulations, or policies intended to address global climate change;
- changes in tax rates and other changes in tax law;
- the timing, impact, and other uncertainties relating to acquisitions and divestitures, including our ability to integrate acquisitions and separate divested businesses, respectively;
- risks relating to cybersecurity incidents, including risks from the interruption, failure or compromise of our information systems;

FORWARD-LOOKING STATEMENTS (CONTINUED)

- catastrophic events, such as natural disasters and extreme weather events, public health crises, acts of war, including Russia's invasion of Ukraine and the ongoing civil war in Yemen, or terrorism;
- the impact on our business and customers of price fluctuations in oil and natural gas and disruptions in markets and the economy due to oil and natural gas price volatility;
- costs and outcomes of legal or regulatory proceedings and investigations;
- asset impairments due to economic conditions or specific events;
- significant fluctuations in inflation, interest rates and foreign currency exchange rates from those currently anticipated;
- damage to facilities, pipelines or delivery systems, including those we own or operate for third parties;
- availability and cost of electric power, natural gas, and other raw materials; and
- the success of productivity and operational improvement programs.

In addition to the foregoing factors, forward-looking statements contained herein are qualified with respect to the risks disclosed elsewhere in this document, including in Item 2, *Management's Discussion and Analysis of Financial Condition and Results of Operations*, and Item 3, *Quantitative and Qualitative Disclosures About Market Risk*, as well as with respect to the risks described in Item 1A, *Risk Factors*, to our Annual Report on Form 10-K for the fiscal year ended 30 September 2021. Any of these factors, as well as those not currently anticipated by management, could cause our results of operations, financial condition or liquidity to differ materially from what is expressed or implied by any forward-looking statement. Except as required by law, we disclaim any obligation or undertaking to update or revise any forward-looking statements contained herein to reflect any change in assumptions, beliefs, or expectations or any change in events, conditions, or circumstances upon which any such forward-looking statements are based.

PART I—FINANCIAL INFORMATION
Item 1. Financial Statements

Air Products and Chemicals, Inc. and Subsidiaries
CONSOLIDATED INCOME STATEMENTS
(Unaudited)

	Three Months Ended 31 March		Six Months Ended 31 March	
	2022	2021	2022	2021
<i>(Millions of dollars, except for share and per share data)</i>				
Sales	\$2,945.1	\$2,502.0	\$5,939.3	\$4,877.2
Cost of sales	2,151.6	1,745.5	4,375.2	3,377.9
Facility closure	—	23.2	—	23.2
Selling and administrative	227.0	210.3	459.8	413.0
Research and development	23.7	21.1	47.0	44.6
Gain on exchange with joint venture partner	—	36.8	—	36.8
Other income (expense), net	19.1	9.8	27.6	32.3
Operating Income	561.9	548.5	1,084.9	1,087.6
Equity affiliates' income	120.8	69.8	268.6	139.1
Interest expense	32.3	36.1	62.8	72.8
Other non-operating income (expense), net	9.1	16.8	31.7	35.4
Income From Continuing Operations Before Taxes	659.5	599.0	1,322.4	1,189.3
Income tax provision	122.7	121.9	236.0	235.8
Income From Continuing Operations	536.8	477.1	1,086.4	953.5
Income from discontinued operations, net of tax	—	—	—	10.3
Net Income	536.8	477.1	1,086.4	963.8
Net income (loss) attributable to noncontrolling interests of continuing operations	6.3	4.0	(4.5)	8.7
Net Income Attributable to Air Products	\$530.5	\$473.1	\$1,090.9	\$955.1
Net Income Attributable to Air Products				
Net income from continuing operations	\$530.5	\$473.1	\$1,090.9	\$944.8
Net income from discontinued operations	—	—	—	10.3
Net Income Attributable to Air Products	\$530.5	\$473.1	\$1,090.9	\$955.1
Per Share Data*				
Basic EPS from continuing operations	\$2.39	\$2.13	\$4.91	\$4.26
Basic EPS from discontinued operations	—	—	—	0.05
Basic EPS Attributable to Air Products	\$2.39	\$2.13	\$4.91	\$4.31
Diluted EPS from continuing operations	\$2.38	\$2.13	\$4.90	\$4.25
Diluted EPS from discontinued operations	—	—	—	0.05
Diluted EPS Attributable to Air Products	\$2.38	\$2.13	\$4.90	\$4.29
Weighted Average Common Shares (in millions)				
Basic	222.0	221.6	222.0	221.6
Diluted	222.5	222.5	222.5	222.5

*Earnings per share ("EPS") is calculated independently for each component and may not sum to total EPS due to rounding.

The accompanying notes are an integral part of these statements.

Air Products and Chemicals, Inc. and Subsidiaries
CONSOLIDATED COMPREHENSIVE INCOME STATEMENTS
(Unaudited)

	Three Months Ended 31 March	
(Millions of dollars)	2022	2021
Net Income	\$536.8	\$477.1
Other Comprehensive Loss, net of tax:		
Translation adjustments, net of tax of \$9.2 and \$22.6	(58.8)	(144.6)
Net loss on derivatives, net of tax of (\$15.3) and (\$13.2)	(39.4)	(5.2)
Reclassification adjustments:		
Derivatives, net of tax of \$8.6 and \$12.0	26.0	36.0
Pension and postretirement benefits, net of tax of \$5.5 and \$5.9	15.9	18.3
Total Other Comprehensive Loss	(56.3)	(95.5)
Comprehensive Income	480.5	381.6
Net Income Attributable to Noncontrolling Interests	6.3	4.0
Other Comprehensive (Loss) Income Attributable to Noncontrolling Interests	(3.0)	15.6
Comprehensive Income Attributable to Air Products	\$477.2	\$362.0

	Six Months Ended 31 March	
(Millions of dollars)	2022	2021
Net Income	\$1,086.4	\$963.8
Other Comprehensive Income, net of tax:		
Translation adjustments, net of tax of \$16.8 and (\$1.6)	(18.2)	271.1
Net (loss) gain on derivatives, net of tax of (\$26.4) and (\$10.5)	(39.9)	8.6
Reclassification adjustments:		
Derivatives, net of tax of \$14.7 and \$11.2	44.7	34.7
Pension and postretirement benefits, net of tax of \$10.9 and \$11.8	31.9	36.6
Total Other Comprehensive Income	18.5	351.0
Comprehensive Income	1,104.9	1,314.8
Net (Loss) Income Attributable to Noncontrolling Interests	(4.5)	8.7
Other Comprehensive Income Attributable to Noncontrolling Interests	8.2	35.3
Comprehensive Income Attributable to Air Products	\$1,101.2	\$1,270.8

The accompanying notes are an integral part of these statements.

Air Products and Chemicals, Inc. and Subsidiaries
CONSOLIDATED BALANCE SHEETS
(Unaudited)

	31 March 2022	30 September 2021
<i>(Millions of dollars, except for share and per share data)</i>		
Assets		
Current Assets		
Cash and cash items	\$2,348.7	\$4,468.9
Short-term investments	848.9	1,331.9
Trade receivables, net	1,728.2	1,451.3
Inventories	507.5	453.9
Prepaid expenses	195.5	119.4
Other receivables and current assets	620.6	550.9
Total Current Assets	6,249.4	8,376.3
Investment in net assets of and advances to equity affiliates	3,423.8	1,649.3
Plant and equipment, at cost	28,720.4	27,488.8
Less: accumulated depreciation	14,625.2	14,234.2
Plant and equipment, net	14,095.2	13,254.6
Goodwill, net	912.8	911.5
Intangible assets, net	419.2	420.7
Noncurrent lease receivables	692.3	740.3
Other noncurrent assets	1,657.0	1,506.5
Total Noncurrent Assets	21,200.3	18,482.9
Total Assets	\$27,449.7	\$26,859.2
Liabilities and Equity		
Current Liabilities		
Payables and accrued liabilities	\$2,407.1	\$2,218.3
Accrued income taxes	104.6	93.9
Short-term borrowings	207.2	2.4
Current portion of long-term debt	486.2	484.5
Total Current Liabilities	3,205.1	2,799.1
Long-term debt	6,462.2	6,875.7
Long-term debt – related party	285.9	274.6
Other noncurrent liabilities	1,736.8	1,640.9
Deferred income taxes	1,249.0	1,180.9
Total Noncurrent Liabilities	9,733.9	9,972.1
Total Liabilities	12,939.0	12,771.2
Commitments and Contingencies - See Note 13		
Air Products Shareholders' Equity		
Common stock (par value \$1 per share; issued 2022 and 2021 - 249,455,584 shares)	249.4	249.4
Capital in excess of par value	1,120.8	1,115.8
Retained earnings	16,075.9	15,678.3
Accumulated other comprehensive loss	(1,505.6)	(1,515.9)
Treasury stock, at cost (2022 - 27,682,257 shares; 2021 - 28,058,829 shares)	(1,985.4)	(1,987.9)
Total Air Products Shareholders' Equity	13,955.1	13,539.7
Noncontrolling Interests	555.6	548.3
Total Equity	14,510.7	14,088.0
Total Liabilities and Equity	\$27,449.7	\$26,859.2

The accompanying notes are an integral part of these statements.

Air Products and Chemicals, Inc. and Subsidiaries
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

	Six Months Ended 31 March	
(Millions of dollars)	2022	2021
Operating Activities		
Net income	\$1,086.4	\$963.8
Less: Net (loss) income attributable to noncontrolling interests of continuing operations	(4.5)	8.7
Net income attributable to Air Products	1,090.9	955.1
Income from discontinued operations	—	(10.3)
Income from continuing operations attributable to Air Products	1,090.9	944.8
Adjustments to reconcile income to cash provided by operating activities:		
Depreciation and amortization	668.2	653.0
Deferred income taxes	51.3	76.1
Facility closure	—	23.2
Undistributed earnings of equity method investments	(200.8)	(58.7)
Gain on sale of assets and investments	(11.8)	(26.2)
Share-based compensation	26.5	22.4
Noncurrent lease receivables	43.9	43.4
Other adjustments	(101.0)	(6.5)
Working capital changes that provided (used) cash, excluding effects of acquisitions:		
Trade receivables	(203.1)	(74.8)
Inventories	(57.3)	(25.4)
Other receivables	13.8	15.7
Payables and accrued liabilities	123.1	135.7
Other working capital	(138.7)	(142.4)
Cash Provided by Operating Activities	1,305.0	1,580.3
Investing Activities		
Additions to plant and equipment, including long-term deposits	(1,433.6)	(1,227.8)
Acquisitions, less cash acquired	(65.1)	—
Investment in and advances to unconsolidated affiliates	(1,650.9)	(69.8)
Proceeds from sale of assets and investments	25.3	14.8
Purchases of investments	(909.4)	(569.0)
Proceeds from investments	1,391.4	1,265.5
Other investing activities	6.5	3.1
Cash Used for Investing Activities	(2,635.8)	(583.2)
Financing Activities		
Long-term debt proceeds	87.5	92.8
Payments on long-term debt	(400.0)	(15.9)
Net increase in commercial paper and short-term borrowings	210.9	33.6
Dividends paid to shareholders	(664.7)	(592.7)
Proceeds from stock option exercises	14.4	4.7
Other financing activities	(33.7)	(25.7)
Cash Used for Financing Activities	(785.6)	(503.2)
Discontinued Operations		
Cash provided by operating activities	—	6.7
Cash provided by investing activities	—	—
Cash provided by financing activities	—	—
Cash Provided by Discontinued Operations	—	6.7
Effect of Exchange Rate Changes on Cash	(3.8)	32.7
(Decrease) Increase in cash and cash items	(2,120.2)	533.3
Cash and cash items – Beginning of year	4,468.9	5,253.0
Cash and Cash Items – End of Period	\$2,348.7	\$5,786.3

The accompanying notes are an integral part of these statements.

Air Products and Chemicals, Inc. and Subsidiaries
CONSOLIDATED STATEMENTS OF EQUITY
(Unaudited)

Six Months Ended
31 March 2022

<i>(Millions of dollars, except for per share data)</i>	Common Stock	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock	Air Products Shareholders' Equity	Non- controlling Interests	Total Equity
Balance at 30 September 2021	\$249.4	\$1,115.8	\$15,678.3	(\$1,515.9)	(\$1,987.9)	\$13,539.7	\$548.3	\$14,088.0
Net income	—	—	1,090.9	—	—	1,090.9	(4.5)	1,086.4
Other comprehensive income	—	—	—	10.3	—	10.3	8.2	18.5
Dividends on common stock (per share \$3.12)	—	—	(691.8)	—	—	(691.8)	—	(691.8)
Dividends to noncontrolling interests	—	—	—	—	—	—	(1.0)	(1.0)
Share-based compensation	—	25.7	—	—	—	25.7	—	25.7
Issuance of treasury shares for stock option and award plans	—	(21.0)	—	—	2.5	(18.5)	—	(18.5)
Investments by noncontrolling interests	—	—	—	—	—	—	3.6	3.6
Purchase of noncontrolling interests	—	—	—	—	—	—	(1.9)	(1.9)
Other equity transactions	—	0.3	(1.5)	—	—	(1.2)	2.9	1.7
Balance at 31 March 2022	\$249.4	\$1,120.8	\$16,075.9	(\$1,505.6)	(\$1,985.4)	\$13,955.1	\$555.6	\$14,510.7

Six Months Ended
31 March 2021

<i>(Millions of dollars, except for per share data)</i>	Common Stock	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock	Air Products Shareholders' Equity	Non- controlling Interests	Total Equity
Balance at 30 September 2020	\$249.4	\$1,094.8	\$14,875.7	(\$2,140.1)	(\$2,000.0)	\$12,079.8	\$363.3	\$12,443.1
Net income	—	—	955.1	—	—	955.1	8.7	963.8
Other comprehensive income	—	—	—	315.7	—	315.7	35.3	351.0
Dividends on common stock (per share \$2.84)	—	—	(628.5)	—	—	(628.5)	—	(628.5)
Dividends to noncontrolling interests	—	—	—	—	—	—	(3.4)	(3.4)
Share-based compensation	—	22.3	—	—	—	22.3	—	22.3
Issuance of treasury shares for stock option and award plans	—	(21.7)	—	—	6.8	(14.9)	—	(14.9)
Investments by noncontrolling interests	—	—	—	—	—	—	8.7	8.7
Purchase of noncontrolling interests	—	(1.2)	—	—	—	(1.2)	(4.1)	(5.3)
Other equity transactions	—	0.2	(2.3)	—	—	(2.1)	0.1	(2.0)
Balance at 31 March 2021	\$249.4	\$1,094.4	\$15,200.0	(\$1,824.4)	(\$1,993.2)	\$12,726.2	\$408.6	\$13,134.8

The accompanying notes are an integral part of these statements.

Air Products and Chemicals, Inc. and Subsidiaries
CONSOLIDATED STATEMENTS OF EQUITY (cont.)
(Unaudited)

	Three Months Ended 31 March 2022							
<i>(Millions of dollars, except for per share data)</i>	Common Stock	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock	Air Products Shareholders' Equity	Non- controlling Interests	Total Equity
Balance at 31 December 2021	\$249.4	\$1,112.0	\$15,905.2	(\$1,452.3)	(\$1,989.2)	\$13,825.1	\$550.5	\$14,375.6
Net income	—	—	530.5	—	—	530.5	6.3	536.8
Other comprehensive income (loss)	—	—	—	(53.3)	—	(53.3)	(3.0)	(56.3)
Dividends on common stock (per share \$1.62)	—	—	(359.3)	—	—	(359.3)	—	(359.3)
Dividends to noncontrolling interests	—	—	—	—	—	—	(1.0)	(1.0)
Share-based compensation	—	11.6	—	—	—	11.6	—	11.6
Issuance of treasury shares for stock option and award plans	—	(2.9)	—	—	3.8	0.9	—	0.9
Other equity transactions	—	0.1	(0.5)	—	—	(0.4)	2.8	2.4
Balance at 31 March 2022	\$249.4	\$1,120.8	\$16,075.9	(\$1,505.6)	(\$1,985.4)	\$13,955.1	\$555.6	\$14,510.7

	Three Months Ended 31 March 2021							
<i>(Millions of dollars, except for per share data)</i>	Common Stock	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock	Air Products Shareholders' Equity	Non- controlling Interests	Total Equity
Balance at 31 December 2020	\$249.4	\$1,083.0	\$15,060.5	(\$1,713.3)	(\$1,996.0)	\$12,683.6	\$388.3	\$13,071.9
Net income	—	—	473.1	—	—	473.1	4.0	477.1
Other comprehensive income (loss)	—	—	—	(111.1)	—	(111.1)	15.6	(95.5)
Dividends on common stock (per share \$1.50)	—	—	(332.0)	—	—	(332.0)	—	(332.0)
Dividends to noncontrolling interests	—	—	—	—	—	—	(3.4)	(3.4)
Share-based compensation	—	12.0	—	—	—	12.0	—	12.0
Issuance of treasury shares for stock option and award plans	—	(0.7)	—	—	2.8	2.1	—	2.1
Investment by noncontrolling interests	—	—	—	—	—	—	4.0	4.0
Other equity transactions	—	0.1	(1.6)	—	—	(1.5)	0.1	(1.4)
Balance at 31 March 2021	\$249.4	\$1,094.4	\$15,200.0	(\$1,824.4)	(\$1,993.2)	\$12,726.2	\$408.6	\$13,134.8

The accompanying notes are an integral part of these statements.

Air Products and Chemicals, Inc. and Subsidiaries
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)

(Millions of dollars unless otherwise indicated, except for share and per share data)

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1. BASIS OF PRESENTATION AND MAJOR ACCOUNTING POLICIES

Basis of Presentation

The interim consolidated financial statements of Air Products and Chemicals, Inc. and its subsidiaries ("we," "our," "us," the "Company," "Air Products," or "registrant") included herein have been prepared by us, without audit, pursuant to the rules and regulations of the Securities and Exchange Commission (the "SEC"). Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. generally accepted accounting principles ("GAAP") have been condensed or omitted pursuant to such rules and regulations. In our opinion, the accompanying statements reflect adjustments necessary to present fairly the financial position, results of operations, and cash flows for those periods indicated and contain adequate disclosures to make the information presented not misleading. Adjustments included herein are of a normal, recurring nature unless otherwise disclosed in the notes to the interim consolidated financial statements. These notes, unless otherwise indicated, are presented on a continuing operations basis.

To fully understand the basis of presentation, the interim consolidated financial statements and related notes included herein should be read in conjunction with the consolidated financial statements and notes thereto included in our Annual Report on Form 10-K for the fiscal year ended 30 September 2021 (the "2021 Form 10-K"). Results of operations for interim periods are not necessarily indicative of the results of operations for a full year.

Major Accounting Policies

Refer to our 2021 Form 10-K for a description of major accounting policies. There have been no significant changes to these accounting policies during the first six months of fiscal year 2022.

Segment Reorganization

We reorganized our reporting segments effective 1 October 2021. Prior year segment information presented has been updated to conform with the fiscal year 2022 presentation. Refer to Note 19, *Business Segment Information*, for additional information.

Russia's Invasion of Ukraine

In March 2022, we announced our intent to divest our small industrial gas business in Russia due to Russia's invasion of Ukraine. As a result, we reclassified assets of \$54.1 that met the held for sale criteria in our Europe segment to "Other receivables and current assets" on our consolidated balance sheet as of 31 March 2022. The effect of this reclassification was excluded from our consolidated statement of cash flows for the six months ended 31 March 2022. Sales from this business were less than \$25 in fiscal year 2021.

In addition, we suspended the construction of a plant in Ukraine. Our consolidated balance sheet includes approximately \$45 as of 31 March 2022 within "Plant and equipment, net" related to this project. Sales from other operations in Ukraine were less than \$5 in fiscal year 2021.

Risks and Uncertainties

We are subject to various risks and uncertainties, including, but not limited to, those resulting from the COVID-19 pandemic as well as Russia's invasion of Ukraine. Our results of operations for the periods covered by this report were not materially impacted by these events; however, given the dynamic nature of these circumstances, uncertainty remains related to how these events may affect our business, results of operations, and overall financial performance in future periods. For example, our ability to recover the carrying value of our assets in Russia and Ukraine as well as our ability to exit contracts in Russia could be impacted by sanctions imposed on Russia and potential Russian retaliatory measures.

2. NEW ACCOUNTING GUIDANCE

New Accounting Guidance to be Implemented

Government Assistance

In November 2021, the Financial Accounting Standards Board ("FASB") issued disclosure guidance to increase the transparency of transactions an entity has with a government that are accounted for by applying a grant or contribution accounting model. This guidance is effective beginning in fiscal year 2023, with early adoption permitted. We are evaluating the impact this guidance will have on our consolidated financial statements.

Acquired Revenue Contracts in a Business Combination

In October 2021, the FASB issued an update for the recognition of contract assets and liabilities acquired in a business combination. Rather than recognizing such items at fair value on the acquisition date, the acquirer would measure and recognize contract assets and liabilities in accordance with ASC 606, *Revenue from Contracts with Customers*, as if it had originated the contract. This guidance is effective beginning in fiscal year 2024, with early adoption permitted. We are evaluating the impact this guidance will have on our consolidated financial statements.

Reference Rate Reform

In March 2020, the FASB issued an update to provide practical expedients and exceptions for applying GAAP to contracts, hedging relationships and other transactions affected by reference rate reform if certain criteria are met. This update is primarily applicable to our contracts and hedging relationships that reference the London Inter-Bank Offered Rate ("LIBOR"). The amendments may be applied to impacted contracts and hedges prospectively through 31 December 2022. To date, we have had no impacts on our hedging relationships related to reference rate reform. We will continue to evaluate the impact this guidance could have on our consolidated financial statements.

3. ACQUISITIONS

Fiscal Year 2021

Gain on Exchange With Joint Venture Partner

We previously held a 50% ownership interest in Tyczka Industrie-Gases GmbH ("TIG"), a joint venture in Germany with the Tyczka Group that was primarily a merchant gases business. We accounted for this arrangement as an equity method investment in our former Industrial Gases – EMEA segment.

Effective 23 February 2021 (the "acquisition date"), TIG was separated into two businesses, one of which we acquired on a 100% basis. Our partner paid us \$10.8 to acquire the other business. The exchange resulted in a gain of \$36.8 (\$27.3 after-tax), which is reflected as "Gain on exchange with joint venture partner" on our consolidated income statements for the three and six months ended 31 March 2021. The gain included \$12.7 from the revaluation of our previously held equity interest in the portion of the business that we retained and \$24.1 from the sale of our equity interest in the remaining business. The gain was not recorded in segment results.

We estimated an acquisition date fair value of \$15.4 for our previously held equity interest in the acquired portion of the business using a market approach, which considered historical earnings and the application of a market-based multiple derived from comparable transactions.

We accounted for the acquisition as a business combination. The results of this business are consolidated within our Europe segment.

4. REVENUE RECOGNITION

The majority of our revenue is generated from our sale of gas customers within the regional industrial gases segments. We distribute gases through either our on-site or merchant supply mode depending on various factors, including the customer's volume requirements and location. The Corporate and other segment serves our sale of equipment customers.

Disaggregation of Revenue

The tables below present our consolidated sales disaggregated by supply mode for each of our reporting segments for the three and six months ended 31 March 2022 and 2021. We believe this presentation best depicts the nature, timing, type of customer, and contract terms for our sales.

	Americas	Asia	Europe	Middle East and India	Corporate and other	Total	%
Three Months Ended 31 March 2022							
On-site	\$716.5	\$460.4	\$292.0	\$17.3	\$—	\$1,486.2	51 %
Merchant	470.1	290.8	446.6	11.6	—	1,219.1	41 %
Sale of Equipment	—	—	—	—	239.8	239.8	8 %
Total	\$1,186.6	\$751.2	\$738.6	\$28.9	\$239.8	\$2,945.1	100 %
Three Months Ended 31 March 2021							
On-site	\$636.7	\$416.0	\$182.7	\$19.6	\$—	\$1,255.0	50 %
Merchant	419.4	281.5	375.7	6.6	—	1,083.2	43 %
Sale of Equipment	—	—	—	—	163.8	163.8	7 %
Total	\$1,056.1	\$697.5	\$558.4	\$26.2	\$163.8	\$2,502.0	100 %
	Americas	Asia	Europe	Middle East and India	Corporate and other	Total	%
Six Months Ended 31 March 2022							
On-site	\$1,514.1	\$912.0	\$617.6	\$33.6	\$—	\$3,077.3	52 %
Merchant	896.6	619.6	865.2	19.0	—	2,400.4	40 %
Sale of Equipment	—	—	—	—	461.6	461.6	8 %
Total	\$2,410.7	\$1,531.6	\$1,482.8	\$52.6	\$461.6	\$5,939.3	100 %
Six Months Ended 31 March 2021							
On-site	\$1,178.0	\$830.9	\$359.2	\$31.8	\$—	\$2,399.9	49 %
Merchant	811.1	584.1	742.7	13.9	—	2,151.8	44 %
Sale of Equipment	—	—	—	—	325.5	325.5	7 %
Total	\$1,989.1	\$1,415.0	\$1,101.9	\$45.7	\$325.5	\$4,877.2	100 %

Remaining Performance Obligations

As of 31 March 2022, the transaction price allocated to remaining performance obligations is estimated to be approximately \$24 billion. This amount includes fixed-charge contract provisions associated with our on-site and sale of equipment supply modes. We estimate that approximately half of this revenue will be recognized over the next five years and the balance thereafter.

Expected revenue associated with new on-site plants that are not yet on stream is excluded from this amount. In addition, this amount excludes consideration associated with contracts having an expected duration of less than one year and variable consideration for which we recognize revenue at the amount to which we have the right to invoice, including energy pass-through costs.

In the future, actual amounts will differ due to events outside of our control, including, but not limited to, inflationary price escalations; currency exchange rates; and amended, terminated, or renewed contracts.

Contract Balances

The table below details balances arising from contracts with customers:

	Balance Sheet Location	31 March 2022	30 September 2021
Assets			
Contract assets – current	Other receivables and current assets	\$56.8	\$119.4
Contract fulfillment costs – current	Other receivables and current assets	226.6	125.5
Liabilities			
Contract liabilities – current	Payables and accrued liabilities	565.8	366.8
Contract liabilities – noncurrent	Other noncurrent liabilities	70.8	58.4

Changes to our contract balances primarily relate to our sale of equipment contracts. During the six months ended 31 March 2022, we recognized approximately \$155 in revenue associated with sale of equipment contracts that was included within our contract liabilities as of 30 September 2021.

5. DISCONTINUED OPERATIONS

In the first quarter of fiscal year 2021, we recorded a tax benefit of \$10.3 primarily from the settlement of a state tax appeal related to the gain on the sale of our former Performance Materials Division in fiscal year 2017. The benefit is reflected within "Income from discontinued operations, net of tax" on our consolidated income statement for the six months ended 31 March 2021. Our consolidated statement of cash flows for the six months ended 31 March 2021 includes \$6.7 received as part of the settlement.

6. INVENTORIES

The components of inventories are as follows:

	31 March 2022	30 September 2021
Finished goods	\$173.5	\$150.7
Work in process	22.3	24.0
Raw materials, supplies and other	311.7	279.2
Inventories	\$507.5	\$453.9

7. EQUITY AFFILIATES

Equity Affiliate Investment in Jazan Integrated Gasification and Power Company ("JIGPC")

On 27 October 2021, we made an initial investment of \$1.6 billion in Jazan Integrated Gasification and Power Company ("JIGPC"). JIGPC is a joint venture with Saudi Aramco Power Company (a subsidiary of Aramco), ACWA Power, and Air Products Qudra in the Jazan Economic City, Saudi Arabia. Our investment represents a 55% interest in the joint venture, of which 4% is attributable to the non-controlling partner of Air Products Qudra. The \$1.6 billion investment, which includes approximately \$130 from the non-controlling partner, is primarily in the form of shareholder loans that qualify as in-substance common stock in the joint venture.

We expect to make an additional investment in JIGPC of approximately \$1 billion in 2023.

We determined JIGPC is a variable interest entity for which we are not the primary beneficiary as we do not have the power to direct the activities that are most significant to the economic performance of the joint venture. Instead, these activities, including plant dispatch, operating and maintenance decisions, budgeting, capital expenditures, and financing, require unanimous approval of the owners or are controlled by the customer. Since we have the ability to exercise significant influence in the joint venture, we accounted for our investment in JIGPC under the equity method within the Middle East and India segment.

Pursuant to the joint venture agreement, cash distributions will include preferred distributions to some shareholders. We record our share of income considering current distributions and projections of cash available to Air Products over the life of the venture.

As of 31 March 2022, the carrying value of our investment totaled \$1,779.0 and is presented as "Investments in and advances to equity affiliates" on our consolidated balance sheet. Our loss exposure is limited to our investment in the joint venture.

JIGPC Joint Venture

On 27 September 2021, JIGPC signed definitive agreements for the acquisition of project assets from Aramco for \$12 billion and entered into related project financing for the purchase. JIGPC will complete the acquisition of the project assets, which include power blocks, gasifiers, air separation units, syngas cleanup assets, and utilities, in two phases. The first phase was completed on 27 October 2021 for \$7 billion. The second phase is expected to be completed in 2023. JIGPC will commission, operate, and maintain the project assets to supply electricity, steam, hydrogen and utilities to Aramco's refinery and terminal complex under a 25-year agreement, which commenced in the first quarter of fiscal year 2022.

JIGPC accounted for the asset transfer as a financing. Accordingly, the joint venture recorded a financing receivable upon acquisition and will recognize financing income over the supply term.

Jazan Gas Project Company

Jazan Gas Project Company ("JGPC"), a joint venture between Air Products and ACWA Holding, entered into a 20-year oxygen and nitrogen supply agreement in 2015 to supply Aramco's oil refinery and power plant in Jazan, Saudi Arabia. We own 26% of the joint venture.

In October 2021, the supply agreement between JGPC and Aramco was terminated, and JGPC sold its air separation units to Aramco. We initially sold these assets to JGPC and deferred revenue and profit equal to our ownership percentage in the joint venture. With the termination of the supply agreement and sale of the air separation units complete, we recognized the remaining deferred profit, net of other project finalization costs, in equity affiliates' income in the first quarter of fiscal year 2022.

As of 30 September 2021, our consolidated balance sheets included \$94.4 reflected within "Payables and accrued liabilities" for our obligation to make equity contributions based on our proportionate share of advances received by the joint venture under an equity bridge loan. The joint venture utilized a portion of the proceeds from the sale of the air separation units to repay its outstanding debt, including the equity bridge loan. Accordingly, we recorded a noncash adjustment of \$94.4 in the first quarter of fiscal year 2022 to reduce our obligation to zero with a corresponding reduction to the carrying value of our investment in the joint venture.

8. GOODWILL

Changes to the carrying amount of consolidated goodwill by segment for the six months ended 31 March 2022 are as follows:

	Americas	Asia	Europe	Middle East and India	Corporate and other	Total
Goodwill, net at 30 September 2021	\$151.0	\$184.3	\$533.5	\$8.0	\$34.7	\$911.5
Acquisitions ^(A)	—	—	17.0	7.5	—	24.5
Currency translation and other	1.4	(0.3)	(24.3)	—	—	(23.2)
Goodwill, net at 31 March 2022	\$152.4	\$184.0	\$526.2	\$15.5	\$34.7	\$912.8

^(A) We recognized goodwill in the first half of fiscal year 2022 for expected cost synergies associated with small business combinations, of which \$3.2 is deductible for tax purposes.

	31 March 2022	30 September 2021
Goodwill, gross	\$1,250.8	\$1,239.2
Accumulated impairment losses ^(A)	(338.0)	(327.7)
Goodwill, net	\$912.8	\$911.5

^(A) Accumulated impairment losses include the impacts of currency translation. These losses are attributable to our Latin America reporting unit ("LASA") within the Americas segment.

We review goodwill for impairment annually in the fourth quarter of the fiscal year and whenever events or changes in circumstances indicate that the carrying value of goodwill might not be recoverable.

9. FINANCIAL INSTRUMENTS

Currency Price Risk Management

Our earnings, cash flows, and financial position are exposed to foreign currency risk from foreign currency-denominated transactions and net investments in foreign operations. It is our policy to seek to minimize our cash flow volatility from changes in currency exchange rates. This is accomplished by identifying and evaluating the risk that our cash flows will change in value due to changes in exchange rates and by executing strategies necessary to manage such exposures. Our objective is to maintain economically balanced currency risk management strategies that provide adequate downside protection.

Forward Exchange Contracts

We enter into forward exchange contracts to reduce the cash flow exposure to foreign currency fluctuations associated with highly anticipated cash flows and certain firm commitments, such as the purchase of plant and equipment. We also enter into forward exchange contracts to hedge the cash flow exposure on intercompany loans and third-party debt. This portfolio of forward exchange contracts consists primarily of Euros and U.S. Dollars. The maximum remaining term of any forward exchange contract currently outstanding and designated as a cash flow hedge at 31 March 2022 is 3.8 years.

Forward exchange contracts are also used to hedge the value of investments in certain foreign subsidiaries and affiliates by creating a liability in a currency in which we have a net equity position. The primary currency pair in this portfolio of forward exchange contracts is Euros and U.S. Dollars.

We also utilize forward exchange contracts that are not designated as hedges. These contracts are used to economically hedge foreign currency-denominated monetary assets and liabilities, primarily working capital. The primary objective of these forward exchange contracts is to protect the value of foreign currency-denominated monetary assets and liabilities from the effects of volatility in foreign exchange rates that might occur prior to their receipt or settlement. This portfolio of forward exchange contracts consists of many different foreign currency pairs, with a profile that changes from time to time depending on our business activity and sourcing decisions.

The table below summarizes our outstanding currency price risk management instruments:

	31 March 2022		30 September 2021	
	US\$ Notional	Years Average Maturity	US\$ Notional	Years Average Maturity
Forward Exchange Contracts:				
Cash flow hedges	\$3,882.1	0.6	\$3,465.2	0.6
Net investment hedges	616.8	2.5	638.0	3.0
Not designated	510.8	0.2	692.6	0.1
Total Forward Exchange Contracts	\$5,009.7	0.8	\$4,795.8	0.8

We also use foreign currency-denominated debt to hedge the foreign currency exposures of our net investment in certain foreign subsidiaries. The designated foreign currency-denominated debt and related accrued interest was €1,304.6 million (\$1,443.9) at 31 March 2022 and €1,297.5 million (\$1,502.6) at 30 September 2021. The designated foreign currency-denominated debt is presented within "Long-term debt" on the consolidated balance sheets.

Debt Portfolio Management

It is our policy to identify, on a continuing basis, the need for debt capital and to evaluate the financial risks inherent in funding the Company with debt capital. Reflecting the result of this ongoing review, our debt portfolio and hedging program are managed with the intent to (1) reduce funding risk with respect to borrowings made by us to preserve our access to debt capital and provide debt capital as required for funding and liquidity purposes, and (2) manage the aggregate interest rate risk and the debt portfolio in accordance with certain debt management parameters.

Interest Rate Management Contracts

We enter into interest rate swaps to change the fixed/variable interest rate mix of our debt portfolio in order to maintain the percentage of fixed- and variable-rate debt within the parameters set by management. In accordance with these parameters, the agreements are used to manage interest rate risks and costs inherent in our debt portfolio. Our interest rate management portfolio generally consists of fixed-to-floating interest rate swaps (which are designated as fair value hedges), pre-issuance interest rate swaps and treasury locks (which hedge the interest rate risk associated with anticipated fixed-rate debt issuances and are designated as cash flow hedges), and floating-to-fixed interest rate swaps (which are designated as cash flow hedges). As of 31 March 2022, the outstanding interest rate swaps were denominated in U.S. Dollars. The notional amount of the interest rate swap agreements is equal to or less than the designated debt being hedged. When interest rate swaps are used to hedge variable-rate debt, the indices of the swaps and the debt to which they are designated are the same. It is our policy not to enter into any interest rate management contracts which lever a move in interest rates on a greater than one-to-one basis.

Cross Currency Interest Rate Swap Contracts

We enter into cross currency interest rate swap contracts when our risk management function deems necessary. These contracts may entail both the exchange of fixed- and floating-rate interest payments periodically over the life of the agreement and the exchange of one currency for another currency at inception and at a specified future date. The contracts are used to hedge either certain net investments in foreign operations or non-functional currency cash flows related to intercompany loans. The current cross currency interest rate swap portfolio consists of fixed-to-fixed swaps primarily between U.S. Dollars and Chinese Renminbi, U.S. Dollars and Indian Rupees, and U.S. Dollars and Chilean Pesos.

The table below summarizes our outstanding interest rate management contracts and cross currency interest rate swaps:

	31 March 2022				30 September 2021			
	US\$ Notional	Average Pay %	Average Receive %	Years Average Maturity	US\$ Notional	Average Pay %	Average Receive %	Years Average Maturity
Interest rate swaps (fair value hedge)	\$800.0	Various	1.64 %	5.5	\$200.0	LIBOR	2.76 %	0.1
Cross currency interest rate swaps (net investment hedge)	\$214.4	4.34 %	3.15 %	1.7	\$210.2	4.32 %	3.14 %	2.2
Cross currency interest rate swaps (cash flow hedge)	\$1,013.6	4.90 %	2.92 %	2.3	\$1,005.7	4.98 %	2.93 %	2.7
Cross currency interest rate swaps (not designated)	\$—	—%	—%	0.0	\$4.2	5.39 %	3.54 %	2.2

The table below provides the amounts recorded on the consolidated balance sheet related to cumulative basis adjustments for fair value hedges:

Balance Sheet Location	Carrying amounts of hedged item		Cumulative hedging adjustment, included in carrying amount	
	31 March 2022	30 September 2021	31 March 2022	30 September 2021
Current portion of long-term debt	\$—	\$400.5	\$—	\$0.5
Long-term debt	2,065.1	—	(24.0)	—

The table below summarizes the fair value and balance sheet location of our outstanding derivatives:

	Balance Sheet Location	31 March 2022	30 September 2021	Balance Sheet Location	31 March 2022	30 September 2021
Derivatives Designated as Hedging Instruments:						
Forward exchange contracts	Other receivables and current assets	\$43.9	\$35.1	Payables and accrued liabilities	\$50.9	\$57.2
Interest rate management contracts	Other receivables and current assets	10.6	16.0	Payables and accrued liabilities	22.2	5.2
Forward exchange contracts	Other noncurrent assets	6.2	5.5	Other noncurrent liabilities	18.7	25.2
Interest rate management contracts	Other noncurrent assets	15.5	18.1	Other noncurrent liabilities	76.5	27.5
Total Derivatives Designated as Hedging Instruments		\$76.2	\$74.7		\$168.3	\$115.1
Derivatives Not Designated as Hedging Instruments:						
Forward exchange contracts	Other receivables and current assets	3.7	8.7	Payables and accrued liabilities	3.1	6.4
Total Derivatives Not Designated as Hedging Instruments		\$3.7	\$8.7		\$3.1	\$6.4
Total Derivatives		\$79.9	\$83.4		\$171.4	\$121.5

Refer to Note 10, *Fair Value Measurements*, which defines fair value, describes the method for measuring fair value, and provides additional disclosures regarding fair value measurements.

The tables below summarize gains (losses) recognized in other comprehensive income during the period related to our net investment and cash flow hedging relationships:

	Three Months Ended 31 March		Six Months Ended 31 March	
	2022	2021	2022	2021
Net Investment Hedging Relationships				
Forward exchange contracts	(\$4.2)	\$18.6	\$10.3	(\$17.3)
Foreign currency debt	39.4	63.5	67.0	(0.7)
Cross currency interest rate swaps	(7.4)	1.9	(9.7)	(12.3)
Total Amount Recognized in OCI	27.8	84.0	67.6	(30.3)
Tax effects	(6.9)	(21.2)	(16.7)	7.4
Net Amount Recognized in OCI	\$20.9	\$62.8	\$50.9	(\$22.9)

	Three Months Ended 31 March		Six Months Ended 31 March	
	2022	2021	2022	2021
Derivatives in Cash Flow Hedging Relationships				
Forward exchange contracts	(\$40.1)	(\$57.3)	(\$63.5)	\$7.4
Forward exchange contracts, excluded components	2.0	(4.3)	(0.7)	(7.0)
Other ^(A)	(16.6)	43.2	(2.1)	(2.3)
Total Amount Recognized in OCI	(54.7)	(18.4)	(66.3)	(1.9)
Tax effects	15.3	13.2	26.4	10.5
Net Amount Recognized in OCI	(\$39.4)	(\$5.2)	(\$39.9)	\$8.6

^(A) Other primarily includes interest rate and cross currency interest rate swaps for which excluded components are recognized in "Payables and accrued liabilities" and "Other receivables and current assets" as a component of accrued interest payable and accrued interest receivable, respectively. These excluded components are recorded in "Other non-operating income (expense), net" over the life of the cross currency interest rate swap. Other also includes the recognition of our share of gains and losses, net of tax, related to interest rate swaps held by our equity affiliates.

The tables below summarize the location and amounts recognized in income related to our cash flow and fair value hedging relationships by contract type:

	Three Months Ended 31 March							
	Sales		Cost of Sales		Interest Expense		Other Non-Operating Income (Expense), Net	
	2022	2021	2022	2021	2022	2021	2022	2021
Total presented in consolidated income statements that includes effects of hedging below	\$2,945.1	\$2,502.0	\$2,151.6	\$1,745.5	\$32.3	\$36.1	\$9.1	\$16.8
(Gain) Loss Effects of Cash Flow Hedging:								
Forward Exchange Contracts:								
Amount reclassified from OCI into income	\$0.3	\$0.1	\$0.4	(\$1.8)	\$—	\$—	\$26.4	\$54.0
Amount excluded from effectiveness testing recognized in earnings based on amortization approach	—	—	—	—	—	—	1.1	2.6
Other:								
Amount reclassified from OCI into income	—	—	—	—	1.5	1.4	4.9	(8.3)
Total (Gain) Loss Reclassified from OCI to Income	0.3	0.1	0.4	(1.8)	1.5	1.4	32.4	48.3
Tax effects	(0.1)	—	(0.1)	0.4	(0.6)	(0.5)	(7.8)	(11.9)
Net (Gain) Loss Reclassified from OCI to Income	\$0.2	\$0.1	\$0.3	(\$1.4)	\$0.9	\$0.9	\$24.6	\$36.4
(Gain) Loss Effects of Fair Value Hedging:								
Other:								
Hedged items	\$—	\$—	\$—	\$—	(\$22.0)	(\$1.4)	\$—	\$—
Derivatives designated as hedging instruments	—	—	—	—	22.0	1.4	—	—
Total (Gain) Loss Recognized in Income	\$—	\$—	\$—	\$—	\$—	\$—	\$—	\$—

	Six Months Ended 31 March							
	Sales		Cost of Sales		Interest Expense		Other Non-Operating Income (Expense), Net	
	2022	2021	2022	2021	2022	2021	2022	2021
Total presented in consolidated income statements that includes effects of hedging below	\$5,939.3	\$4,877.2	\$4,375.2	\$3,377.9	\$62.8	\$72.8	\$31.7	\$35.4
(Gain) Loss Effects of Cash Flow Hedging:								
Forward Exchange Contracts:								
Amount reclassified from OCI into income	\$0.7	\$0.2	\$0.3	(\$1.9)	\$—	\$—	\$40.9	\$2.4
Amount excluded from effectiveness testing recognized in earnings based on amortization approach	—	—	—	—	—	—	2.4	5.4
Other:								
Amount reclassified from OCI into income	—	—	—	—	2.9	2.8	12.2	37.0
Total (Gain) Loss Reclassified from OCI to Income	0.7	0.2	0.3	(1.9)	2.9	2.8	55.5	44.8
Tax effects	(0.2)	—	(0.1)	0.6	(1.1)	(1.0)	(13.3)	(10.8)
Net (Gain) Loss Reclassified from OCI to Income	\$0.5	\$0.2	\$0.2	(\$1.3)	\$1.8	\$1.8	\$42.2	\$34.0
(Gain) Loss Effects of Fair Value Hedging:								
Other:								
Hedged items	\$—	\$—	\$—	\$—	(\$24.5)	(\$2.7)	\$—	\$—
Derivatives designated as hedging instruments	—	—	—	—	24.5	2.7	—	—
Total (Gain) Loss Recognized in Income	\$—	\$—	\$—	\$—	\$—	\$—	\$—	\$—

The tables below summarize the location and amounts recognized in income related to our derivatives not designated as hedging instruments by contract type:

	Three Months Ended 31 March			
	Other Income (Expense), Net		Other Non-Operating Income (Expense), Net	
	2022	2021	2022	2021
The Effects of Derivatives Not Designated as Hedging Instruments:				
Forward Exchange Contracts	\$0.3	(\$0.3)	(\$0.7)	(\$0.3)
Other	—	—	0.1	(0.1)
Total (Gain) Loss Recognized in Income	\$0.3	(\$0.3)	(\$0.6)	(\$0.4)

	Six Months Ended 31 March			
	Other Income (Expense), Net		Other Non-Operating Income (Expense), Net	
	2022	2021	2022	2021
The Effects of Derivatives Not Designated as Hedging Instruments:				
Forward Exchange Contracts	\$1.4	\$2.5	(\$1.3)	(\$1.6)
Other	—	—	0.2	0.4
Total (Gain) Loss Recognized in Income	\$1.4	\$2.5	(\$1.1)	(\$1.2)

The amount of unrealized gains and losses related to cash flow hedges as of 31 March 2022 that are expected to be reclassified to earnings in the next twelve months is not material.

The cash flows related to all derivative contracts are reported in the operating activities section of the consolidated statements of cash flows.

Credit Risk-Related Contingent Features

Certain derivative instruments are executed under agreements that require us to maintain a minimum credit rating with both Standard & Poor's and Moody's. If our credit rating falls below this threshold, the counterparty to the derivative instruments has the right to request full collateralization on the derivatives' net liability position. The net liability position of derivatives with credit risk-related contingent features was \$110.1 and \$53.4 as of 31 March 2022 and 30 September 2021, respectively. Because our current credit rating is above the various pre-established thresholds, no collateral has been posted on these liability positions.

Counterparty Credit Risk Management

We execute financial derivative transactions with counterparties that are highly rated financial institutions, all of which are investment grade at this time. Some of our underlying derivative agreements give us the right to require the institution to post collateral if its credit rating falls below the pre-established thresholds with Standard & Poor's or Moody's. The collateral that the counterparties would be required to post was \$28.6 and \$38.1 as of 31 March 2022 and 30 September 2021, respectively. No financial institution is required to post collateral at this time as all have credit ratings at or above threshold.

10. FAIR VALUE MEASUREMENTS

Fair value is defined as an exit price, or the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

The fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value into three broad levels as follows:

Level 1 — Quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2 — Inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the asset or liability.

Level 3 — Inputs that are unobservable for the asset or liability based on our own assumptions about the assumptions market participants would use in pricing the asset or liability.

The methods and assumptions used to measure the fair value of financial instruments are as follows:

Short-term Investments

Short-term investments primarily include time deposits with original maturities greater than three months and less than one year. We estimated the fair value of our short-term investments, which approximates carrying value as of the balance sheet date, using Level 2 inputs within the fair value hierarchy. Level 2 measurements were based on current interest rates for similar investments with comparable credit risk and time to maturity.

Derivatives

The fair value of our interest rate management contracts and forward exchange contracts are quantified using the income approach and are based on estimates using standard pricing models. These models consider the value of future cash flows as of the balance sheet date, discounted to a present value using discount factors that match both the time to maturity and currency of the underlying instruments. These standard pricing models utilize inputs that are derived from or corroborated by observable market data such as interest rate yield curves as well as currency spot and forward rates; therefore, the fair value of our derivatives is classified as a Level 2 measurement. On an ongoing basis, we randomly test a subset of our valuations against valuations received from the transaction's counterparty to validate the accuracy of our standard pricing models. Counterparties to these derivative contracts are highly rated financial institutions.

Refer to Note 9, *Financial Instruments*, for a description of derivative instruments, including details related to the balance sheet line classifications.

Long-term Debt, Including Related Party

The fair value of our debt is based on estimates using standard pricing models that consider the value of future cash flows as of the balance sheet date, discounted to a present value using discount factors that match both the time to maturity and currency of the underlying instruments. These standard valuation models utilize observable market data such as interest rate yield curves and currency spot rates; therefore, the fair value of our debt is classified as a Level 2 measurement. We generally perform the computation of the fair value of these instruments.

The carrying values and fair values of financial instruments were as follows:

	31 March 2022		30 September 2021	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Assets				
Derivatives				
Forward exchange contracts	\$53.8	\$53.8	\$49.3	\$49.3
Interest rate management contracts	26.1	26.1	34.1	34.1
Liabilities				
Derivatives				
Forward exchange contracts	\$72.7	\$72.7	\$88.8	\$88.8
Interest rate management contracts	98.7	98.7	32.7	32.7
Long-term debt, including current portion and related party	7,234.3	6,905.6	7,634.8	7,812.2

The carrying amounts reported on the consolidated balance sheets for cash and cash items, short-term investments, trade receivables, payables and accrued liabilities, accrued income taxes, and short-term borrowings approximate fair value due to the short-term nature of these instruments. Accordingly, these items have been excluded from the above table.

The table below summarizes assets and liabilities on the consolidated balance sheets that are measured at fair value on a recurring basis:

	31 March 2022				30 September 2021			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Assets at Fair Value								
Derivatives								
Forward exchange contracts	\$53.8	\$—	\$53.8	\$—	\$49.3	\$—	\$49.3	\$—
Interest rate management contracts	26.1	—	26.1	—	34.1	—	34.1	—
Total Assets at Fair Value	\$79.9	\$—	\$79.9	\$—	\$83.4	\$—	\$83.4	\$—
Liabilities at Fair Value								
Derivatives								
Forward exchange contracts	\$72.7	\$—	\$72.7	\$—	\$88.8	\$—	\$88.8	\$—
Interest rate management contracts	98.7	—	98.7	—	32.7	—	32.7	—
Total Liabilities at Fair Value	\$171.4	\$—	\$171.4	\$—	\$121.5	\$—	\$121.5	\$—

11. DEBT

Debt Repayment

In November 2021, we repaid a 3.0% Senior Note of \$400, plus interest, on its maturity date.

Credit Facilities

2021 Credit Agreement

On 31 March 2021, we entered into a five-year \$2,500 revolving credit agreement maturing 31 March 2026 with a syndicate of banks (the "2021 Credit Agreement"), under which senior unsecured debt is available to us and certain of our subsidiaries. On 31 March 2022, we amended the 2021 Credit Agreement to exercise our option to increase the maximum borrowing capacity to \$2,750 and transition the benchmark rate from LIBOR to the Secured Overnight Financing Rate ("SOFR"). All other terms remain unchanged from the original agreement. No borrowings were outstanding under the 2021 Credit Agreement as of 31 March 2022.

Other

We also have credit facilities available to certain of our foreign subsidiaries totaling \$486.5, of which \$446.9 was borrowed and outstanding as of 31 March 2022. The amount borrowed and outstanding as of 30 September 2021 was \$176.2.

12. RETIREMENT BENEFITS

The components of net periodic (benefit) cost for our defined benefit pension plans for the three and six months ended 31 March 2022 and 2021 were as follows:

	Pension Benefits			
	2022		2021	
	U.S.	International	U.S.	International
Three Months Ended 31 March				
Service cost	\$4.6	\$5.6	\$5.3	\$5.9
Interest cost	18.4	7.6	17.3	6.3
Expected return on plan assets	(42.1)	(17.6)	(48.7)	(21.0)
Prior service cost amortization	0.3	—	0.3	—
Actuarial loss amortization	16.6	3.8	19.6	4.8
Settlements	0.9	0.2	—	—
Other	—	0.2	—	0.2
Net Periodic (Benefit) Cost	(\$1.3)	(\$0.2)	(\$6.2)	(\$3.8)

Six Months Ended 31 March	Pension Benefits			
	2022		2021	
	U.S.	International	U.S.	International
Service cost	\$9.2	\$11.2	\$10.7	\$11.6
Interest cost	36.8	15.2	34.5	12.4
Expected return on plan assets	(84.2)	(35.3)	(97.3)	(41.2)
Prior service cost amortization	0.6	—	0.6	—
Actuarial loss amortization	33.3	7.7	39.3	9.4
Settlements	1.8	0.2	—	—
Other	—	1.0	—	0.5
Net Periodic (Benefit) Cost	(\$2.5)	\$—	(\$12.2)	(\$7.3)

Our service costs are primarily included within "Cost of sales" and "Selling and administrative" on our consolidated income statements. The amount of service costs capitalized in the first six months of fiscal years 2022 and 2021 were not material. The non-service related impacts, including pension settlement losses, are presented outside operating income within "Other non-operating income (expense), net."

For the six months ended 31 March 2022 and 2021, our cash contributions to funded pension plans and benefit payments under unfunded pension plans were \$16.1 and \$27.7, respectively. Total contributions for fiscal year 2022 are expected to be approximately \$40 to \$50. During fiscal year 2021, total contributions were \$44.6.

During the three and six months ended 31 March 2022, we recognized actuarial gain amortization of \$0.4 and \$0.8, respectively, for our other postretirement benefits plan. During the three and six months ended 31 March 2021, we recognized actuarial gain amortization of \$0.5 and \$0.9, respectively, for our other postretirement benefits plan.

13. COMMITMENTS AND CONTINGENCIES

Litigation

We are involved in various legal proceedings, including commercial, competition, environmental, intellectual property, regulatory, product liability, and insurance matters. We do not currently believe there are any legal proceedings, individually or in the aggregate, that are reasonably possible to have a material impact on our financial condition, results of operations, or cash flows.

In September 2010, the Brazilian Administrative Council for Economic Defense ("CADE") issued a decision against our Brazilian subsidiary, Air Products Brasil Ltda., and several other Brazilian industrial gas companies for alleged anticompetitive activities. CADE imposed a civil fine of R\$179.2 million (approximately \$38 at 31 March 2022) on Air Products Brasil Ltda. This fine was based on a recommendation by a unit of the Brazilian Ministry of Justice, following an investigation beginning in 2003, which alleged violation of competition laws with respect to the sale of industrial and medical gases. The fines are based on a percentage of our total revenue in Brazil in 2003.

We have denied the allegations made by the authorities and filed an appeal in October 2010 with the Brazilian courts. On 6 May 2014, our appeal was granted and the fine against Air Products Brasil Ltda. was dismissed. CADE has appealed that ruling and the matter remains pending. We, with advice of our outside legal counsel, have assessed the status of this matter and have concluded that, although an adverse final judgment after exhausting all appeals is possible, such a judgment is not probable. As a result, no provision has been made in the consolidated financial statements. In the event of an adverse final judgment, we estimate the maximum possible loss to be the full amount of the fine of R\$179.2 million (approximately \$38 at 31 March 2022) plus interest accrued thereon until final disposition of the proceedings.

Additionally, Winter Storm Uri, a severe winter weather storm in the U.S. Gulf Coast in February 2021, disrupted our operations and caused power and natural gas prices to spike significantly in Texas. We remain in litigation of a dispute regarding energy management services related to the impact of this event, and other disputes may arise from such power price increases. In addition, legislative action may affect power supply and energy management charges. While it is reasonably possible that we could incur additional costs related to power supply and energy management services in Texas related to the winter storm, it is too early to estimate potential losses, if any, given significant unknowns resulting from the unusual nature of this event.

Environmental

In the normal course of business, we are involved in legal proceedings under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA," the federal Superfund law), Resource Conservation and Recovery Act ("RCRA"), and similar state and foreign environmental laws relating to the designation of certain sites for investigation or remediation. Presently, there are 32 sites on which a final settlement or remediation has not been achieved where we, usually along with others, have been designated a potentially responsible party by environmental authorities or are otherwise engaged in investigation or remediation, including cleanup activity at certain of our current and former manufacturing sites. We continually monitor these sites for which we have environmental exposure.

Accruals for environmental loss contingencies are recorded when it is probable that a liability has been incurred and the amount of loss can be reasonably estimated. The consolidated balance sheets at 31 March 2022 and 30 September 2021 included an accrual of \$74.1 and \$76.7, respectively, primarily as part of other noncurrent liabilities. The environmental liabilities will be paid over a period of up to 30 years. We estimate the exposure for environmental loss contingencies to range from \$73 to a reasonably possible upper exposure of \$87 as of 31 March 2022.

Actual costs to be incurred at identified sites in future periods may vary from the estimates, given inherent uncertainties in evaluating environmental exposures. Using reasonably possible alternative assumptions of the exposure level could result in an increase to the environmental accrual. Due to the inherent uncertainties related to environmental exposures, a significant increase to the reasonably possible upper exposure level could occur if a new site is designated, the scope of remediation is increased, a different remediation alternative is identified, or a significant increase in our proportionate share occurs. We do not expect that any sum we may have to pay in connection with environmental matters in excess of the amounts recorded or disclosed above would have a material adverse impact on our financial position or results of operations in any one year.

Pace

At 31 March 2022, \$38.7 of the environmental accrual was related to the Pace facility.

In 2006, we sold our Amines business, which included operations at Pace, Florida, and recognized a liability for retained environmental obligations associated with remediation activities at Pace. We are required by the Florida Department of Environmental Protection ("FDEP") and the United States Environmental Protection Agency ("USEPA") to continue our remediation efforts. We recognized a before-tax expense of \$42 in fiscal year 2006 in results from discontinued operations and recorded an environmental accrual of \$42 in continuing operations on the consolidated balance sheets.

During the second quarter of fiscal year 2020, we completed an updated cost review of the environmental remediation status at the Pace facility. The review was completed in conjunction with requirements to maintain financial assurance per the Consent Order issued by the FDEP discussed below. Based on our review, we expect ongoing activities to continue for 30 years. Additionally, we will require near-term spending to install new groundwater recovery wells and ancillary equipment, in addition to future capital to consider the extended time horizon for remediation at the site. As a result of these changes, we increased our environmental accrual for this site by \$19 in continuing operations on the consolidated balance sheets and recognized a before-tax expense of \$19 in results from discontinued operations in the second quarter of fiscal year 2020. There have been no significant changes to the estimated exposure range related to the Pace facility since the second quarter of fiscal year 2020.

We have implemented many of the remedial corrective measures at the Pace facility required under 1995 Consent Orders issued by the FDEP and the USEPA. Contaminated soils have been bioremediated, and the treated soils have been secured in a lined on-site corrective action management unit. Several groundwater recovery systems have been installed to contain and remove contamination from groundwater. We completed an extensive assessment of the site to determine the efficacy of existing measures, what additional corrective measures may be needed, and whether newer remediation technologies that were not available in the 1990s might be suitable to more quickly and effectively remediate groundwater. Based on assessment results, we completed a focused feasibility study that has identified alternative approaches that may more effectively remove contaminants. We continue to review alternative remedial approaches with the FDEP and have completed additional field work during 2021 to support the design of an improved groundwater recovery network with the objective of targeting areas of higher contaminant concentration and avoiding areas of high groundwater iron which has proven to be a significant operability issue for the project. In the first quarter of 2015, we entered into a new Consent Order with the FDEP requiring us to continue our remediation efforts at the Pace facility, along with the completion of a cost review every 5 years.

Piedmont

At 31 March 2022, \$8.9 of the environmental accrual was related to the Piedmont site.

On 30 June 2008, we sold our Elkton, Maryland, and Piedmont, South Carolina, production facilities and the related North American atmospheric emulsions and global pressure sensitive adhesives businesses. In connection with the sale, we recognized a liability for retained environmental obligations associated with remediation activities at the Piedmont site. This site is under active remediation for contamination caused by an insolvent prior owner.

We are required by the South Carolina Department of Health and Environmental Control ("SCDHEC") to address both contaminated soil and groundwater. Numerous areas of soil contamination have been addressed, and contaminated groundwater is being recovered and treated. The SCDHEC issued its final approval to the site-wide feasibility study on 13 June 2017 and the Record of Decision for the site on 27 June 2018, after which we signed a Consent Agreement Amendment memorializing our obligations to complete the cleanup of the site. Remediation has started in accordance with the design, which includes in-situ chemical oxidation treatment, as well as the installation of a soil vapor extraction system to remove volatile organic compounds from the unsaturated soils beneath the impacted areas of the plant. We estimate that source area remediation and groundwater recovery and treatment will continue through 2029. Thereafter, we expect this site to go into a state of monitored natural attenuation through 2047.

We recognized a before-tax expense of \$24 in 2008 as a component of income from discontinued operations and recorded an environmental liability of \$24 in continuing operations on the consolidated balance sheets. There have been no significant changes to the estimated exposure.

Pasadena

At 31 March 2022, \$11.0 of the environmental accrual was related to the Pasadena site.

During the fourth quarter of 2012, management committed to permanently shutting down our polyurethane intermediates ("PUI") production facility in Pasadena, Texas. In shutting down and dismantling the facility, we have undertaken certain obligations related to soil and groundwater contaminants. We have been pumping and treating groundwater to control off-site contaminant migration in compliance with regulatory requirements and under the approval of the Texas Commission on Environmental Quality ("TCEQ"). We estimate that the pump and treat system will continue to operate until 2042.

We plan to perform additional work to address other environmental obligations at the site. This additional work includes remediating, as required, impacted soils, investigating groundwater west of the former PUI facility, performing post closure care for two closed RCRA surface impoundment units, establishing engineering controls, and performing a chemical-reduction pilot study to treat impacted soils. In 2012, we estimated the total exposure at this site to be \$13. There have been no significant changes to the estimated exposure.

Unconditional Purchase Obligations

We have unconditional purchase obligations related to helium and rare gases totaling approximately \$8.7 billion as of 31 March 2022. The majority of these obligations occur after fiscal year 2027. Helium purchases include crude feedstock supply to helium refining plants in North America as well as refined helium purchases from sources around the world.

14. SHARE-BASED COMPENSATION

We have various share-based compensation programs, which include deferred stock units, stock options, and restricted stock. During the six months ended 31 March 2022, we granted market-based and time-based deferred stock units. Under all programs, the terms of the awards are fixed at the grant date. We issue shares from treasury stock upon the payout of deferred stock units, the exercise of stock options, and the issuance of restricted stock awards. As of 31 March 2022, there were 1.3 million shares available for future grant under our Long-Term Incentive Plan ("LTIP").

Share-based compensation cost recognized on the consolidated income statements is summarized below:

	Three Months Ended 31 March		Six Months Ended 31 March	
	2022	2021	2022	2021
Before-tax share-based compensation cost	\$10.5	\$12.9	\$27.3	\$22.4
Income tax benefit	(2.6)	(3.1)	(6.7)	(5.4)
After-tax share-based compensation cost	\$7.9	\$9.8	\$20.6	\$17.0

Before-tax share-based compensation cost is primarily included in "Selling and administrative" on our consolidated income statements. The amount of share-based compensation cost capitalized in the first six months of fiscal years 2022 and 2021 was not material.

Deferred Stock Units

During the six months ended 31 March 2022, we granted 74,364 market-based deferred stock units. The market-based deferred stock units are earned over the performance period beginning 1 October 2021 and ending 30 September 2024, conditioned on the level of our total shareholder return in relation to a defined peer group over the three-year performance period.

The market-based deferred stock units had an estimated grant-date fair value of \$427.23 per unit, which was estimated using a Monte Carlo simulation model. The model utilizes multiple input variables that determine the probability of satisfying the market condition stipulated in the grant and calculates the fair value of the awards. We generally expense the grant-date fair value of these awards on a straight-line basis over the vesting period. The calculation of the fair value of market-based deferred stock units used the following assumptions:

Expected volatility	30.5 %
Risk-free interest rate	0.8 %
Expected dividend yield	2.1 %

In addition, during the six months ended 31 March 2022, we granted 106,721 time-based deferred stock units at a weighted average grant-date fair value of \$283.34.

15. ACCUMULATED OTHER COMPREHENSIVE LOSS

The tables below summarize changes in accumulated other comprehensive loss ("AOCL"), net of tax, attributable to Air Products for the three and six months ended 31 March 2022:

	Derivatives qualifying as hedges	Foreign currency translation adjustments	Pension and postretirement benefits	Total
Balance at 31 December 2021	(\$17.5)	(\$857.0)	(\$577.8)	(\$1,452.3)
Other comprehensive loss before reclassifications	(39.4)	(58.8)	—	(98.2)
Amounts reclassified from AOCL	26.0	—	15.9	41.9
Net current period other comprehensive (loss) income	(13.4)	(58.8)	15.9	(56.3)
Amount attributable to noncontrolling interests	1.1	(4.2)	0.1	(3.0)
Balance at 31 March 2022	(\$32.0)	(\$911.6)	(\$562.0)	(\$1,505.6)

	Derivatives qualifying as hedges	Foreign currency translation adjustments	Pension and postretirement benefits	Total
Balance at 30 September 2021	(\$28.3)	(\$893.8)	(\$593.8)	(\$1,515.9)
Other comprehensive loss before reclassifications	(39.9)	(18.2)	—	(58.1)
Amounts reclassified from AOCL	44.7	—	31.9	76.6
Net current period other comprehensive income (loss)	4.8	(18.2)	31.9	18.5
Amount attributable to noncontrolling interests	8.5	(0.4)	0.1	8.2
Balance at 31 March 2022	(\$32.0)	(\$911.6)	(\$562.0)	(\$1,505.6)

The table below summarizes the reclassifications out of AOCL and the affected line item on the consolidated income statements:

	Three Months Ended 31 March		Six Months Ended 31 March	
	2022	2021	2022	2021
Loss on Cash Flow Hedges, net of tax				
Sales	\$0.2	\$0.1	\$0.5	\$0.2
Cost of sales	0.3	(1.4)	0.2	(1.3)
Interest expense	0.9	0.9	1.8	1.8
Other non-operating income (expense), net	24.6	36.4	42.2	34.0
Total Loss on Cash Flow Hedges, net of tax	\$26.0	\$36.0	\$44.7	\$34.7
Pension and Postretirement Benefits, net of tax^(A)	\$15.9	\$18.3	\$31.9	\$36.6

^(A) The components of net periodic benefit cost reclassified out of AOCL include items such as prior service cost amortization, actuarial loss amortization, and settlements and are included in "Other non-operating income (expense), net" on the consolidated income statements. Refer to Note 12, *Retirement Benefits*, for additional information.

16. EARNINGS PER SHARE

The table below details the computation of basic and diluted earnings per share ("EPS"):

	Three Months Ended 31 March		Six Months Ended 31 March	
	2022	2021	2022	2021
Numerator				
Net income from continuing operations	\$530.5	\$473.1	\$1,090.9	\$944.8
Net income from discontinued operations	—	—	—	10.3
Net Income Attributable to Air Products	\$530.5	\$473.1	\$1,090.9	\$955.1
Denominator (in millions)				
Weighted average common shares — Basic	222.0	221.6	222.0	221.6
Effect of dilutive securities				
Employee stock option and other award plans	0.5	0.9	0.5	0.9
Weighted average common shares — Diluted	222.5	222.5	222.5	222.5
Per Share Data*				
Basic EPS from continuing operations	\$2.39	\$2.13	\$4.91	\$4.26
Basic EPS from discontinued operations	—	—	—	0.05
Basic EPS Attributable to Air Products	\$2.39	\$2.13	\$4.91	\$4.31
Diluted EPS from continuing operations	\$2.38	\$2.13	\$4.90	\$4.25
Diluted EPS from discontinued operations	—	—	—	0.05
Diluted EPS Attributable to Air Products	\$2.38	\$2.13	\$4.90	\$4.29

*EPS is calculated independently for each component and may not sum to total EPS due to rounding.

For the three and six months ended 31 March 2022 and 2021, there were no antidilutive outstanding share-based awards.

17. INCOME TAXES

Effective Tax Rate

Our effective tax rate was 18.6% and 17.8% for the three and six months ended 31 March 2022, respectively. Our effective tax rate was 20.4% and 19.8% for the three and six months ended 31 March 2021, respectively.

Cash Paid for Taxes (Net of Cash Refunds)

Income tax payments, net of refunds, were \$236.9 and \$223.8 for the six months ended 31 March 2022 and 2021, respectively. Fiscal year 2021 reflects an income tax refund of \$6.7 that is related to cash provided by discontinued operations.

18. SUPPLEMENTAL INFORMATION

Related Party Transactions

We have related party sales to some of our equity affiliates and joint venture partners as well as other income primarily from fees charged for use of Air Products' patents and technology. Sales to and other income from related parties totaled approximately \$60 and \$125 for the three and six months ended 31 March 2022, respectively, and \$40 and \$90 for the three and six months ended 31 March 2021, respectively. Sales agreements with related parties include terms that are consistent with those that we believe would have been negotiated at an arm's length with an independent party. As of 31 March 2022 and 30 September 2021, our consolidated balance sheets included related party trade receivables of approximately \$185 and \$90, respectively.

We also have related party debt primarily for a loan with our joint venture partner, Lu'An Clean Energy Company, which partially funded the acquisition of their assets by a consolidated joint venture in 2018. Total related party debt, including the current portion, was \$371.1 and \$358.4 as of 31 March 2022 and 30 September 2021, respectively.

Facility Closure

During the second quarter of fiscal year 2021, we recorded a charge of \$23.2 primarily for a noncash write-down of assets associated with a contract termination in the Americas segment. This charge is reflected as "Facility closure" on our consolidated income statements for the three and six months ended 31 March 2021 and was not recorded in segment results.

Changes in Estimates

Changes in estimates on projects accounted for under the cost incurred input method are recognized as a cumulative adjustment for the inception-to-date effect of such change. We recorded changes to project cost estimates during the first six months of fiscal years 2022 and 2021 for which the impact to operating income was not material. Our changes in estimates would not have significantly impacted amounts recorded in prior years.

Lessee Accounting

During the six months ended 31 March 2022, we recorded noncash right-of-use asset additions of approximately \$150, primarily for operating leases that had not yet commenced as of 30 September 2021.

19. BUSINESS SEGMENT INFORMATION

Our reporting segments reflect the manner in which our chief operating decision maker reviews results and allocates resources. Effective 1 October 2021, we report our results under the following five reporting segments:

- Americas;
- Asia;
- Europe;
- Middle East and India; and
- Corporate and other

Except for the Corporate and other segment, each reporting segment meets the definition of an operating segment and does not include the aggregation of multiple operating segments. Our Corporate and other segment includes the aggregation of three operating segments that meet the aggregation criteria under GAAP.

Segment Reorganization

The segment results presented below reflect the segment reorganization announced on 4 November 2021. The reorganization included the separation of our former Industrial Gases – EMEA (Europe, Middle East, and Africa) segment into two separate reporting segments: (1) Europe and (2) Middle East and India. The results of an affiliate formerly reflected in the Asia segment are now reported in the Middle East and India segment. Additionally, the results of our Industrial Gases – Global operating segment are reflected in the Corporate and other segment. The prior year information presented below has been updated to conform with the fiscal year 2022 presentation.

Summary by Business Segment

	Americas	Asia	Europe	Middle East and India	Corporate and other	Total
Three Months Ended 31 March 2022						
Sales	\$1,186.6	\$751.2	\$738.6	\$28.9	\$239.8	\$2,945.1 ^(A)
Operating income (loss)	275.5	203.6	116.4	4.8	(38.4)	561.9 ^(B)
Depreciation and amortization	153.7	111.8	50.3	6.9	13.2	335.9
Equity affiliates' income	20.1	6.2	23.3	71.1	0.1	120.8
Three Months Ended 31 March 2021						
Sales	\$1,056.1	\$697.5	\$558.4	\$26.2	\$163.8	\$2,502.0 ^(A)
Operating income (loss)	263.4	198.5	132.9	6.7	(66.6)	534.9 ^(B)
Depreciation and amortization	153.3	109.7	51.0	6.6	8.7	329.3
Equity affiliates' income	32.3	7.1	12.6	16.1	1.7	69.8

^(A) Sales relate to external customers only. All intersegment sales are eliminated in consolidation.

^(B) Refer to the *Reconciliation to Consolidated Results* section below.

	Americas	Asia	Europe	Middle East and India	Corporate and other	Total
Six Months Ended 31 March 2022						
Sales	\$2,410.7	\$1,531.6	\$1,482.8	\$52.6	\$461.6	\$5,939.3 ^(A)
Operating income (loss)	542.7	424.7	215.6	9.6	(107.7)	1,084.9 ^(B)
Depreciation and amortization	309.0	222.6	100.1	13.0	23.5	668.2
Equity affiliates' income	54.3	12.8	37.2	163.4	0.9	268.6
Six Months Ended 31 March 2021						
Sales	\$1,989.1	\$1,415.0	\$1,101.9	\$45.7	\$325.5	\$4,877.2 ^(A)
Operating income (loss)	489.2	413.3	270.4	10.7	(109.6)	1,074.0 ^(B)
Depreciation and amortization	305.1	217.6	100.3	12.7	17.3	653.0
Equity affiliates' income	54.6	15.9	27.5	37.3	3.8	139.1
Total Assets						
31 March 2022	\$7,801.9	\$7,712.6	\$3,933.9	\$2,676.8	\$5,324.5	\$27,449.7
30 September 2021	7,092.5	7,349.4	3,830.3	800.6	7,786.4	26,859.2

^(A) Sales relate to external customers only. All intersegment sales are eliminated in consolidation.

^(B) Refer to the *Reconciliation to Consolidated Results* section below.

Reconciliation to Consolidated Results

The table below reconciles total operating income disclosed in the tables above to consolidated operating income as reflected on our consolidated income statements:

	Three Months Ended 31 March		Six Months Ended 31 March	
	2022	2021	2022	2021
Operating Income				
Total	\$561.9	\$534.9	\$1,084.9	\$1,074.0
Facility closure	—	(23.2)	—	(23.2)
Gain on exchange with joint venture partner	—	36.8	—	36.8
Consolidated Operating Income	\$561.9	\$548.5	\$1,084.9	\$1,087.6

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

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The following discussion should be read in conjunction with the interim consolidated financial statements and the accompanying notes contained in this quarterly report. Unless otherwise stated, financial information is presented in millions of dollars, except for per share data. Except for net income, which includes the results of discontinued operations, financial information is presented on a continuing operations basis.

Comparisons of our results of operations and liquidity and capital resources are for the second quarter and first six months of fiscal years 2022 and 2021. The disclosures provided in this quarterly report are complementary to those made in our Annual Report on Form 10-K for the fiscal year ended 30 September 2021, which was filed with the SEC on 18 November 2021.

We reorganized our reporting segments effective 1 October 2021. Prior year segment information presented has been updated to conform with the fiscal year 2022 presentation. Refer to Note 19, *Business Segment Information*, to the consolidated financial statements for additional information.

The financial measures discussed below are presented in accordance with U.S. generally accepted accounting principles ("GAAP"), except as noted. We present certain financial measures on an "adjusted" or "non-GAAP" basis because we believe such measures, when viewed together with financial results computed in accordance with GAAP, provide a more complete understanding of the factors and trends affecting our historical financial performance. For each non-GAAP financial measure, including adjusted diluted earnings per share ("EPS"), adjusted EBITDA, adjusted EBITDA margin, adjusted effective tax rate, and capital expenditures, we present a reconciliation to the most directly comparable financial measure calculated in accordance with GAAP. These reconciliations and explanations regarding the use of non-GAAP measures are presented under "Reconciliations of Non-GAAP Financial Measures" beginning on page 48.

For information concerning activity with our related parties, refer to Note 18, *Supplemental Information*, to the consolidated financial statements.

Russia's Invasion of Ukraine

The safety of our team members in areas affected by Russia's invasion of Ukraine remains our top priority.

Additionally, in March we announced our intent to divest our small industrial gas business in Russia, which had fiscal year 2021 sales of less than \$25. The results of our business in Russia are reflected in the Europe segment. We do not intend to pursue any new business development activities in the country.

We also have operations in Ukraine that generated sales of less than \$5 in fiscal year 2021, and we have suspended the construction of a plant.

Our results of operations for the periods covered by this report were not materially impacted by these events; however, given the dynamic nature of these circumstances, uncertainty remains related to how these events may affect our business, results of operations, and overall financial performance in future periods. For example, our ability to recover the carrying value of our assets in Russia and Ukraine as well as our ability to exit contracts in Russia could be impacted by sanctions imposed on Russia and potential Russian retaliatory measures.

SECOND QUARTER 2022 VS. SECOND QUARTER 2021

SECOND QUARTER 2022 IN SUMMARY

- Sales of \$2,945.1 increased 18%, or \$443.1, primarily due to higher volumes, positive pricing, and higher energy cost pass-through to customers. Merchant volumes and pricing improved across the regional segments, while our on-site business remained stable. Pricing actions were particularly successful in Europe, where our team was able to implement increases to offset unprecedented power and fuel costs.
- Operating income of \$561.9 increased 2%, or \$13.4, primarily due to higher volumes and pricing actions that more than offset higher costs. Operating margin of 19.1% decreased 280 basis points ("bp"), primarily due to the unfavorable costs and higher energy cost pass-through to customers, which increases sales but not operating income.
- Equity affiliates' income of \$120.8 increased 73%, or \$51.0, primarily driven by the Jazan Integrated Gasification and Power Company ("JIGPC") joint venture, which began contributing to our results in the Middle East and India segment in late October 2021.
- Net income of \$536.8 increased 13%, or \$59.7, while net income margin of 18.2% decreased 90 bp.
- Adjusted EBITDA of \$1,018.6 increased 9%, or \$84.6, while adjusted EBITDA margin of 34.6% decreased 270 bp.
- Diluted EPS of \$2.38 increased 12%, or \$0.25 per share, and adjusted diluted EPS of \$2.38 increased 14%, or \$0.30 per share. A summary table of changes in diluted EPS is presented below.
- We increased the quarterly dividend on our common stock to \$1.62 per share, representing an 8% increase, or \$0.12 per share, from the previous dividend of \$1.50 per share. This is the 40th consecutive year we have increased our quarterly dividend, highlighting our commitment to creating shareholder value through capital deployment and rewarding our investors through dividends.

Changes in Diluted EPS Attributable to Air Products

The per share impacts presented in the tables below were calculated independently and do not sum to the total change in diluted EPS due to rounding.

	Three Months Ended 31 March		Increase (Decrease)
	2022	2021	
Diluted EPS From Continuing Operations	\$2.38	\$2.13	\$0.25
Operating Impacts			
Underlying business			
Volume			\$0.18
Price, net of variable costs			0.14
Other costs			(0.21)
Currency			(0.01)
Facility closure			0.08
Gain on exchange with joint venture partner			(0.12)
Total Operating Impacts			\$0.06
Other Impacts			
Equity affiliates' income			\$0.18
Interest expense			0.01
Other non-operating income/expense, net			(0.03)
Change in effective tax rate			0.05
Noncontrolling interests			(0.01)
Total Other Impacts			\$0.20
Total Change in Diluted EPS From Continuing Operations			\$0.25

	Three Months Ended 31 March		Increase (Decrease)
	2022	2021	
Diluted EPS From Continuing Operations	\$2.38	\$2.13	\$0.25
Facility closure	—	0.08	(0.08)
Gain on exchange with joint venture partner	—	(0.12)	0.12
Adjusted Diluted EPS From Continuing Operations	\$2.38	\$2.08	\$0.30

SECOND QUARTER 2022 RESULTS OF OPERATIONS

Discussion of Consolidated Results

	Three Months Ended 31 March		\$ Change	Change
	2022	2021		
GAAP Measures				
Sales	\$2,945.1	\$2,502.0	\$443.1	18 %
Operating income	561.9	548.5	13.4	2 %
Operating margin	19.1 %	21.9 %		(280) bp
Equity affiliates' income	\$120.8	\$69.8	\$51.0	73 %
Net income	536.8	477.1	59.7	13 %
Net income margin	18.2 %	19.1 %		(90) bp
Non-GAAP Measures				
Adjusted EBITDA	\$1,018.6	\$934.0	\$84.6	9 %
Adjusted EBITDA margin	34.6 %	37.3 %		(270) bp

Sales % Change from Prior Year

Volume	8 %
Price	6 %
Energy cost pass-through	6 %
Currency	(2 %)
Total Consolidated Sales Change	18 %

Sales of \$2,945.1 increased 18%, or \$443.1, due to higher volumes of 8%, positive pricing of 6%, and higher energy cost pass-through to customers of 6%, partially offset by unfavorable currency impacts of 2%. Volume growth was primarily driven by new assets, recovery in hydrogen, strong merchant demand, and higher activity in our sale of equipment businesses. Energy costs were significantly higher versus the prior year, particularly in Europe. Continued focus on pricing actions in our merchant businesses, including those intended to recover the escalating power and fuel costs, resulted in price improvement in our three largest segments. Contractual provisions associated with our on-site business, which represents approximately half our total company sales, allow us to pass the higher energy costs through to our customers. The unfavorable currency impact was primarily driven by the weakening of the Euro against the U.S. Dollar.

Cost of Sales and Gross Margin

Cost of sales of \$2,151.6 increased 22%, or \$382.9, from total cost of sales of \$1,768.7 in the prior year, which included a \$23.2 charge for a facility closure as discussed below. The increase was due to higher energy cost pass-through to customers of \$151, higher costs associated with sales volumes of \$149, and unfavorable costs of \$147, partially offset by favorable currency impacts of \$42. The unfavorable cost impact included higher operating and distribution costs that were driven by higher planned maintenance, supply chain challenges, costs for a helium storage cavern to support reliable helium supply to our customers globally, as well as costs for resources needed to support new project start-ups. Gross margin of 26.9% decreased 240 bp from 29.3% in the prior year, primarily due to unfavorable costs and higher energy cost pass-through to customers, partially offset by the positive impact of our pricing actions.

Facility Closure

During the second quarter of fiscal year 2021, we recorded a charge of \$23.2 (\$17.4 after-tax, or \$0.08 per share) primarily for a noncash write-down of assets associated with a contract termination in the Americas segment. This charge is reflected as "Facility closure" on our consolidated income statements for the three months ended 31 March 2021 and was not recorded in segment results.

Selling and Administrative

Selling and administrative expense of \$227.0 increased 8%, or \$16.7, primarily driven by increased headcount to support our growth strategy, costs associated with our new global headquarters, and inflation. Selling and administrative expense as a percentage of sales decreased to 7.7% from 8.4% in the prior year.

Research and Development

Research and development expense of \$23.7 increased 12%, or \$2.6. Research and development expense as a percentage of sales of 0.8% was flat versus the prior year.

Gain on Exchange with Joint Venture Partner

In the second quarter of fiscal year 2021, we recognized a gain of \$36.8 (\$27.3 after-tax, or \$0.12 per share) on an exchange with the Tyczka Group, a former joint venture partner. As part of the exchange, we separated our 50/50 joint venture in Germany into two separate businesses so each party could acquire a portion of the business on a 100% basis. The gain included \$12.7 from the revaluation of our previously held equity interest in the portion of the business that we retained and \$24.1 from the sale of our interest in the remaining business. The gain is reflected as "Gain on exchange with joint venture partner" on our consolidated income statements for the three months ended 31 March 2021 and was not recorded in segment results for our Europe segment. Refer to Note 3, *Acquisitions*, to the consolidated financial statements for additional information.

Other Income (Expense), Net

Other income of \$19.1 increased 95%, or \$9.3, primarily due to income from the sale of assets.

Operating Income and Operating Margin

Operating income of \$561.9 increased 2%, or \$13.4, primarily due to higher volumes of \$49 and positive pricing, net of power and fuel costs, of \$40. These factors were partially offset by unfavorable costs of \$59 that were driven by business development, higher planned maintenance, as well as various external factors, including inflation and supply chain challenges. In addition, the prior year included a charge of \$23 associated with a facility closure, partially offset by a gain of \$37 on an exchange with a joint venture partner.

Operating margin of 19.1% decreased 280 bp from 21.9% in the prior year, primarily due to the unfavorable costs and higher energy cost pass-through to customers, which increases sales but not operating income.

Equity Affiliates' Income

Equity affiliates' income of \$120.8 increased 73%, or \$51.0, primarily driven by the JIGPC joint venture, which began contributing to our results in the Middle East and India segment in late October 2021.

Interest Expense

	Three Months Ended 31 March	
	2022	2021
Interest incurred	\$40.4	\$42.6
Less: Capitalized interest	8.1	6.5
Interest expense	\$32.3	\$36.1

Interest incurred decreased 5%, or \$2.2, primarily driven by a lower debt balance. Capitalized interest increased 25%, or \$1.6, due to a higher carrying value of projects under construction.

Other Non-Operating Income (Expense), Net

Other non-operating income of \$9.1 decreased 46%, or \$7.7, driven mainly by lower pension income. Non-service pension income decreased in fiscal year 2022 primarily due to lower expected returns on plan assets for the U.S. salaried pension plan and the U.K. pension plan.

Net Income and Net Income Margin

Net income of \$536.8 increased 13%, or \$59.7, primarily due to higher volumes, pricing, and equity affiliates' income, partially offset by higher costs. Net income margin of 18.2% decreased 90 bp from 19.1% in the prior year. The margin decline included an unfavorable impact of approximately 100 bp from higher energy cost pass-through to customers, which increases sales but not net income.

Adjusted EBITDA and Adjusted EBITDA Margin

Adjusted EBITDA of \$1,018.6 increased 9%, or \$84.6, primarily due to higher volumes, pricing, and equity affiliates' income, partially offset by higher costs. Adjusted EBITDA margin of 34.6% decreased 270 bp from 37.3% in the prior year. The margin decline included an unfavorable impact of approximately 200 bp from higher energy cost pass-through to customers.

Effective Tax Rate

The effective tax rate equals the income tax provision divided by income from continuing operations before taxes. Our effective tax rate was 18.6% and 20.4% for the three months ended 31 March 2022 and 2021, respectively. The current year rate was lower primarily due to higher equity affiliates' income that is primarily presented net of income taxes within income from continuing operations on our consolidated income statements. The current year rate also includes the impact of an agreement reached with foreign tax authorities that resolved uncertainties related to unrecognized tax benefits.

The adjusted effective tax rate was 18.6% and 20.2% for the three months ended 31 March 2022 and 2021, respectively.

Segment Analysis

Americas

	Three Months Ended 31 March			
	2022	2021	\$ Change	% Change
Sales	\$1,186.6	\$1,056.1	\$130.5	12 %
Operating income	275.5	263.4	12.1	5 %
Operating margin	23.2 %	24.9 %		(170) bp
Equity affiliates' income	\$20.1	\$32.3	(\$12.2)	(38 %)
Adjusted EBITDA	449.3	449.0	0.3	— %
Adjusted EBITDA margin	37.9 %	42.5 %		(460) bp

Sales % Change from Prior Year

Volume	6 %
Price	5 %
Energy cost pass-through	2 %
Currency	(1 %)
Total Americas Sales Change	12 %

Sales of \$1,186.6 increased 12%, or \$130.5, due to higher volumes of 6%, positive pricing of 5%, and higher energy cost pass-through to customers of 2%, partially offset by unfavorable currency of 1%. The volume improvement was primarily driven by a recovery in hydrogen and better demand for merchant products in North America. However, merchant volumes were weaker in South America due to lower demand for medical oxygen. Pricing improved across all major merchant product lines, which more than offset power cost increases in the region.

Operating income of \$275.5 increased 5%, or \$12.1, primarily from pricing, net of power and fuel costs, of \$37 and favorable volumes of \$6. These factors were partially offset by unfavorable costs of \$30, which were primarily attributable to higher planned maintenance, inflation, and supply chain challenges, including driver shortages that are broadly impacting the industry. Operating margin of 23.2% decreased 170 bp from 24.9% in the prior year, as higher costs and negative volume mix were only partially offset by higher pricing.

Equity affiliates' income of \$20.1 decreased 38%, or \$12.2, primarily driven by lower merchant volumes in our Mexico affiliate.

Asia

	Three Months Ended 31 March		\$ Change	% Change
	2022	2021		
Sales	\$751.2	\$697.5	\$53.7	8 %
Operating income	203.6	198.5	5.1	3 %
Operating margin	27.1 %	28.5 %		(140) bp
Equity affiliates' income	\$6.2	\$7.1	(\$0.9)	(13 %)
Adjusted EBITDA	321.6	315.3	6.3	2 %
Adjusted EBITDA margin	42.8 %	45.2 %		(240) bp

Sales % Change from Prior Year

Volume	6 %
Price	1 %
Energy cost pass-through	1 %
Currency	— %
Total Asia Sales Change	8 %

Sales of \$751.2 increased 8%, or \$53.7, due to higher volumes of 6%, positive pricing of 1%, and higher energy cost pass-through to customers of 1%. The volume improvement was driven by several new traditional industrial gas plants in our on-site business; however, merchant demand was negatively impacted due to COVID-19 restrictions in certain parts of China. Currency was flat versus the prior year.

Operating income of \$203.6 increased 3%, or \$5.1. Higher volumes of \$16 were partially offset by unfavorable operating costs of \$6, which were primarily driven by inflation, resources needed to support new project start-ups, and higher distribution and product sourcing costs. Additionally, higher power and fuel costs exceeded our pricing actions by \$5. We expect higher costs for planned maintenance activities in the second half of the year.

Operating margin of 27.1% decreased 140 bp from 28.5% in the prior year, as the positive volume impact was more than offset by higher energy and other costs.

Equity affiliates' income of \$6.2 decreased 13%, or \$0.9.

Europe

	Three Months Ended 31 March		\$ Change	% Change
	2022	2021		
Sales	\$738.6	\$558.4	\$180.2	32 %
Operating income	116.4	132.9	(16.5)	(12 %)
Operating margin	15.8 %	23.8 %		(800) bp
Equity affiliates' income	\$23.3	\$12.6	\$10.7	85 %
Adjusted EBITDA	190.0	196.5	(6.5)	(3 %)
Adjusted EBITDA margin	25.7 %	35.2 %		(950) bp

Sales % Change from Prior Year

Volume	2 %
Price	14 %
Energy cost pass-through	24 %
Currency	(8 %)
Total Europe Sales Change	32 %

Sales of \$738.6 increased 32%, or \$180.2, due to higher energy cost pass-through to customers of 24%, higher pricing of 14%, and higher volumes of 2%, partially offset by unfavorable currency impacts of 8%. Energy costs remained elevated in the second quarter of fiscal year 2022. In our on-site business, we are contractually able to pass these costs through to our customers. In our merchant business, we implemented pricing actions across all major product lines, which recovered the higher power and fuel costs experienced during the second quarter as well as a portion of higher costs from the first quarter. We remain focused on ongoing actions to continue recovering the higher power and fuel costs. Volumes improved primarily due to higher demand for merchant products. The unfavorable currency impacts were primarily driven by the weakening of the Euro against the U.S. Dollar.

Operating income of \$116.4 decreased 12%, or \$16.5. Unfavorable costs of \$14 were primarily attributable to higher operating and distribution costs associated with energy-related supply chain challenges, inflation, and development of new projects. Operating income was also impacted by unfavorable volume mix of \$7 and unfavorable currency of \$6. These factors were partially offset by significant pricing actions in our merchant business, which more than offset the escalating power costs and increased operating income by \$10. Operating margin of 15.8% decreased 800 bp from 23.8% in the prior year primarily due to higher energy cost pass-through to customers, which increases sales but not operating income and negatively impacted margin by approximately 450 basis points.

Equity affiliates' income of \$23.3 increased 85%, or \$10.7, primarily driven by an affiliate in Italy.

Middle East and India

	Three Months Ended 31 March		\$ Change	% Change
	2022	2021		
Sales	\$28.9	\$26.2	\$2.7	10 %
Operating income	4.8	6.7	(1.9)	(28 %)
Equity affiliates' income	71.1	16.1	55.0	342 %
Adjusted EBITDA	82.8	29.4	53.4	182 %

Sales of \$28.9 increased 10%, or \$2.7, primarily due to a new plant in India and a small acquisition. Operating income of \$4.8 decreased 28%, or \$1.9, primarily due to unfavorable volume mix. Equity affiliates' income of \$71.1 increased \$55.0 primarily driven by the JIGPC joint venture, which began contributing to our results in late October 2021.

Corporate and other

The Corporate and other segment includes sales of cryogenic and gas processing equipment for air separation as well as our liquefied natural gas ("LNG"), turbo machinery equipment and services, and distribution sale of equipment businesses. The results of this segment also include centralized global management costs and corporate support functions that benefit all segments as well as income and expense not directly associated with the other segments, such as foreign exchange gains and losses.

	Three Months Ended 31 March			
	2022	2021	\$ Change	% Change
Sales	\$239.8	\$163.8	\$76.0	46 %
Operating loss	(38.4)	(66.6)	28.2	42 %
Adjusted EBITDA	(25.1)	(56.2)	31.1	55 %

Sales of \$239.8 increased 46%, or \$76.0, and operating loss of \$38.4 decreased 42%, or \$28.2, primarily due to higher sale of equipment project activity in air separation equipment and other non-LNG products.

FIRST SIX MONTHS 2022 VS. FIRST SIX MONTHS 2021

FIRST SIX MONTHS 2022 IN SUMMARY

- Sales of \$5,939.3 increased 22%, or \$1,062.1, primarily due to higher energy cost pass-through to customers, higher volumes, and positive pricing.
- Operating income of \$1,084.9 was flat as higher volumes and pricing were offset by higher costs. Operating margin of 18.3% decreased 400 bp, primarily due to higher energy cost pass-through to customers, which increases our sales but not operating income.
- Equity affiliates' income of \$268.6 increased 93%, or \$129.5, primarily driven by the JIGPC joint venture, which began contributing to our results in the Middle East and India segment in late October 2021.
- Net income of \$1,086.4 increased 13%, or \$122.6, while net income margin of 18.3% decreased 150 bp.
- Adjusted EBITDA of \$2,021.7 increased 8%, or \$155.6, while adjusted EBITDA margin of 34.0% decreased 430 bp.
- Diluted EPS of \$4.90 increased 15%, or \$0.65 per share, and adjusted diluted EPS of \$4.90 increased 17%, or \$0.70 per share. A summary table of changes in diluted EPS is presented below.
- We increased the quarterly dividend on our common stock to \$1.62 per share, representing an 8% increase, or \$0.12 per share, from the previous dividend of \$1.50 per share. This is the 40th consecutive year we have increased our quarterly dividend, highlighting our commitment to creating shareholder value through capital deployment and rewarding our investors through dividends.

Changes in Diluted EPS Attributable to Air Products

The per share impacts presented in the tables below were calculated independently and do not sum to the total change in diluted EPS due to rounding.

	Six Months Ended 31 March		Increase (Decrease)
	2022	2021	
Total Diluted EPS	\$4.90	\$4.29	\$0.61
Less: Diluted EPS from income from discontinued operations	—	0.05	(0.05)
Diluted EPS From Continuing Operations	\$4.90	\$4.25	\$0.65
Operating Impacts			
Underlying business			
Volume			\$0.36
Price, net of variable costs			0.11
Other costs			(0.42)
Currency			(0.01)
Facility closure			0.08
Gain on exchange with joint venture partner			(0.12)
Total Operating Impacts			\$—
Other Impacts			
Equity affiliates' income			0.47
Interest expense			0.04
Other non-operating income/expense, net			(0.02)
Change in effective tax rate			0.11
Noncontrolling interests			0.06
Total Other Impacts			\$0.66
Total Change in Diluted EPS From Continuing Operations			\$0.65

	Six Months Ended 31 March		Increase (Decrease)
	2022	2021	
Diluted EPS From Continuing Operations	\$4.90	\$4.25	\$0.65
Facility closure	—	0.08	(0.08)
Gain on exchange with joint venture partner	—	(0.12)	0.12
Adjusted Diluted EPS From Continuing Operations	\$4.90	\$4.20	\$0.70

Our diluted earnings per share for the first half of fiscal year 2022 reflects our 55% share of the JIGPC joint venture's results, of which 4% is attributable to the non-controlling partner of Air Products Qudra. Additionally, upon completion of the first phase of the gasification and power project in October 2021, we also recognized a net benefit within "Equity affiliates' income" from the recognition of previously deferred profits, net of other project finalization costs, related to the existing Jazan Gas Project Company joint venture. Our non-controlling partner's share of the project finalization costs favorably impacted EPS within "Noncontrolling interests." The total net benefit from this first quarter event was approximately \$0.20 per share.

FIRST SIX MONTHS 2022 RESULTS OF OPERATIONS

Discussion of Consolidated Results

	Six Months Ended 31 March			
	2022	2021	\$ Change	Change
GAAP Measures				
Sales	\$5,939.3	\$4,877.2	\$1,062.1	22 %
Operating income	1,084.9	1,087.6	(2.7)	— %
Operating margin	18.3 %	22.3 %		(400) bp
Equity affiliates' income	268.6	139.1	129.5	93 %
Net income	1,086.4	963.8	122.6	13 %
Net income margin	18.3 %	19.8 %		(150) bp
Non-GAAP Measures				
Adjusted EBITDA	2,021.7	1,866.1	155.6	8 %
Adjusted EBITDA margin	34.0 %	38.3 %		(430) bp
Sales % Change from Prior Year				
Volume				8 %
Price				5 %
Energy cost pass-through				10 %
Currency				(1 %)
Total Consolidated Sales Change				22 %

Sales of \$5,939.3 increased 22%, or \$1,062.1, due to higher energy cost pass-through to customers of 10%, higher volumes of 8%, and positive pricing of 5%, partially offset by unfavorable currency impacts of 1%. Energy costs were significantly higher versus the prior year, particularly in Europe and North America. Contractual provisions associated with our on-site business, which represents approximately half our total company sales, allow us to pass these costs through to our customers. Volume growth was primarily driven by recovery in hydrogen, strong merchant demand, higher activity in our sale of equipment businesses, and new assets. Continued focus on pricing actions in our merchant businesses, including those intended to recover the escalating power and fuel costs, resulted in price improvement in our three largest segments. The unfavorable currency impact was primarily driven by the weakening of the Euro against the U.S. Dollar.

Cost of Sales and Gross Margin

Cost of sales of \$4,375.2 increased 29%, or \$974.1, from total cost of sales of \$3,401.1 in the prior year, which included a \$23.2 charge for a facility closure as discussed below. The increase was due to higher energy cost pass-through to customers of \$471, higher costs associated with sales volumes of \$298, and unfavorable costs of \$288, partially offset by favorable currency impacts of \$60. The unfavorable cost impact included higher operating and distribution costs driven by supply chain challenges as well as costs for a helium storage cavern to support reliable helium supply to our customers globally. Gross margin of 26.3% decreased 400 bp from 30.3% in the prior year, primarily due to unfavorable costs and higher energy cost pass-through to customers, partially offset by the positive impact of our pricing actions.

Facility Closure

During the second quarter of fiscal year 2021, we recorded a charge of \$23.2 (\$17.4 after-tax, or \$0.08 per share) primarily for a noncash write-down of assets associated with a contract termination in the Americas segment. This charge is reflected as "Facility closure" on our consolidated income statements for the six months ended 31 March 2021 and was not recorded in segment results.

Selling and Administrative Expense

Selling and administrative expense of \$459.8 increased 11%, or \$46.8, primarily driven by increased headcount to support our growth strategy, costs associated with our new global headquarters, inflation, and higher incentive compensation. Selling and administrative expense as a percentage of sales decreased to 7.7% from 8.5% in the prior year.

Research and Development

Research and development expense of \$47.0 increased 5%, or \$2.4. Research and development expense as a percentage of sales decreased to 0.8% from 0.9% in the prior year.

Gain on Exchange with Joint Venture Partner

In the second quarter of fiscal year 2021, we recognized a gain of \$36.8 (\$27.3 after-tax, or \$0.12 per share) on an exchange with the Tyczka Group, a former joint venture partner. As part of the exchange, we separated our 50/50 joint venture in Germany into two separate businesses so each party could acquire a portion of the business on a 100% basis. The gain included \$12.7 from the revaluation of our previously held equity interest in the portion of the business that we retained and \$24.1 from the sale of our interest in the remaining business. The gain is reflected as "Gain on exchange with joint venture partner" on our consolidated income statements for the six months ended 31 March 2021 and was not recorded in segment results for our Europe segment. Refer to Note 3, *Acquisitions*, to the consolidated financial statements for additional information.

Other Income (Expense), Net

Other income of \$27.6 decreased 15%, or \$4.7, as income from the sale of assets in the first half of fiscal year 2022 was more than offset by a prior year settlement of a supply contract.

Operating Income and Operating Margin

Operating income of \$1,084.9 was flat, primarily due to higher volumes of \$101 and positive pricing, net of power and fuel costs, of \$30. These factors were offset by unfavorable costs of \$117 driven by business development, higher planned maintenance, as well as various external factors, including inflation and supply chain challenges. In addition, the prior year included a charge of \$23 associated with a facility closure, partially offset by a gain of \$37 on an exchange with a joint venture partner.

Operating margin of 18.3% decreased 400 bp from 22.3% in the prior year, primarily due to the unfavorable costs and higher energy cost pass-through to customers, which increases sales but not operating income.

Equity Affiliates' Income

Equity affiliates' income of \$268.6 increased 93%, or \$129.5, primarily driven by the JIGPC joint venture, which began contributing to our results in the Middle East and India segment in late October 2021. Additionally, in the first quarter, we recognized the remaining deferred profit associated with air separation units previously sold to Jazan Gas Project Company, net of other project finalization costs. Refer to Note 7, *Equity Affiliates*, to the consolidated financial statements for additional information.

Interest Expense

	Six Months Ended 31 March	
	2022	2021
Interest incurred	\$81.4	\$84.9
Less: capitalized interest	18.6	12.1
Interest expense	\$62.8	\$72.8

Interest incurred decreased 4%, or \$3.5, primarily driven by a lower debt balance. Capitalized interest increased 54%, or \$6.5, due to a higher carrying value of projects under construction.

Other Non-Operating Income (Expense), net

Other non-operating income of \$31.7 decreased 10%, or \$3.7, driven mainly by lower pension income. Non-service pension income decreased in fiscal year 2022 primarily due to lower expected returns on plan assets for the U.S. salaried pension plan and the U.K. pension plan.

Discontinued Operations

In the first quarter of fiscal year 2021, we recorded a tax benefit of \$10.3 (\$0.05 per share) primarily from the settlement of a state tax appeal related to the gain on the sale of our former Performance Materials Division in fiscal year 2017. The benefit is reflected within "Income from discontinued operations, net of tax" on our consolidated income statement for the six months ended 31 March 2021.

Net Income and Net Income Margin

Net income of \$1,086.4 increased 13%, or \$122.6, primarily due to higher equity affiliates' income and higher volumes, partially offset by higher costs. Additionally, the prior year included net income from discontinued operations of \$10.3. Net income margin of 18.3% decreased 150 bp from 19.8% in the prior year. The margin decline included an unfavorable impact of approximately 150 bp from higher energy cost pass-through to customers, which increases sales but not net income.

Adjusted EBITDA and Adjusted EBITDA Margin

Adjusted EBITDA of \$2,021.7 increased 8%, or \$155.6, primarily due to higher volumes and higher equity affiliates' income, partially offset by higher costs. Adjusted EBITDA margin of 34.0% decreased 430 bp from 38.3% in the prior year. The margin decline included an unfavorable impact of approximately 300 bp from higher energy cost pass-through to customers.

Effective Tax Rate

Our effective tax rate was 17.8% and 19.8% for the six months ended 31 March 2022 and 2021, respectively. The current year rate was lower primarily due to higher equity affiliates' income that is primarily presented net of income taxes within income from continuing operations on our consolidated income statements.

Our results for the first half of the year include higher tax benefits from share-based compensation vesting and stock option exercises. Because many of our share-based compensation grants vest in December, the tax benefits from these awards typically have a larger impact on our first quarter effective tax rate compared to other periods.

The adjusted effective tax rate was 17.8% and 19.7% for the six months ended 31 March 2022 and 2021, respectively.

Segment Analysis

Americas

	Six Months Ended 31 March			
	2022	2021	\$ Change	% Change
Sales	\$2,410.7	\$1,989.1	\$421.6	21 %
Operating income	542.7	489.2	53.5	11 %
Operating margin	22.5 %	24.6 %		(210) bp
Equity affiliates' income	54.3	54.6	(0.3)	(1 %)
Adjusted EBITDA	906.0	848.9	57.1	7 %
Adjusted EBITDA margin	37.6 %	42.7 %		(510) bp

Sales % Change from Prior Year

Volume	7 %
Price	4 %
Energy cost pass-through	10 %
Currency	— %
Total Americas Sales Change	21 %

Sales of \$2,410.7 increased 21%, or \$421.6, due to higher energy cost pass through to customers of 10%, higher volumes of 7%, and positive pricing of 4%. Energy cost pass-through to customers was higher primarily due to elevated natural gas prices, which we are contractually able to pass through to our on-site customers. The volume improvement was primarily driven by a recovery in hydrogen and better demand for merchant products in North America. Pricing improved across all major merchant product lines, which more than offset power cost increases in the region. Currency was flat versus the prior year.

Operating income of \$542.7 increased 11%, or \$53.5, primarily from pricing, net of power and fuel costs, of \$46 and favorable volumes of \$33. These factors were partially offset by unfavorable costs of \$24, which were primarily attributable to higher planned maintenance, inflation, and supply chain challenges, including driver shortages that are broadly impacting the industry. Operating margin of 22.5% decreased 210 bp from 24.6% in the prior year, as higher energy cost pass-through to customers and higher costs were only partially offset by higher pricing.

Equity affiliates' income of \$54.3 decreased 1%, or \$0.3.

Asia

	Six Months Ended 31 March			
	2022	2021	\$ Change	% Change
Sales	\$1,531.6	\$1,415.0	\$116.6	8 %
Operating income	424.7	413.3	11.4	3 %
Operating margin	27.7 %	29.2 %		(150) bp
Equity affiliates' income	12.8	15.9	(3.1)	(19 %)
Adjusted EBITDA	660.1	646.8	13.3	2 %
Adjusted EBITDA margin	43.1 %	45.7 %		(260) bp

Sales % Change from Prior Year

Volume	5 %
Price	2 %
Energy cost pass-through	— %
Currency	1 %
Total Asia Sales Change	8 %

Sales of \$1,531.6 increased 8%, or \$116.6, due to higher volumes of 5%, positive pricing of 2%, and favorable currency impacts of 1%. Higher volumes were primarily attributable to new on-site plants across the region. Energy cost pass-through to customers was flat versus the prior year.

Operating income of \$424.7 increased 3%, or \$11.4. Higher volumes of \$36 and favorable currency impacts of \$3 were partially offset by unfavorable operating costs of \$27, which were primarily driven by higher distribution and product sourcing costs, inflation, and resources needed to support new project start-ups. Additionally, higher power and fuel costs were largely recovered by pricing actions, resulting in a net decrease to operating income of \$1. We expect higher costs for planned maintenance activities in the second half of the year. Operating margin of 27.7% decreased 150 bp from 29.2% in the prior year as the positive volume impact was more than offset by higher energy and other costs.

Equity affiliates' income of \$12.8 decreased 19%, or \$3.1, primarily due to lower income from affiliates in Thailand.

Europe

	Six Months Ended 31 March			
	2022	2021	\$ Change	% Change
Sales	\$1,482.8	\$1,101.9	\$380.9	35 %
Operating income	215.6	270.4	(54.8)	(20 %)
Operating margin	14.5 %	24.5 %		(1,000) bp
Equity affiliates' income	37.2	27.5	9.7	35 %
Adjusted EBITDA	352.9	398.2	(45.3)	(11 %)
Adjusted EBITDA margin	23.8 %	36.1 %		(1,230) bp

Sales % Change from Prior Year

Volume	4 %
Price	12 %
Energy cost pass-through	25 %
Currency	(6 %)
Total Europe Sales Change	35 %

Sales of \$1,482.8 increased 35%, or \$380.9, due to higher energy cost pass-through to customers of 25%, higher pricing of 12%, and higher volumes of 4%, partially offset by unfavorable currency impacts of 6%. Energy costs remained elevated in the first half of fiscal year 2022. In our on-site business, we are contractually able to pass these costs through to our customers. In our merchant business, we implemented pricing actions across all major product lines, which recovered the higher power and fuel costs experienced during the second quarter as well as a portion of higher costs from the first quarter. We remain focused on ongoing actions to continue recovering the higher power and fuel costs. Volumes improved primarily due to higher demand for merchant products. The unfavorable currency impacts were primarily driven by the weakening of the Euro against the U.S. Dollar.

Operating income of \$215.6 decreased 20%, or \$54.8. Unfavorable costs of \$29 were primarily attributable to higher operating and distribution costs associated with energy-related supply chain challenges, inflation, and development of new projects. Operating income was also impacted by unfavorable volume mix of \$10, higher power and fuel costs that exceeded our pricing actions by \$10, and unfavorable currency of \$6. Operating margin of 14.5% decreased 1,000 bp from 24.5% in the prior year primarily due to higher energy cost pass-through to customers, which increases sales but not operating income and accounted for approximately half the margin decline.

Equity affiliates' income of \$37.2 increased 35%, or \$9.7, primarily driven by an affiliate in Italy.

Middle East and India

	Six Months Ended 31 March			
	2022	2021	\$ Change	% Change
Sales	\$52.6	\$45.7	\$6.9	15 %
Operating income	9.6	10.7	(1.1)	(10 %)
Equity affiliates' income	163.4	37.3	126.1	338 %
Adjusted EBITDA	186.0	60.7	125.3	206 %

Sales of \$52.6 increased 15%, or \$6.9, and operating income of \$9.6 decreased 10%, or \$1.1, primarily due to a new plant in India and a small acquisition. Equity affiliates' income of \$163.4 increased \$126.1 primarily driven by the JIGPC joint venture, which began contributing to our results in late October 2021, as well as recognition of the remaining deferred profit associated with air separation units previously sold to Jazan Gas Project Company, net of other project finalization costs, in the first quarter.

Corporate and other

	Six Months Ended 31 March			
	2022	2021	\$ Change	% Change
Sales	\$461.6	\$325.5	\$136.1	42 %
Operating loss	(107.7)	(109.6)	1.9	2 %
Adjusted EBITDA	(83.3)	(88.5)	5.2	6 %

Sales of \$461.6 increased 42%, or \$136.1, and operating loss of \$107.7 decreased 2%, or \$1.9, primarily due to higher non-LNG sale of equipment project activity. The favorable impact of sale of equipment activity on operating income was partially offset by a prior year benefit from the settlement of a supply contract.

RECONCILIATIONS OF NON-GAAP FINANCIAL MEASURES

(Millions of dollars unless otherwise indicated, except for per share data)

We present certain financial measures, other than in accordance with U.S. generally accepted accounting principles ("GAAP"), on an "adjusted" or "non-GAAP" basis. On a consolidated basis, these measures include adjusted diluted earnings per share ("EPS"), adjusted EBITDA, adjusted EBITDA margin, adjusted effective tax rate, and capital expenditures. On a segment basis, these measures include adjusted EBITDA and adjusted EBITDA margin. In addition to these measures, we also present certain supplemental non-GAAP financial measures to help the reader understand the impact that certain disclosed items, or "non-GAAP adjustments," have on the calculation of our adjusted diluted EPS. For each non-GAAP financial measure, we present a reconciliation to the most directly comparable financial measure calculated in accordance with GAAP.

Our non-GAAP financial measures are not meant to be considered in isolation or as a substitute for the most directly comparable measure calculated in accordance with GAAP. We believe these non-GAAP financial measures provide investors, potential investors, securities analysts, and others with useful information to evaluate the performance of our business because such measures, when viewed together with financial results computed in accordance with GAAP, provide a more complete understanding of the factors and trends affecting our historical financial performance and projected future results.

In many cases, non-GAAP financial measures are determined by adjusting the most directly comparable GAAP measure to exclude non-GAAP adjustments that we believe are not representative of our underlying business performance. For example, we previously excluded certain expenses associated with cost reduction actions, impairment charges, and gains on disclosed transactions. The reader should be aware that we may recognize similar losses or gains in the future. Readers should also consider the limitations associated with these non-GAAP financial measures, including the potential lack of comparability of these measures from one company to another.

When applicable, the tax impact of our pre-tax non-GAAP adjustments reflects the expected current and deferred income tax impact of our non-GAAP adjustments. These tax impacts are primarily driven by the statutory tax rate of the various relevant jurisdictions and the taxability of the adjustments in those jurisdictions.

ADJUSTED DILUTED EPS

There were no non-GAAP adjustments in the first six months of fiscal year 2022 that impacted diluted EPS.

The table below provides a reconciliation to the most directly comparable GAAP measure for each of the major components used to calculate adjusted diluted EPS from continuing operations, which we view as a key performance metric. In periods that we have non-GAAP adjustments, we believe it is important for the reader to understand the per share impact of each such adjustment because management does not consider these impacts when evaluating underlying business performance. Per share impacts are calculated independently and may not sum to total diluted EPS and total adjusted diluted EPS due to rounding.

	Three Months Ended 31 March				
	Operating Income	Equity Affiliates' Income	Income Tax Provision	Net Income Attributable to Air Products	Diluted EPS
Q2 2022 vs. Q2 2021					
2022 GAAP	\$561.9	\$120.8	\$122.7	\$530.5	\$2.38
2021 GAAP	548.5	69.8	121.9	473.1	2.13
Change GAAP					\$0.25
% Change GAAP					12 %
2022 GAAP	\$561.9	\$120.8	\$122.7	\$530.5	\$2.38
No non-GAAP adjustments	—	—	—	—	—
2022 Non-GAAP ("Adjusted")	\$561.9	\$120.8	\$122.7	\$530.5	\$2.38
2021 GAAP	\$548.5	\$69.8	\$121.9	\$473.1	\$2.13
Facility closure	23.2	—	5.8	17.4	0.08
Gain on exchange with joint venture partner	(36.8)	—	(9.5)	(27.3)	(0.12)
2021 Non-GAAP ("Adjusted")	\$534.9	\$69.8	\$118.2	\$463.2	\$2.08
Change Non-GAAP ("Adjusted")					\$0.30
% Change Non-GAAP ("Adjusted")					14 %

	Six Months Ended 31 March				
	Operating Income	Equity Affiliates' Income	Income Tax Provision	Net Income Attributable to Air Products	Diluted EPS
2022 vs. 2021					
2022 GAAP	\$1,084.9	\$268.6	\$236.0	\$1,090.9	\$4.90
2021 GAAP	1,087.6	139.1	235.8	944.8	4.25
Change GAAP					\$0.65
% Change GAAP					15 %
2022 GAAP	\$1,084.9	\$268.6	\$236.0	\$1,090.9	\$4.90
No non-GAAP adjustments	—	—	—	—	—
2022 Non-GAAP ("Adjusted")	\$1,084.9	\$268.6	\$236.0	\$1,090.9	\$4.90
2021 GAAP	\$1,087.6	\$139.1	\$235.8	\$944.8	\$4.25
Facility closure	23.2	—	5.8	17.4	0.08
Gain on exchange with joint venture partner	(36.8)	—	(9.5)	(27.3)	(0.12)
2021 Non-GAAP ("Adjusted")	\$1,074.0	\$139.1	\$232.1	\$934.9	\$4.20
Change Non-GAAP ("Adjusted")					\$0.70
% Change Non-GAAP ("Adjusted")					17 %

ADJUSTED EBITDA AND ADJUSTED EBITDA MARGIN

We define adjusted EBITDA as net income less income (loss) from discontinued operations, net of tax, and excluding non-GAAP adjustments, which we do not believe to be indicative of underlying business trends, before interest expense, other non-operating income (expense), net, income tax provision, and depreciation and amortization expense. Adjusted EBITDA and adjusted EBITDA margin provide useful metrics for management to assess operating performance. Margins are calculated independently for each period by dividing each line item by consolidated sales for the respective period and may not sum to total margin due to rounding.

The table below presents consolidated sales and a reconciliation of net income on a GAAP basis to adjusted EBITDA and net income margin on a GAAP basis to adjusted EBITDA margin:

	Three Months Ended 31 March				Six Months Ended 31 March			
	2022		2021		2022		2021	
	\$	Margin	\$	Margin	\$	Margin	\$	Margin
Sales	\$2,945.1		\$2,502.0		\$5,939.3		\$4,877.2	
Net income and net income margin	\$536.8	18.2 %	\$477.1	19.1 %	\$1,086.4	18.3 %	\$963.8	19.8 %
Less: Income from discontinued operations, net of tax	—	— %	—	— %	—	— %	10.3	0.2 %
Add: Interest expense	32.3	1.1 %	36.1	1.4 %	62.8	1.1 %	72.8	1.5 %
Less: Other non-operating income (expense), net	9.1	0.3 %	16.8	0.7 %	31.7	0.5 %	35.4	0.7 %
Add: Income tax provision	122.7	4.2 %	121.9	4.9 %	236.0	4.0 %	235.8	4.8 %
Add: Depreciation and amortization	335.9	11.4 %	329.3	13.2 %	668.2	11.3 %	653.0	13.4 %
Add: Facility closure	—	— %	23.2	0.9 %	—	— %	23.2	0.5 %
Less: Gain on exchange with joint venture partner	—	— %	36.8	1.5 %	—	— %	36.8	0.8 %
Adjusted EBITDA and adjusted EBITDA margin	\$1,018.6	34.6 %	\$934.0	37.3 %	\$2,021.7	34.0 %	\$1,866.1	38.3 %
	Q2 2022 vs. Q2 2021				2022 vs. 2021			
Change GAAP								
Net income \$ change	\$59.7				\$122.6			
Net income % change	13%				13%			
Net income margin change	(90) bp				(150) bp			
Change Non-GAAP								
Adjusted EBITDA \$ change	\$84.6				\$155.6			
Adjusted EBITDA % change	9%				8%			
Adjusted EBITDA margin change	(270) bp				(430) bp			

The tables below present sales and a reconciliation of operating income and operating margin by segment to adjusted EBITDA and adjusted EBITDA margin by segment for the three months ended 31 March 2022 and 2021:

Sales	Americas	Asia	Europe	Middle East and India	Corporate and other
Q2 2022	\$1,186.6	\$751.2	\$738.6	\$28.9	\$239.8
Q2 2021	1,056.1	697.5	558.4	26.2	163.8
	Americas	Asia	Europe	Middle East and India	Corporate and other
Q2 2022 GAAP					
Operating income (loss)	\$275.5	\$203.6	\$116.4	\$4.8	(\$38.4)
Operating margin	23.2 %	27.1 %	15.8 %		
Q2 2021 GAAP					
Operating income (loss)	\$263.4	\$198.5	\$132.9	\$6.7	(\$66.6)
Operating margin	24.9 %	28.5 %	23.8 %		
Q2 2022 vs. Q2 2021 Change GAAP					
Operating income/loss \$ change	\$12.1	\$5.1	(\$16.5)	(\$1.9)	\$28.2
Operating income/loss % change	5 %	3 %	(12 %)	(28 %)	42 %
Operating margin change	(170) bp	(140) bp	(800) bp		
Q2 2022 Non-GAAP					
Operating income (loss)	\$275.5	\$203.6	\$116.4	\$4.8	(\$38.4)
Add: Depreciation and amortization	153.7	111.8	50.3	6.9	13.2
Add: Equity affiliates' income	20.1	6.2	23.3	71.1	0.1
Adjusted EBITDA	\$449.3	\$321.6	\$190.0	\$82.8	(\$25.1)
Adjusted EBITDA margin	37.9 %	42.8 %	25.7 %		
Q2 2021 Non-GAAP					
Operating income (loss)	\$263.4	\$198.5	\$132.9	\$6.7	(\$66.6)
Add: Depreciation and amortization	153.3	109.7	51.0	6.6	8.7
Add: Equity affiliates' income	32.3	7.1	12.6	16.1	1.7
Adjusted EBITDA	\$449.0	\$315.3	\$196.5	\$29.4	(\$56.2)
Adjusted EBITDA margin	42.5 %	45.2 %	35.2 %		
Q2 2022 vs. Q2 2021 Change Non-GAAP					
Adjusted EBITDA \$ change	\$0.3	\$6.3	(\$6.5)	\$53.4	\$31.1
Adjusted EBITDA % change	— %	2 %	(3 %)	182 %	55 %
Adjusted EBITDA margin change	(460) bp	(240) bp	(950) bp		

The tables below present sales and a reconciliation of operating income and operating margin by segment to adjusted EBITDA and adjusted EBITDA margin by segment for the six months ended 31 March 2022 and 2021:

Sales	Americas	Asia	Europe	Middle East and India	Corporate and other
2022	\$2,410.7	\$1,531.6	\$1,482.8	\$52.6	\$461.6
2021	1,989.1	1,415.0	1,101.9	45.7	325.5

	Americas	Asia	Europe	Middle East and India	Corporate and other
2022 GAAP					
Operating income (loss)	\$542.7	\$424.7	\$215.6	\$9.6	(\$107.7)
Operating margin	22.5 %	27.7 %	14.5 %		
2021 GAAP					
Operating income (loss)	\$489.2	\$413.3	\$270.4	\$10.7	(\$109.6)
Operating margin	24.6 %	29.2 %	24.5 %		
2022 vs. 2021 Change GAAP					
Operating income/loss \$ change	\$53.5	\$11.4	(\$54.8)	(\$1.1)	\$1.9
Operating income/loss % change	11 %	3 %	(20 %)	(10 %)	2 %
Operating margin change	(210) bp	(150) bp	(1,000) bp		

2022 Non-GAAP					
Operating income (loss)	\$542.7	\$424.7	\$215.6	\$9.6	(\$107.7)
Add: Depreciation and amortization	309.0	222.6	100.1	13.0	23.5
Add: Equity affiliates' income	54.3	12.8	37.2	163.4	0.9
Adjusted EBITDA	\$906.0	\$660.1	\$352.9	\$186.0	(\$83.3)
Adjusted EBITDA margin	37.6 %	43.1 %	23.8 %		
2021 Non-GAAP					
Operating income (loss)	\$489.2	\$413.3	\$270.4	\$10.7	(\$109.6)
Add: Depreciation and amortization	305.1	217.6	100.3	12.7	17.3
Add: Equity affiliates' income	54.6	15.9	27.5	37.3	3.8
Adjusted EBITDA	\$848.9	\$646.8	\$398.2	\$60.7	(\$88.5)
Adjusted EBITDA margin	42.7 %	45.7 %	36.1 %		
2022 vs. 2021 Change Non-GAAP					
Adjusted EBITDA \$ change	\$57.1	\$13.3	(\$45.3)	\$125.3	\$5.2
Adjusted EBITDA % change	7 %	2 %	(11 %)	206 %	6 %
Adjusted EBITDA margin change	(510) bp	(260) bp	(1,230) bp		

ADJUSTED EFFECTIVE TAX RATE

The effective tax rate equals the income tax provision divided by income from continuing operations before taxes.

	Three Months Ended 31 March		Six Months Ended 31 March	
	2022	2021	2022	2021
Income tax provision	\$122.7	\$121.9	\$236.0	\$235.8
Income from continuing operations before taxes	659.5	599.0	1,322.4	1,189.3
Effective tax rate	18.6 %	20.4 %	17.8 %	19.8 %
Income tax provision	\$122.7	\$121.9	\$236.0	\$235.8
Facility closure	—	5.8	—	5.8
Gain on exchange with joint venture partner	—	(9.5)	—	(9.5)
Adjusted income tax provision	\$122.7	\$118.2	\$236.0	\$232.1
Income from continuing operations before taxes	\$659.5	\$599.0	\$1,322.4	\$1,189.3
Facility closure	—	23.2	—	23.2
Gain on exchange with joint venture partner	—	(36.8)	—	(36.8)
Adjusted income from continuing operations before taxes	\$659.5	\$585.4	\$1,322.4	\$1,175.7
Adjusted effective tax rate	18.6 %	20.2 %	17.8 %	19.7 %

CAPITAL EXPENDITURES

We define capital expenditures as cash flows for additions to plant and equipment, including long-term deposits, acquisitions (less cash acquired), and investment in and advances to unconsolidated affiliates. A reconciliation of cash used for investing activities to our reported capital expenditures is provided below:

	Six Months Ended 31 March	
	2022	2021
Cash used for (provided by) investing activities	\$2,635.8	\$583.2
Proceeds from sale of assets and investments	25.3	14.8
Purchases of investments	(909.4)	(569.0)
Proceeds from investments	1,391.4	1,265.5
Other investing activities	6.5	3.1
Capital expenditures	\$3,149.6	\$1,297.6

LIQUIDITY AND CAPITAL RESOURCES

Our cash balance and cash flows from operations are our primary sources of liquidity and are generally sufficient to meet our liquidity needs. In addition, we have the flexibility to access capital through a variety of financing activities, including accessing the capital markets, drawing upon our credit facility, or alternatively, accessing the commercial paper markets. At this time, we have not utilized, nor do we expect to access, our credit facility for additional liquidity.

As of 31 March 2022, we had \$1,626.7 of foreign cash and cash items compared to total cash and cash items of \$2,348.7. We do not expect that a significant portion of the earnings of our foreign subsidiaries and affiliates will be subject to U.S. income tax upon repatriation to the U.S. Depending on the country in which the subsidiaries and affiliates reside, the repatriation of these earnings may be subject to foreign withholding and other taxes. However, since we have significant current investment plans outside the U.S., it is our intent to permanently reinvest the majority of our foreign cash and cash items that would be subject to additional taxes outside the U.S.

Cash Flows From Operations

Six Months Ended 31 March	2022	2021
Income from continuing operations attributable to Air Products	\$1,090.9	\$944.8
Adjustments to reconcile income to cash provided by operating activities:		
Depreciation and amortization	668.2	653.0
Deferred income taxes	51.3	76.1
Facility closure	—	23.2
Undistributed earnings of equity method investments	(200.8)	(58.7)
Gain on sale of assets and investments	(11.8)	(26.2)
Share-based compensation	26.5	22.4
Noncurrent lease receivables	43.9	43.4
Other adjustments	(101.0)	(6.5)
Changes in working capital accounts	(262.2)	(91.2)
Cash Provided by Operating Activities	\$1,305.0	\$1,580.3

For the first six months of fiscal year 2022, cash provided by operating activities was \$1,305.0. The working capital accounts were a use of cash of \$262.2, primarily driven by a use of cash of \$203.1 from trade receivables, less allowances, \$138.7 from other working capital, and \$57.3 from inventory partially offset by a source of cash of \$123.1 from payables and accrued liabilities. The source of cash within payables and accrued liabilities primarily resulted from customer advances for sale of equipment projects and higher natural gas costs, which also impacted the use of cash within trade receivables as we contractually passed through these higher costs to customers. The use of cash within other working capital primarily relates to contract fulfillment costs and the timing of income tax payments.

For the first six months of fiscal year 2021, cash provided by operating activities was \$1,580.3. The working capital accounts were a use of cash of \$91.2, primarily driven by \$142.4 from other working capital and \$74.8 from trade receivables, less allowances partially offset by a \$135.7 source of cash from payables and accrued liabilities. The use within "other working capital" was primarily due to higher tax payments and contract fulfillment costs related to sale of equipment projects. The use of cash within trade receivables, less allowances primarily resulted from increased sale of equipment project activity. The source within payables and accrued liabilities was primarily due to customer advances on sale of equipment projects and an increase in accrued utilities due to higher costs associated with Winter Storm Uri, a severe weather storm in the U.S. Gulf Coast.

Cash Flows From Investing Activities

Six Months Ended 31 March	2022	2021
Additions to plant and equipment, including long-term deposits	(\$1,433.6)	(\$1,227.8)
Acquisitions, less cash acquired	(65.1)	—
Investment in and advances to unconsolidated affiliates	(1,650.9)	(69.8)
Proceeds from sale of assets and investments	25.3	14.8
Purchases of investments	(909.4)	(569.0)
Proceeds from investments	1,391.4	1,265.5
Other investing activities	6.5	3.1
Cash Used for Investing Activities	(\$2,635.8)	(\$583.2)

For the first six months of fiscal year 2022, cash used for investing activities was \$2,635.8. Capital expenditures primarily included \$1,650.9 for investment in and advances to unconsolidated affiliates and \$1,433.6 for additions to plant and equipment, including long-term deposits. Refer to the *Capital Expenditures* section below for further detail. Proceeds from investments of \$1,391.4 resulted from maturities of time deposits and treasury securities with terms greater than three months but less than one year and exceeded purchases of investments of \$909.4.

For the first six months of fiscal year 2021, cash used by investing activities was \$583.2. Capital expenditures for plant and equipment, including long-term deposits, were \$1,227.8. Proceeds from investments of \$1,265.5 resulted from maturities of time deposits and treasury securities with terms greater than three months and less than one year and exceeded purchases of investments of \$569.0.

Capital Expenditures

Capital expenditures is a non-GAAP financial measure that we define as cash flows for additions to plant and equipment, including long-term deposits, acquisitions (less cash acquired), and investment in and advances to unconsolidated affiliates. The components of our capital expenditures are detailed in the table below. We present a reconciliation of our capital expenditures to cash used for investing activities on page 53.

	Six Months Ended 31 March	
	2022	2021
Additions to plant and equipment, including long-term deposits	\$1,433.6	\$1,227.8
Acquisitions, less cash acquired	65.1	—
Investment in and advances to unconsolidated affiliates ^(A)	1,650.9	69.8
Capital Expenditures	\$3,149.6	\$1,297.6

^(A) Includes contributions from noncontrolling partners in consolidated subsidiaries as discussed below.

Capital expenditures for the first six months of fiscal year 2022 totaled \$3,149.6 compared to \$1,297.6 for the first six months of fiscal year 2021. The increase of \$1,852.0 was primarily driven by our initial investment of \$1.6 billion in the new JIGPC joint venture, which included approximately \$130 from a non-controlling partner in one of our subsidiaries. We expect to make an additional investment of approximately \$1 billion, which will also include a contribution from our non-controlling partner, for the second phase of the project in 2023. Refer to Note 7, *Equity Affiliates*, to the consolidated financial statements for additional information.

Outlook for Investing Activities

We expect capital expenditures for fiscal year 2022 to be approximately \$4.5 to \$5 billion.

It is not possible, without unreasonable efforts, to reconcile our forecasted capital expenditures to future cash used for investing activities because we are unable to identify the timing or occurrence of our future investment activity, which is driven by our assessment of competing opportunities at the time we enter into transactions. These decisions, either individually or in the aggregate, could have a significant effect on our cash used for investing activities.

Cash Flows From Financing Activities

Six Months Ended 31 March	2022	2021
Long-term debt proceeds	\$87.5	\$92.8
Payments on long-term debt	(400.0)	(15.9)
Net increase in commercial paper and short-term borrowings	210.9	33.6
Dividends paid to shareholders	(664.7)	(592.7)
Proceeds from stock option exercises	14.4	4.7
Other financing activities	(33.7)	(25.7)
Cash Used for Financing Activities	(\$785.6)	(\$503.2)

For the first six months of fiscal year 2022, cash used for financing activities was \$785.6. The use of cash was primarily driven by dividend payments to shareholders of \$664.7 and payments on long-term debt of \$400.0 for the repayment of a 3.0% Senior Note. These uses of cash were partially offset by short-term borrowings and long-term debt proceeds of \$210.9 and \$87.5, respectively.

For the first six months of fiscal year 2021, cash used for financing activities was \$503.2 and primarily included dividend payments to shareholders of \$592.7, partially offset by long-term debt proceeds of \$92.8.

Financing and Capital Structure

Debt

Capital needs in the first six months of fiscal year 2022 were satisfied with our cash balance and cash from operations. Total debt decreased from \$7,637.2 as of 30 September 2021 to \$7,441.5 as of 31 March 2022, primarily due to repayment of the 3.0% Senior Note of \$400.0, partially offset by proceeds from short-term notes and long-term borrowings on our foreign commitments. Total debt includes related party debt of \$371.1 and \$358.4 as of 31 March 2022 and 30 September 2021, respectively, primarily associated with the Lu'An joint venture.

Various debt agreements to which we are a party include financial covenants and other restrictions, including restrictions pertaining to the ability to create property liens and enter into certain sale and leaseback transactions. As of 31 March 2022, we are in compliance with all of the financial and other covenants under our debt agreements.

Credit Facilities

On 31 March 2021, we entered into a five-year \$2,500 revolving credit agreement maturing 31 March 2026 with a syndicate of banks (the "2021 Credit Agreement"), under which senior unsecured debt is available to us and certain of our subsidiaries. On 31 March 2022, we amended the 2021 Credit Agreement to exercise our option to increase the maximum borrowing capacity to \$2,750 and transition the benchmark rate from LIBOR to SOFR. All other terms remain unchanged from the original agreement.

The only financial covenant in the 2021 Credit Agreement is a maximum ratio of total debt to total capitalization (equal to total debt plus total equity) not to exceed 70%. Total debt as of 31 March 2022 and 30 September 2021, expressed as a percentage of total capitalization, was 33.9% and 35.2%, respectively. No borrowings were outstanding under the 2021 Credit Agreement as of 31 March 2022.

We also have credit facilities available to certain of our foreign subsidiaries totaling \$486.5, of which \$446.9 was borrowed and outstanding as of 31 March 2022. The amount borrowed and outstanding as of 30 September 2021 was \$176.2.

Equity Securities

On 15 September 2011, the Board of Directors authorized the repurchase of up to \$1,000 of our outstanding common stock. We did not purchase any of our outstanding shares for the first six months of fiscal years 2022 or 2021. As of 31 March 2022, \$485.3 in share repurchase authorization remained.

Dividends

Cash dividends on our common stock are paid quarterly, usually during the sixth week after the close of the fiscal quarter. We expect to continue to pay cash dividends in the future at comparable or increased levels.

The Board of Directors determines whether to declare dividends and the timing and amount based on financial condition and other factors it deems relevant. On 3 February 2022, the Board of Directors declared a quarterly dividend of \$1.62 per share, representing an 8% increase, or \$0.12 per share, from the previous dividend of \$1.50 per share. This is the 40th consecutive year we have increased our quarterly dividend. The dividend is payable on 9 May 2022 to shareholders of record at the close of business on 1 April 2022.

PENSION BENEFITS

For the six months ended 31 March 2022 and 2021, net periodic pension benefit was \$2.5 and \$19.5, respectively. These periods included service-related costs of \$21.4 and \$22.8, respectively, which are reflected on our consolidated income statements within "Operating income." The amount of service costs capitalized in the first six months of fiscal years 2022 and 2021 were not material. Non-service related benefits were \$23.9 and \$42.3 for the six months ended 31 March 2022 and 2021, respectively. The decrease in fiscal year 2022 primarily resulted from lower expected returns on assets due to the increased percentage of fixed income investments within the plan asset portfolios and higher interest cost, partially offset by lower actuarial loss amortization. Non-service related benefits are reflected within "Other non-operating income (expense), net" on our consolidated income statements.

For the six months ended 31 March 2022, we recognized pension settlement losses of \$2.0 to accelerate recognition of a portion of actuarial losses deferred in accumulated other comprehensive loss primarily associated with the U.S. supplementary pension plan. These losses are included within "Other non-operating income (expense), net" on our consolidated income statements. We expect total pension settlement losses of approximately \$10 in fiscal year 2022, of which approximately \$5.0 is expected in the third quarter of fiscal year 2022 in our U.S. supplementary pension plan.

Management considers various factors when making pension funding decisions, including tax, cash flow, and regulatory implications. For the six months ended 31 March 2022 and 2021, our cash contributions to funded pension plans and benefit payments for unfunded pension plans were \$16.1 and \$27.7, respectively. Total contributions for fiscal year 2022 are expected to be approximately \$40 to \$50. During fiscal year 2021, total contributions were \$44.6.

For additional information, refer to Note 12, *Retirement Benefits*, to the consolidated financial statements.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Management's Discussion and Analysis of our financial condition and results of operations is based on the consolidated financial statements and accompanying notes that have been prepared in accordance with GAAP. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. These estimates reflect our best judgment about current and/or future economic and market conditions and their effect based on information available as of the date of our consolidated financial statements. If conditions change, actual results may differ materially from these estimates.

Judgments and estimates of uncertainties are required in applying our accounting policies in many areas. However, application of policies that management has identified as critical places significant importance on management's judgment, often as the result of the need to make estimates about the effects of matters that are inherently uncertain. A description of our major accounting policies, including those that we consider to be the most critical to understanding our financial statements, is included in our 2021 Form 10-K.

In March 2022, we announced our intent to divest our small industrial gas business in Russia due to Russia's invasion of Ukraine. As a result, we reclassified assets meeting the held for sale criteria to "Other receivables and current assets" on our consolidated balance sheet as of 31 March 2022. Refer to Note 1, *Basis of Presentation and Major Accounting Policies*, to the consolidated financial statements for additional information.

There have been no changes to our accounting policies or estimates during the first six months of fiscal year 2022 that had a significant impact on our financial condition, change in financial condition, liquidity, or results of operations.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Information on our utilization of financial instruments and an analysis of the sensitivity of these instruments to selected changes in market rates and prices is included in our 2021 Form 10-K.

Our net financial instrument position decreased from a liability of \$7,850.3 at 30 September 2021 to a liability of \$6,997.1 at 31 March 2022. The decrease was primarily due to the effect of higher U.S. Dollar interest rates on the fair value of outstanding U.S. Dollar-denominated fixed-rate notes and the repayment of a \$400.0 million U.S. Dollar-denominated note on its maturity date in November 2021.

Interest Rate Risk

Our debt portfolio as of 31 March 2022, including the effect of currency and interest rate swap agreements, was composed of 80% fixed-rate debt and 20% variable-rate debt. Our debt portfolio as of 30 September 2021, including the effect of currency and interest rate swap agreements, was composed of 89% fixed-rate debt and 11% variable-rate debt. The increase in variable-rate debt is the result of a \$600 million increase in the outstanding notional of fixed-to-variable interest rate swaps.

The sensitivity analysis related to the interest rate risk on the fixed portion of our debt portfolio assumes an instantaneous 100 bp move in interest rates from the level at 31 March 2022, with all other variables held constant. A 100 bp increase in market interest rates would result in a decrease of \$475 and \$587 in the net liability position of financial instruments at 31 March 2022 and 30 September 2021, respectively. A 100 bp decrease in market interest rates would result in an increase of \$562 and \$692 in the net liability position of financial instruments at 31 March 2022 and 30 September 2021.

There were no material changes to the sensitivity analysis related to the variable portion of our debt portfolio since 30 September 2021.

Foreign Currency Exchange Rate Risk

The sensitivity analysis related to foreign currency exchange rates assumes an instantaneous 10% change in foreign currency exchange rates from their levels at 31 March 2022, with all other variables held constant. A 10% strengthening or weakening of the functional currency of an entity versus all other currencies would result in a decrease or increase, respectively, of \$303 and \$343 in the net liability position of financial instruments at 31 March 2022 and 30 September 2021, respectively.

Item 4. Controls and Procedures

Disclosure Controls and Procedures

We maintain a comprehensive set of disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act). Under the supervision of the Chief Executive Officer and Chief Financial Officer, our management conducted an evaluation of the effectiveness of our disclosure controls and procedures as of 31 March 2022. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that, as of 31 March 2022, our disclosure controls and procedures were effective.

Internal Control Over Financial Reporting

There was no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the quarter ended 31 March 2022 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II—OTHER INFORMATION

Item 6. Exhibits.

(a) Exhibits required by Item 601 of Regulation S-K

Exhibit No.	Description
(10)	Material Contracts
10.1	Amendment No. 2 to Revolving Credit Agreement, dated 31 March 2022.
(31)	Rule 13a-14(a)/15d-14(a) Certifications
31.1	Certification by the Principal Executive Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification by the Principal Financial Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
(32)	Section 1350 Certifications
32.1	Certification by the Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. ††
(101)	Interactive Data Files
101.INS	Inline XBRL Instance Document. The XBRL 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.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.
104	Cover Page Interactive Data File, formatted in Inline XBRL (included in Exhibit 101).

† Indicates management contract or compensatory arrangement.

†† The certification attached as Exhibit 32 that accompanies this Quarterly Report on Form 10-Q is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Air Products and Chemicals, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Form 10-Q, irrespective of any general incorporation language contained in such filing.

SIGNATURE

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.

Air Products and Chemicals, Inc.
(Registrant)

By: _____
/s/ Melissa N. Schaeffer
Melissa N. Schaeffer
Senior Vice President and Chief Financial Officer
(Principal Financial Officer)

Date: 5 May 2022