AIR PRODUCTS & CHEMICALS INC /DE/
Form 10-Q
August 01, 2017

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

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FORM 10-Q
(Mark One)
x QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended 30 June 2017
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 1-4534
AIR PRODUCTS AND CHEMICALS, INC.
(Exact Name of Registrant as Specified in Its Charter)

Delaware	23-1274455
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
7201 Hamilton Boulevard, Allentown, Pennsylvania	18195-1501
(Address of Principal Executive Offices)	(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)
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 x No ¨
Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes x No ¨
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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
x	¨ (Do not check if a smaller reporting company)	¨	¨	¨

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ¨
Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ¨ No x
Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

Class	Outstanding at 30 June 2017
Common Stock, $1 par value	217,957,369

AIR PRODUCTS AND CHEMICALS, INC. and Subsidiaries
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PART I. FINANCIAL INFORMATION
Item 1. Financial Statements
AIR PRODUCTS AND CHEMICALS, INC. and Subsidiaries
CONSOLIDATED INCOME STATEMENTS
(Unaudited)

	Three Months Ended		Nine Months Ended	
	30 June		30 June	
(Millions of dollars, except for share data)	2017	2016	2017	2016
Sales	$2,121.9	$1,914.5	$5,984.5	$5,558.2
Cost of sales	1,486.2	1,320.2	4,208.1	3,829.1
Selling and administrative	184.5	168.4	528.1	510.1
Research and development	14.6	18.7	44.5	53.8
Business separation costs	—	9.5	30.2	28.9
Cost reduction and asset actions	42.7	13.2	103.0	23.9
Pension settlement loss	5.5	1.0	9.6	3.0
Goodwill and intangible asset impairment charge	162.1	—	162.1	—
Other income (expense), net	26.3	11.1	73.0	29.3
Operating Income	252.6	394.6	971.9	1,138.7
Equity affiliates' income (loss)	(36.9)	42.1	35.3	107.7
Interest expense	29.8	35.1	89.8	83.0
Other non-operating income (expense), net	9.8	—	19.5	—
Income From Continuing Operations Before Taxes	195.7	401.6	936.9	1,163.4
Income tax provision	89.3	145.9	262.2	335.8
Income from Continuing Operations	106.4	255.7	674.7	827.6
Income (Loss) From Discontinued Operations, net of tax	(2.3)	98.4	1,871.5	(567.0)
Net Income	104.1	354.1	2,546.2	260.6
Net Income Attributable to Noncontrolling Interests of Continuing Operations	2.2	5.4	14.5	17.5
Net Income Attributable to Noncontrolling Interests of Discontinued Operations	—	1.9	—	6.0
Net Income Attributable to Air Products	$101.9	$346.8	$2,531.7	$237.1
Net Income Attributable to Air Products				
Income from continuing operations	$104.2	$250.3	$660.2	$810.1
Income (Loss) from discontinued operations	(2.3)	96.5	1,871.5	(573.0)
Net Income Attributable to Air Products	$101.9	$346.8	$2,531.7	$237.1
Basic Earnings Per Common Share Attributable to Air Products				
Income from continuing operations	$.48	$1.16	$3.03	$3.75
Income (Loss) from discontinued operations	(.01)	.44	8.59	(2.65)
Net Income Attributable to Air Products	$.47	$1.60	$11.62	$1.10
Diluted Earnings Per Common Share Attributable to Air Products				
Income from continuing operations	$.47	$1.15	$3.00	$3.72
Income (Loss) from discontinued operations	(.01)	.44	8.52	(2.63)
Net Income Attributable to Air Products	$.46	$1.59	$11.52	$1.09
Weighted Average Common Shares – Basic (in millions)	218.1	216.6	217.9	216.1
Weighted Average Common Shares – Diluted (in millions)	219.8	218.5	219.8	218.0
Dividends Declared Per Common Share – Cash	$.95	$.86	$2.76	$2.53

The accompanying notes are an integral part of these statements.

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AIR PRODUCTS AND CHEMICALS, INC. and Subsidiaries
CONSOLIDATED COMPREHENSIVE INCOME STATEMENTS
(Unaudited)

	Three Months Ended 30 June	
(Millions of dollars)	2017	2016
Net Income	$ 104.1	$ 354.1
Other Comprehensive Income (Loss), net of tax:		
Translation adjustments, net of tax of ($33.1) and $11.5	141.4	(89.0)
Net gain (loss) on derivatives, net of tax of $9.6 and ($7.1)	23.0	(22.2)
Pension and postretirement benefits	.1	—
Reclassification adjustments:		
Currency translation adjustment	8.2	(.1)
Derivatives, net of tax of ($7.9) and $4.0	(23.6)	10.0
Pension and postretirement benefits, net of tax of $12.8 and $10.5	27.7	21.6
Total Other Comprehensive Income (Loss)	176.8	(79.7)
Comprehensive Income	280.9	274.4
Net Income Attributable to Noncontrolling Interests	2.2	7.3
Other Comprehensive Income (Loss) Attributable to Noncontrolling Interests	.2	(.7)
Comprehensive Income Attributable to Air Products	$ 278.5	$ 267.8

	Nine Months Ended 30 June	
(Millions of dollars)	2017	2016
Net Income	$2,546.2	$260.6
Other Comprehensive Income, net of tax:		
Translation adjustments, net of tax of ($8.8) and ($14.3)	9.8	(52.0)
Net gain (loss) on derivatives, net of tax of ($6.8) and $7.9	(2.2)	6.6
Pension and postretirement benefits, net of tax of $1.2	3.9	—
Reclassification adjustments:		
Currency translation adjustment	57.3	2.7
Derivatives, net of tax of $5.4 and ($4.5)	7.8	(20.4)
Pension and postretirement benefits, net of tax of $39.4 and $31.9	85.2	65.4
Total Other Comprehensive Income	161.8	2.3
Comprehensive Income	2,708.0	262.9
Net Income Attributable to Noncontrolling Interests	14.5	23.5
Other Comprehensive Income Attributable to Noncontrolling Interests	2.1	2.1
Comprehensive Income Attributable to Air Products	$2,691.4	$237.3

The accompanying notes are an integral part of these statements.

AIR PRODUCTS AND CHEMICALS, INC. and Subsidiaries
CONSOLIDATED BALANCE SHEETS
(Unaudited)

(Millions of dollars, except for share data)	30 June 2017	30 September 2016
Assets		
Current Assets		
Cash and cash items	$2,332.6	$1,293.2
Short-term investments	1,016.1	—
Trade receivables, net	1,101.2	1,146.2
Inventories	293.3	255.0
Contracts in progress, less progress billings	83.3	64.6
Prepaid expenses	79.0	93.9
Other receivables and current assets	431.7	538.2
Current assets of discontinued operations	9.8	926.2
Total Current Assets	5,347.0	4,317.3
Investment in net assets of and advances to equity affiliates	1,244.7	1,283.6
Plant and equipment, at cost	19,176.3	18,660.2
Less: accumulated depreciation	10,859.3	10,400.5
Plant and equipment, net	8,317.0	8,259.7
Goodwill, net	705.1	845.1
Intangible assets, net	363.8	387.9
Noncurrent capital lease receivables	1,139.3	1,221.7
Other noncurrent assets	736.9	671.0
Noncurrent assets of discontinued operations	—	1,042.3
Total Noncurrent Assets	12,506.8	13,711.3
Total Assets	$17,853.8	$18,028.6
Liabilities and Equity		
Current Liabilities		
Payables and accrued liabilities	$1,534.3	$1,652.2
Accrued income taxes	323.0	117.9
Short-term borrowings	143.4	935.8
Current portion of long-term debt	416.0	365.4
Current liabilities of discontinued operations	16.5	211.8
Total Current Liabilities	2,433.2	3,283.1
Long-term debt	3,366.6	3,909.7
Other noncurrent liabilities	1,910.0	1,816.5
Deferred income taxes	634.1	710.4
Noncurrent liabilities of discontinued operations	—	1,095.5
Total Noncurrent Liabilities	5,910.7	7,532.1
Total Liabilities	8,343.9	10,815.2
Commitments and Contingencies - See Note 13		
Air Products Shareholders’ Equity		
Common stock (par value $1 per share; issued 2017 and 2016 - 249,455,584 shares)	249.4	249.4
Capital in excess of par value	986.4	970.0
Retained earnings	12,584.2	10,475.5
Accumulated other comprehensive loss	(2,217.1)	(2,388.3)
Treasury stock, at cost (2017 - 31,498,215 shares; 2016 - 32,104,759 shares)	(2,190.5)	(2,227.0)

Total Air Products Shareholders' Equity	9,412.4	7,079.6
Noncontrolling Interests	97.5	133.8
Total Equity	9,509.9	7,213.4
Total Liabilities and Equity	$17,853.8	$18,028.6

The accompanying notes are an integral part of these statements.

AIR PRODUCTS AND CHEMICALS, INC. and Subsidiaries
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

	Nine Months Ended 30 June	
(Millions of dollars)	2017	2016
Operating Activities		
Net income	$2,546.2	$260.6
Less: Net income attributable to noncontrolling interests of continuing operations	14.5	17.5
Less: Net income attributable to noncontrolling interests of discontinued operations	—	6.0
Net income attributable to Air Products	2,531.7	237.1
(Income) Loss from discontinued operations	(1,871.5)	573.0
Income from continuing operations attributable to Air Products	660.2	810.1
Adjustments to reconcile income to cash provided by operating activities:		
Depreciation and amortization	634.8	642.1
Deferred income taxes	(78.1)	75.6
Undistributed earnings of unconsolidated affiliates	(34.4)	(34.2)
Gain on sale of assets and investments	(7.9)	(1.4)
Share-based compensation	27.4	23.9
Noncurrent capital lease receivables	69.4	61.5
Goodwill and intangible asset impairment charge	162.1	—
Equity method investment impairment charge	79.5	—
Write-down of long-lived assets associated with cost reduction actions	59.1	—
Other adjustments	110.7	107.3
Working capital changes that provided (used) cash, excluding effects of acquisitions and divestitures:		
Trade receivables	(25.7)	(173.8)
Inventories	44.8	13.6
Contracts in progress, less progress billings	(18.6)	(6.0)
Other receivables	80.0	(70.4)
Payables and accrued liabilities	(99.9)	61.0
Other working capital	(50.0)	12.9
Cash Provided by Operating Activities	1,613.4	1,522.2
Investing Activities		
Additions to plant and equipment	(806.8)	(700.9)
Investment in and advances to unconsolidated affiliates	(8.1)	—
Proceeds from sale of assets and investments	20.7	44.1
Purchases of investments	(2,488.6)	—
Proceeds from investments	1,473.5	—
Other investing activities	(1.5)	(1.7)
Cash Used for Investing Activities	(1,810.8)	(658.5)
Financing Activities		
Long-term debt proceeds	2.2	388.3
Payments on long-term debt	(483.5)	(121.7)
Net decrease in commercial paper and short-term borrowings	(799.2)	(434.3)
Dividends paid to shareholders	(580.9)	(534.9)
Proceeds from stock option exercises	38.2	76.2
Other financing activities	(31.2)	(29.5)

Cash Used for Financing Activities	(1,854.4)	(655.9)
Discontinued Operations		
Cash (used for) provided by operating activities	(768.0)	269.2
Cash provided by (used for) investing activities	3,750.6	(160.9)
Cash provided by (used for) financing activities	69.5	(11.4)
Cash Provided by Discontinued Operations	3,052.1	96.9
Effect of Exchange Rate Changes on Cash	1.5	3.7
Increase in Cash and Cash Items	1,001.8	308.4
Cash and Cash Items – Beginning of Year	1,330.8	206.4
Cash and Cash Items – End of Period	$2,332.6	$514.8
Less: Cash and Cash Items – Discontinued Operations	—	76.3
Cash and Cash Items – Continuing Operations	$2,332.6	$438.5

The accompanying notes are an integral part of these statements.

AIR PRODUCTS AND CHEMICALS, INC. and Subsidiaries
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Millions of dollars unless otherwise indicated, except for share data)

1. BASIS OF PRESENTATION AND MAJOR ACCOUNTING POLICIES

Refer to our 2016 Form 10-K for a description of major accounting policies. There have been no significant changes to these accounting policies during the first nine months of fiscal year 2017 other than those detailed in Note 2, New Accounting Guidance. Certain prior year information has been reclassified to conform to the fiscal year 2017 presentation.

The results of our former Materials Technologies segment, which contained the Electronic Materials Division (EMD) and the Performance Materials Division (PMD), and the former Energy-from-Waste segment have been presented as discontinued operations. Refer to Note 3, Discontinued Operations, for additional details. The results of operations and cash flows of these businesses have been removed from the results of continuing operations and segment results for all periods presented. The assets and liabilities of the discontinued operations have been reclassified and are segregated in the consolidated balance sheets. The comprehensive income related to these businesses has not been segregated and is included in the consolidated comprehensive income statement for all periods presented. The notes to the interim consolidated financial statements, unless otherwise indicated, are on a continuing operations basis.

As further discussed in Note 3, Discontinued Operations, we completed the sale of PMD to Evonik Industries AG on 3 January 2017. A portion of the proceeds from the sale have been included in "Short-term investments" on the consolidated balance sheets. Associated interest income has been reflected on the consolidated income statements as “Other non-operating income (expense), net."

The 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 (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 disclosure to make the information presented not misleading. Adjustments included herein are of a normal, recurring nature unless otherwise disclosed in the notes. The interim results for the periods indicated herein, however, do not reflect certain adjustments, such as the valuation of inventories on the last-in, first-out (LIFO) cost basis, which are only finally determined on an annual basis. In order to fully understand the basis of presentation, the consolidated financial statements and related notes included herein should be read in conjunction with the financial statements and notes thereto included in our 2016 Form 10-K filed on 21 November 2016, portions of which were updated in the Company's Current Report on Form 8-K filed on 5 June 2017 to reflect the classification of the former Materials Technologies segment as a discontinued operation. Results of operations for interim periods are not necessarily indicative of the results of operations for a full year.

2. NEW ACCOUNTING GUIDANCE

Accounting Guidance Implemented in 2017

Simplifying Goodwill Impairment Test

In January 2017, the Financial Accounting Standards Board (FASB) issued guidance to simplify the test for goodwill impairment by eliminating Step 2, which measured the impairment loss based on the fair value of goodwill. Under the new guidance, an impairment loss will be recognized for the amount by which the carrying amount of the reporting unit exceeds its fair value, not to exceed the total amount of goodwill allocated to that reporting unit. The guidance is effective for annual or interim goodwill impairments tests conducted in fiscal year 2021 and should be applied prospectively. We elected to early adopt this guidance during the third quarter of fiscal year 2017.

Refer to Note 8, Goodwill, for a discussion of our interim goodwill assessment and the related impairment charge.

Consolidation Analysis

In February 2015, the FASB issued an update to amend current consolidation guidance. The guidance impacts the analysis an entity must perform in determining if it should consolidate certain legal entities such as limited partnerships, limited liability corporations, and securitization structures. We adopted this guidance in the first quarter of fiscal year 2017. This guidance did not have a significant impact on our consolidated financial statements upon adoption.

Debt Issuance Costs

In April 2015, the FASB issued guidance requiring that debt issuance costs related to a recognized debt liability be presented in the balance sheet as a direct deduction from the carrying amount of the debt instead of as a separate deferred asset. In addition, guidance was issued to allow for a policy election on the presentation of debt issuance costs associated with a line-of-credit arrangement, regardless of whether there are any outstanding borrowings. We adopted the guidance during the first quarter of fiscal year 2017 on a retrospective basis. The guidance resulted in a reclassification adjustment that decreased other noncurrent assets by $17.0 with a corresponding decrease to long-term debt as of 30 September 2016. We will continue to present debt issuance costs associated with a line-of-credit arrangement as a deferred asset, regardless of whether there are any outstanding borrowings.

Adoption of this guidance also impacted the presentation of debt issuance costs related to our discontinued operations. As of 30 September 2016, noncurrent assets and noncurrent liabilities of discontinued operations were both reduced by $9.6.

Share-Based Compensation

In March 2016, the FASB issued an update to simplify the accounting for employee share-based payments, including the income tax impacts, the classification on the statement of cash flows, and forfeitures. We elected to early adopt this guidance in the first quarter of fiscal year 2017. The new guidance requires excess tax benefits and deficiencies to be recognized in the income statement rather than in additional paid-in capital on the balance sheet. As a result of applying this change prospectively, we recognized $3.5 and $13.2 of excess tax benefits in our provision for income taxes during the three and nine months ended 30 June 2017, respectively. In addition, adoption of the new guidance resulted in a $8.8 cumulative-effect adjustment to retained earnings as of 1 October 2016 to recognize deferred taxes for U.S. state net operating loss and other carryforwards attributable to excess tax benefits. We retrospectively applied the guidance, which requires presentation of excess tax benefits as an operating activity on the statement of cash flows rather than as a financing activity. Cash paid on employees' behalf related to shares withheld for tax purposes continues to be classified as a financing activity. Forfeitures have not been significant historically. We have elected to account for forfeitures as they occur, rather than to estimate them.

Definition of a Business

In January 2017, the FASB issued guidance that clarifies the definition of a business in order to assist in determining whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. Under the new guidance, fewer transactions are expected to be accounted for as business combinations. We elected to early adopt this guidance prospectively beginning in the first quarter of fiscal year 2017. This guidance did not have a significant impact on our consolidated financial statements upon adoption.

New Accounting Guidance to be Implemented

Revenue Recognition

In May 2014, the FASB issued guidance based on the principle that revenue is recognized in an amount expected to be collected and to which the entity expects to be entitled in exchange for the transfer of goods or services. We have the option to adopt the standard in either fiscal year 2018 or 2019, either retrospectively or as a cumulative-effect adjustment as of the date of adoption. We intend to adopt this guidance in fiscal year 2019. We are currently evaluating the adoption alternatives allowed by the new standard and the impact the standard is expected to have on our consolidated financial statements. As the new standard will supersede substantially all existing revenue guidance affecting us under GAAP, it could impact the amount and timing of revenue that we recognize, in addition to our business processes and information technology systems. To date, we have focused on identifying potential impacts on our onsite gases and sale of equipment businesses and on efforts needed to meet the expanded disclosure requirements. Our evaluation of the effect of the new standard will extend over future periods.

Leases

In February 2016, the FASB issued guidance which requires lessees to recognize a right-of-use asset and lease liability on the balance sheet for all leases, including operating leases, with a term in excess of 12 months. The guidance also expands the quantitative and qualitative disclosure requirements. The guidance is effective in fiscal year 2020, with early adoption permitted, and must be applied using a modified retrospective approach. We are currently evaluating the impact of adopting this new guidance on the consolidated financial statements, and we have started the

assessment process by evaluating the population of leases under the revised definition of what qualifies as a leased asset. The Company is the lessee under various agreements for real estate, distribution equipment, aircraft, and vehicles that are currently accounted for as operating leases. The new guidance will require the Company to record operating leases on the balance sheet with a right-of-use asset and corresponding liability for future payment obligations. The Company is currently considered the lessor under certain agreements associated with facilities that are built to provide product to a specific customer.

Derivative Contract Novations

In March 2016, the FASB issued guidance to clarify that a change in the counterparty to a derivative instrument that has been designated as a hedging instrument does not, in and of itself, require re-designation of that hedging relationship provided that all other hedge accounting criteria continue to be met. This guidance is effective in fiscal year 2018, with early adoption permitted. We do not expect adoption of this guidance to have a significant impact on our consolidated financial statements.

Credit Losses on Financial Instruments

In June 2016, the FASB issued an update on the measurement of credit losses, which requires measurement and recognition of expected credit losses for financial assets, including trade receivables and capital lease receivables, held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. The method to determine a loss is different from the existing guidance, which requires a credit loss to be recognized when it is probable. The guidance is effective beginning fiscal year 2021, with early adoption permitted beginning fiscal year 2020. We are currently evaluating the impact this update will have on our consolidated financial statements.

Cash Flow Statement Classification

In August 2016, the FASB issued guidance to reduce diversity in practice on how certain cash receipts and cash payments are classified in the statement of cash flows. The guidance is effective beginning fiscal year 2019, with early adoption permitted, and should be applied retrospectively. We are currently evaluating the impact of adopting this new guidance on the consolidated financial statements.

Intra-Entity Asset Transfers

In October 2016, the FASB issued guidance on the accounting for the income tax effects of intra-entity transfers of assets other than inventory. Current GAAP prohibits the recognition of current and deferred income taxes for an intra-entity asset transfer until the asset has been sold to an outside party. Under the new guidance, the income tax consequences of an intra-entity asset transfer are recognized when the transfer occurs. The guidance is effective beginning in fiscal year 2019, with early adoption permitted as of the beginning of an annual reporting period. The guidance must be applied on a modified retrospective basis through a cumulative-effect adjustment directly to retained earnings as of the date of adoption. We are currently evaluating the impact this guidance will have on our consolidated financial statements and plan to adopt the guidance in fiscal year 2019.

Derecognition of Nonfinancial Assets

In February 2017, the FASB issued an update to clarify the scope of guidance on gains and losses from the derecognition of nonfinancial assets and to add guidance for partial sales of nonfinancial assets. The update must be adopted at the same time as the new guidance on revenue recognition discussed above, which we intend to adopt in fiscal year 2019. The guidance may be applied retrospectively or with a cumulative-effect adjustment to retained earnings at the date of adoption. We are currently evaluating the impact this update will have on our consolidated financial statements.

Presentation of Net Periodic Pension and Postretirement Benefit Cost

In March 2017, the FASB issued guidance on improving the presentation of net periodic pension cost and net periodic postretirement benefit cost. The amendments require that the service cost component of the net periodic benefit cost be presented in the same line items as other compensation costs arising from services rendered by employees during the period. The other components of net periodic benefit cost (e.g., interest cost, expected return on plan assets, and amortization of actuarial gains/losses) should be presented in the income statement separately from the service cost component and outside of operating income. The amendments also allow only the service cost component to be eligible for capitalization when applicable. The guidance is effective beginning in fiscal year 2019, with early adoption permitted as of the beginning of fiscal year 2018. The amendments should be applied retrospectively for the presentation requirements and prospectively for the capitalization of the service cost component requirements. We are currently evaluating the impact this update will have on our consolidated financial statements.

Share-Based Compensation Modification Accounting

In May 2017, the FASB issued an update to amend the scope of modification accounting associated with share-based payment awards. The guidance limits the use of modification accounting to instances where the fair value, vesting conditions, or award classification are different immediately before and after the modification. This guidance is

effective in fiscal year 2019, with early adoption permitted, and should be applied prospectively. We do not expect this guidance to have a significant impact on our consolidated financial statements.

3. DISCONTINUED OPERATIONS

The divisions comprising the former Materials Technologies segment and the former Energy-from-Waste segment have been accounted for as discontinued operations. The results of operations of these businesses have been removed from the results of continuing operations for all periods presented. The assets and liabilities of the discontinued operations have been reclassified and are segregated in the consolidated balance sheets.

Materials Technologies

On 16 September 2015, we announced plans to separate our Materials Technologies segment, which contained two divisions, the Electronic Materials Division (EMD) and the Performance Materials Division (PMD). As further discussed below, we completed the separation of EMD through the spin-off of Versum Materials, Inc. (Versum) on 1 October 2016. In addition, we completed the sale of PMD to Evonik Industries AG (Evonik) on 3 January 2017. As a result, these divisions are reflected in our consolidated financial statements as discontinued operations for all periods presented.

Spin-off of Electronic Materials

On 1 October 2016 (the distribution date), Air Products completed the spin-off of Versum into a separate and independent public company by way of a distribution to Air Products' stockholders of all of the then issued and outstanding shares of common stock of Versum on the basis of one share of Versum common stock for every two shares of Air Products' common stock held as of the close of business on 21 September 2016 (the record date for the distribution). Fractional shares of Versum common stock were not distributed to Air Products' common stockholders. Air Products' stockholders received cash in lieu of fractional shares. As a result of the distribution, Versum is now an independent public company, and its common stock is listed under the symbol "VSM" on the New York Stock Exchange.

In connection with the spin-off, we entered into various agreements necessary to effect the spin-off and to govern the ongoing relationships between Air Products and Versum after the separation, including a transition services agreement by which we provide certain transition services to Versum, generally for no longer than 12 to 24 months from the spin-off date of 1 October 2016. Seifi Ghasemi, chairman, president and chief executive officer of Air Products, is serving as non-executive chairman of the Versum Board of Directors.

Sale of Performance Materials

On 3 January 2017, we completed the sale of PMD to Evonik for $3.8 billion in cash subject to customary post-closing adjustments, including working capital. A gain of $2,870 ($1,833 after-tax, or $8.34 per share) was recognized on the sale in the second quarter of fiscal year 2017. In connection with the sale, we entered into a transition services agreement by which we provide certain transition services to Evonik for no longer than 12 months from the date of sale of 3 January 2017.

Energy-from-Waste

On 29 March 2016, the Board of Directors approved the Company's exit of its Energy-from-Waste (EfW) business. As a result, efforts to start up and operate the two EfW projects located in Tees Valley, United Kingdom, were discontinued. Since that time, the EfW segment has been presented as a discontinued operation. During the second quarter of fiscal year 2016, a loss of $945.7 ($846.6 after-tax) was recorded to write down plant assets to their estimated net realizable value and record a liability for plant disposition and other costs. Income tax benefits related only to one of the projects as the other did not qualify for a local tax deduction.

During the first quarter of fiscal year 2017, we determined that it is unlikely for a buyer to assume the remaining assets and contract obligations, including land lease obligations. As a result, we recorded an additional loss of $59.3 ($47.1 after-tax) in results of discontinued operations, of which $53.0 was recorded primarily for land lease obligations and $6.3 was recorded to update our estimate of the net realizable value of the plant assets as of 31 December 2016. There have been no changes to our estimates during the third quarter of fiscal year 2017. We may incur additional exit costs in future periods related to other outstanding commitments.

The following table summarizes the carrying amount of the accrual for our actions to dispose of the EfW business at 30 June 2017:

	Asset Actions	Contract Actions/Other	Total
Loss on disposal of business	$913.5	$ 32.2	$945.7
Noncash expenses	(913.5)	—	(913.5)
Cash expenditures	—	(18.6)	(18.6)
Currency translation adjustment	—	(1.4)	(1.4)
30 September 2016	$—	$ 12.2	$12.2
Loss on disposal of business	6.3	53.0	59.3
Noncash expenses	(6.3)	—	(6.3)
Amount reflected in other noncurrent liabilities	—	(61.5)	(61.5)
Cash expenditures	—	(1.4)	(1.4)
Currency translation adjustments	—	3.4	3.4
30 June 2017	$—	$ 5.7	$5.7

The loss on disposal was recorded as a component of discontinued operations. The amount reflected in other noncurrent liabilities relates to land lease obligations and is recorded in continuing operations. The remaining accrual is reflected in current liabilities of discontinued operations.

The following tables detail the businesses and major line items that comprise income from discontinued operations, net of tax, on the consolidated income statements for the three and nine months ended 30 June 2017:

	Three Months Ended 30 June 2017 Total Discontinued Operations[(A)]
Cost of sales	$ 2.3
Selling and administrative	.3
Other income (expense), net	(.8)
Loss Before Taxes	(3.4)
Income tax provision	(1.1)
Loss from Discontinued Operations, net of tax	$ (2.3)

[(A)] Activity primarily relates to EfW.

	Nine Months Ended 30 June 2017		
	Performance Materials	Energy-from-Waste[A]	Total Discontinued Operations
Sales	$254.8	$ —	$ 254.8
Cost of sales	182.3	11.9	194.2
Selling and administrative	22.5	.5	23.0
Research and development	5.1	—	5.1
Other income (expense), net	.3	(.9)	(.6)
Operating Income (Loss)	45.2	(13.3)	31.9
Equity affiliates' income	.3	—	.3
Income (Loss) Before Taxes	45.5	(13.3)	32.2
Income tax provision[B]	(50.8)	(3.1)	(53.9)
Income (Loss) From Operations of Discontinued Operations, net of tax	96.3	(10.2)	86.1
Gain (Loss) on Disposal, net of tax[C]	1,832.5	(47.1)	1,785.4
Income (Loss) from Discontinued Operations, net of tax	$1,928.8	$ (57.3)	$ 1,871.5

(A) The loss from operations of discontinued operations for EfW primarily relates to land lease obligations, administrative costs, and costs incurred for ongoing project exit activities.

(B) As a result of the expected gain on sale of PMD, we released valuation allowances related to capital loss and net operating loss carryforwards during the first quarter of 2017 that favorably impacted our income tax provision within discontinued operations by approximately $66.

(C) After-tax gain on sale of $1,832.5 includes expense for income tax reserves for uncertain tax positions of $26.1 gross ($19.1 net) in various jurisdictions.

The following tables detail the businesses and major line items that comprise income from discontinued operations, net of tax, on the consolidated income statements for the three and nine months ended 30 June 2016:

	Three Months Ended 30 June 2016			
	Electronic Materials	Performance Materials	Energy-from-Waste[A]	Total Discontinued Operations
Sales	$240.0	$ 279.9	$ —	$ 519.9
Cost of sales	130.9	188.2	17.6	336.7
Selling and administrative	22.8	20.7	.7	44.2
Research and development	10.6	4.9	.1	15.6
Other income (expense), net	(.8)	(.6)	8.2	6.8
Operating Income (Loss)	74.9	65.5	(10.2)	130.2
Equity affiliates' income	—	.5	—	.5
Income (Loss) Before Taxes[B]	74.9	66.0	(10.2)	130.7
Income tax provision	16.8	16.8	(1.3)	32.3
Income (Loss) from Operations of Discontinued Operations, net of tax	58.1	49.2	(8.9)	98.4
Net Income Attributable to Noncontrolling Interests of Discontinued Operations	1.9	—	—	1.9
Net Income (Loss) From Discontinued Operations, net of tax	$56.2	$ 49.2	$ (8.9)	$ 96.5

	Nine Months Ended 30 June 2016			
	Electronic Materials	Performance Materials	Energy-from-Waste[A]	Total Discontinued Operations
Sales	$713.3	$ 789.9	$ —	$ 1,503.2
Cost of sales	385.8	539.1	22.9	947.8
Selling and administrative	61.2	59.2	2.3	122.7
Research and development	30.2	14.8	.8	45.8
Other income (expense), net	4.2	3.1	(5.5)	1.8
Operating Income (Loss)	240.3	179.9	(31.5)	388.7
Equity affiliates' income	.2	.9	—	1.1
Income (Loss) Before Taxes[B]	240.5	180.8	(31.5)	389.8
Income tax provision	58.4	53.7	(1.9)	110.2
Income (Loss) From Operations of Discontinued Operations	182.1	127.1	(29.6)	279.6
Loss on Disposal, net of tax	—	—	(846.6)	(846.6)
Income (Loss) from Operations of Discontinued Operations, net of tax	182.1	127.1	(876.2)	(567.0)
Net Income Attributable to Noncontrolling Interests of Discontinued Operations	6.0	—	—	6.0
Net Income (Loss) From Discontinued Operations, net of tax	$176.1	$ 127.1	$ (876.2)	$ (573.0)

(A) The loss from operations of discontinued operations for EfW primarily relates to project suspension costs, land lease obligations, and administrative costs.

(B) For the three and nine months ended 30 June 2016, income before taxes from operations of discontinued operations attributable to Air Products was $128.3 and $382.4, respectively.

The following table details the major line items that comprise total assets and total liabilities of discontinued operations on the consolidated balance sheets as of 30 June 2017:

	30 June 2017		
	Performance Materials	Energy-from-Waste	Total Discontinued Operations
Assets			
Current Assets			
Plant and equipment, net	$—	$ 9.8	$ 9.8
Total Current Assets	—	9.8	9.8
Total Assets	$—	$ 9.8	$ 9.8
Liabilities			
Current Liabilities			
Payables and accrued liabilities [A]	$10.4	$ 6.1	$ 16.5
Total Current Liabilities	10.4	6.1	16.5
Total Liabilities	$10.4	$ 6.1	$ 16.5

(A) Includes reserves associated with disposition of businesses.

The following table details the major line items that comprise total assets and total liabilities of discontinued operations on the consolidated balance sheets as of 30 September 2016:

	30 September 2016			
	Electronic Materials	Performance Materials	Energy-from-Waste	Total Discontinued Operations
Assets				
Current Assets				
Cash and cash items	$170.6	$ 37.5	$ —	$ 208.1
Trade receivables, net	134.7	159.0	—	293.7
Inventories	138.1	226.8	—	364.9
Plant and equipment, net	—	—	18.2	18.2
Other receivables and current assets	34.5	5.6	1.2	41.3
Total Current Assets	477.9	428.9	19.4	926.2
Plant and equipment, net	296.5	296.5	—	593.0
Goodwill, net	180.0	125.0	—	305.0
Intangible assets, net	75.1	25.0	—	100.1
Other noncurrent assets	37.5	6.7	—	44.2
Total Noncurrent Assets	589.1	453.2	—	1,042.3
Total Assets	$1,067.0	$ 882.1	$ 19.4	$ 1,968.5
Liabilities				
Current Liabilities				
Payables and accrued liabilities	$85.8	$ 72.5	$ 19.0	$ 177.3
Accrued income taxes	22.7	6.0	—	28.7
Current portion of long-term debt	5.8	—	—	5.8
Total Current Liabilities	114.3	78.5	19.0	211.8
Long-term debt	981.8	—	—	981.8
Deferred income taxes	50.3	6.4	—	56.7
Other noncurrent liabilities	47.4	9.6	—	57.0
Total Noncurrent Liabilities	1,079.5	16.0	—	1,095.5
Total Liabilities	$1,193.8	$ 94.5	$ 19.0	$ 1,307.3

4. BUSINESS SEPARATION COSTS

In connection with the disposition of the two divisions comprising the former Materials Technologies segment, we incurred separation costs of $30.2 for the nine months ended 30 June 2017. No business separation costs were incurred during the third quarter of fiscal year 2017. For the three and nine months ended 30 June 2016, we incurred separation costs of $9.5 and $28.9, respectively. These costs are reflected on the consolidated income statements as “Business separation costs” and include legal, advisory, and pension related costs.

Our income tax provision for the three and nine months ended 30 June 2017 includes net tax benefits of $8.2 related to changes in tax positions on business separation activities. Our income tax provision for the three and nine months ended 30 June 2016 includes an expense of $45.7 resulting from a dividend that was declared in June 2016 to repatriate $443.8 from a subsidiary in South Korea to the U.S. in anticipation of the separation of EMD from the industrial gases business in South Korea.

Refer to Note 3, Discontinued Operations, for additional information regarding the dispositions.

5. COST REDUCTION AND ASSET ACTIONS

For the three months ended 30 June 2017, we recognized an expense of $42.7 for cost reduction and asset actions. Severance and other benefits totaled $9.5. Asset actions of $33.2 primarily included charges resulting from the planned sale of a non-industrial gas hardgoods business in the Industrial Gases – Americas segment and the closure of a facility in the Corporate and other segment that manufactured liquefied natural gas (LNG) heat exchangers.

For the nine months ended 30 June 2017, we recognized a net expense of $103.0. The year-to-date net expense included a charge of $106.4 for actions taken during fiscal year 2017, partially offset by the favorable settlement of the remaining $3.4 accrued balance associated with business restructuring actions taken in 2015. Asset actions of $78.9 included those taken in the third quarter discussed above and a first quarter charge of $45.7 resulting from the write-down of an air separation unit in the Industrial Gases – EMEA segment that was constructed mainly to provide oxygen to one of the Energy-from-Waste plants. During the first nine months of fiscal year 2017, severance and other benefits totaled $27.5 and related to the elimination of approximately 270 positions, primarily in the Industrial Gases – Americas, Industrial Gases – EMEA and Corporate and other segments.

During fiscal year 2016, we incurred an expense of $34.5 for severance and other benefits related to the elimination of approximately 610 positions. Expense of $13.2 and $23.9 was recognized for the three and nine months ended 30 June 2016, respectively. The fiscal year 2016 expense primarily related to the Industrial Gases – Americas and Industrial Gases – EMEA segments.

The charges we record for cost reduction and asset actions have been excluded from segment operating income.

The following table summarizes the carrying amount of the accrual for cost reduction and asset actions at 30 June 2017:

	Severance and Other Benefits	Asset Actions/Other	Total
2016 Charge	$ 34.5	$ —	$34.5
Amount reflected in pension liability	(.9)	—	(.9)
Cash expenditures	(21.6)	—	(21.6)
Currency translation adjustment	.3	—	.3
30 September 2016	$ 12.3	$ —	$12.3
2017 Charge	27.5	78.9	106.4
Noncash expenses	—	(74.6)	(74.6)
Amount reflected in pension liability	(1.0)	—	(1.0)
Amount reflected in other noncurrent liabilities	—	(2.2)	(2.2)
Cash expenditures	(27.0)	(.9)	(27.9)
Currency translation adjustment	(.4)	—	(.4)
30 June 2017	$ 11.4	$ 1.2	$12.6

6. INVENTORIES

The components of inventories are as follows:

	30 June 2017	30 September 2016
Finished goods	$113.2	$ 131.3
Work in process	15.0	18.3
Raw materials, supplies and other	180.2	117.1
Total FIFO cost	$308.4	$ 266.7
Less: Excess of FIFO cost over LIFO cost	(15.1)	(11.7)
Inventories	$293.3	$ 255.0

First-in, first-out (FIFO) cost approximates replacement cost.

7. EQUITY AFFILIATES

During the third quarter of fiscal year 2017, Abdullah Hashim Industrial Gases & Equipment Co., Ltd. (AHG), a 25% owned equity affiliate in our Industrial Gases – EMEA segment, completed a review of its business plan and outlook. As a result of the revised business plan, we determined there was an other-than-temporary impairment of our investment in AHG and, therefore, recorded a noncash impairment charge of $79.5 to reduce the carrying value of our investment. This charge is reflected on our consolidated income statements within “Equity affiliates' income (loss)” and was not deductible for tax purposes. This charge has been excluded from segment operating income.

The decline in value results from expectations for lower future cash flows to be generated by AHG, primarily due to challenging economic conditions in Saudi Arabia, including the impacts of lower prices in the oil and gas industry, increased competition, and capital project growth opportunities not materializing as anticipated. The AHG investment was valued based on the results of the income and market valuation approaches.

The income approach utilized a discount rate based on a market-participant, risk-adjusted weighted average cost of capital, which considers industry required rates of return on debt and equity capital for a target industry capital structure adjusted for risks associated with size and geography. Other significant estimates and assumptions that drive our updated valuation of AHG include revenue growth rates and profit margins that were lower than those upon acquisition and our assessment of AHG's business improvement plan effectiveness.

Under the market approach, we estimated fair value based on market multiples of revenue and earnings derived from publicly-traded industrial gases companies engaged in similar lines of business, adjusted to reflect differences in size and growth prospects.

As of 30 June 2017, the carrying value of our investment in AHG is $68.5 and is reflected in our Industrial Gases – EMEA segment. The investment is reported in “Investment in net assets of and advances to equity affiliates” on our consolidated balance sheets.

8. GOODWILL

Changes to the carrying amount of consolidated goodwill by segment for the nine months ended 30 June 2017 are as follows:

	Industrial Gases– Americas	Industrial Gases– EMEA	Industrial Gases– Asia	Industrial Gases– Global	Total
Goodwill, net at 30 September 2016	$ 309.1	$ 380.6	$ 135.2	$ 20.2	$ 845.1
Impairment loss	(145.3)	—	—	—	(145.3)
Currency translation	(2.3)	8.1	(.3)	(.2)	5.3
Goodwill, net at 30 June 2017	$ 161.5	$ 388.7	$ 134.9	$ 20.0	$ 705.1

	30 June 2017	30 September 2016
Goodwill, gross	$ 1,106.5	$ 1,103.7
Accumulated impairment losses	(401.4)	(258.6)
Goodwill, net	$ 705.1	$ 845.1

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. As described in Note 2, New Accounting Guidance, we elected to early adopt new accounting guidance that simplifies the test for goodwill. The impairment test for goodwill involves calculating the fair value of each reporting unit and comparing that value to the carrying value. If the fair value of the reporting unit is less than its carrying value, the difference is recorded as a goodwill impairment charge, not to exceed the total amount of goodwill allocated to that reporting unit.

For the first nine months of fiscal year 2017, volumes declined in our Latin America reporting unit (LASA), and overall revenue growth did not meet expectations. Due to weak economic conditions in Latin America and expectations for continued volume weakness in the Latin American countries and markets in which we operate, we lowered our long-term growth projections. We conducted an interim impairment test of the goodwill associated with

LASA within the Industrial Gases – Americas segment as of 30 June 2017. As a result, we recorded a noncash goodwill impairment charge of $145.3, which has

been reflected on our consolidated income statements within “Goodwill and intangible asset impairment charge.” This charge was not deductible for tax purposes and has been excluded from segment operating income.

LASA includes assets and goodwill associated with operations in Chile and other Latin American countries. We estimated the fair value of LASA based on two valuation approaches, the income approach and the market approach. We reviewed relevant facts and circumstances in determining the weighting of the approaches.

Under the income approach, we estimated the fair value of LASA based on the present value of estimated future cash flows. Cash flow projections were based on management’s estimates of revenue growth rates and EBITDA margins, taking into consideration business and market conditions for the Latin American countries and markets in which we operate. We calculated the discount rate based on a market-participant, risk-adjusted weighted average cost of capital, which considers industry specific rates of return on debt and equity capital for a target industry capital structure, adjusted for risks associated with business size and geography.

Under the market approach, we estimated fair value based on market multiples of revenue and earnings derived from publicly-traded industrial gases companies and regional manufacturing companies, adjusted to reflect differences in size and growth prospects.

Management judgment is required in the determination of each assumption utilized in the valuation model, and actual results could differ from our estimates.

The accumulated impairment losses of $401.4 as of 30 June 2017 are attributable to LASA within the Industrial Gases–Americas segment and include the LASA impairment charge recorded in fiscal year 2014 as well as the impacts of currency translation on the losses.

Prior to completing the LASA goodwill impairment test, we tested the recoverability of LASA’s long-lived assets and other indefinite-lived intangible assets. Refer to Note 9, Intangible Assets, for additional information.

9. INTANGIBLE ASSETS

The table below provides details of acquired intangible assets:

	30 June 2017			30 September 2016		
	Gross	Accumulated Amortization/ Impairment	Net	Gross	Accumulated Amortization/ Impairment	Net
Customer relationships	$412.8	$ (134.3)	$278.5	$400.6	$ (118.2)	$282.4
Patents and technology	13.6	(10.5)	3.1	13.6	(10.1)	3.5
Other	72.5	(35.6)	36.9	73.0	(33.7)	39.3
Total finite-lived intangible assets	498.9	(180.4)	318.5	487.2	(162.0)	325.2
Trade names and trademarks, indefinite-lived	65.6	(20.3)	45.3	66.2	(3.5)	62.7
Total Intangible Assets	$564.5	$ (200.7)	$363.8	$553.4	$ (165.5)	$387.9

Indefinite-lived intangible assets are subject to impairment testing at least annually or more frequently if events or changes in circumstances indicate that potential impairment exists. The impairment test for indefinite-lived intangible assets involves calculating the fair value of the indefinite-lived intangible assets and comparing the fair value to their carrying value. If the fair value is less than the carrying value, the difference is recorded as an impairment loss.

As discussed in Note 8, Goodwill, in response to weak Latin America economic conditions and expectations for continued volume weakness in the Latin American countries and markets in which we operate, we lowered our long-term growth projections for the region. An interim impairment test of indefinite-lived intangibles associated with LASA was conducted as of 30 June 2017 utilizing the royalty savings method, a form of the income approach. We determined that the carrying value of trade names and trademarks was in excess of fair value, and as a result, we recorded a noncash impairment charge of $16.8 to reduce these indefinite-lived intangible assets to their fair value. This charge is reflected within “Goodwill and intangible asset impairment charge” on our consolidated income statements. These trade names and trademarks are included in our Industrial Gases – Americas segment. This charge has been excluded from segment operating income.

We tested the recoverability of LASA long-lived assets, including finite-lived intangible assets subject to amortization, and concluded that they were recoverable from expected future undiscounted cash flows.

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10. 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 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 the appropriate 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. 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 30 June 2017 is 2.0 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.

In addition to the forward exchange contracts that are designated as hedges, we 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 comprises many different foreign currency pairs, with a profile that changes from time to time depending on business activity and sourcing decisions.

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

	30 June 2017		30 September 2016	
	US$ Notional	Years Average Maturity	US$ Notional	Years Average Maturity
Forward Exchange Contracts:				
Cash flow hedges	$3,209.4	0.4	$4,130.3	0.5
Net investment hedges	707.5	3.0	968.2	2.7
Not designated	1,220.4	0.1	2,648.3	0.4
Total Forward Exchange Contracts	$5,137.3	0.7	$7,746.8	0.7

The notional value of forward exchange contracts not designated in the table above includes forward contracts which were hedging intercompany loans that were repaid prior to their original maturity dates in anticipation of the spin-off of Versum. The forward exchange contracts no longer qualified as cash flow hedges due to the early repayment of the loans. We entered into additional forward exchange contracts to offset these outstanding positions to eliminate any future earnings impact. The decrease in notional value from 30 September 2016 to 30 June 2017 is primarily due to the maturity of several of the aforementioned intercompany loan hedges and their offsetting positions.

In addition to the above, we 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 included €909.1 million ($1,038.8) at 30 June 2017 and €920.7 million ($1,034.4) at 30 September 2016. The designated foreign currency-denominated debt is located on the balance sheet in the long-term debt line item.

Debt Portfolio Management

It is our policy to identify on a continuing basis the need for debt capital and evaluate the financial risks inherent in funding the Company with debt capital. Reflecting the result of this ongoing review, the debt portfolio and hedging program are managed with the objectives and 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). At 30 June 2017, 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 offshore Chinese Renminbi, U.S. Dollars and Chilean Pesos, and U.S. Dollars and British Pound Sterling.

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

	30 June 2017				30 September 2016			
	US$ Notional	Average Pay %	Average Receive %	Years Average Maturity	US$ Notional	Average Pay %	Average Receive %	Years Average Maturity
Interest rate swaps (fair value hedge)	$600.0	LIBOR	2.28 %	1.5	$600.0	LIBOR	2.28 %	2.3
Cross currency interest rate swaps (net investment hedge)	$493.9	3.24 %	2.39 %	1.8	$517.7	3.24 %	2.43 %	2.6
Cross currency interest rate swaps (cash flow hedge)	$1,095.7	4.96 %	2.78 %	2.7	$1,088.9	4.77 %	2.72 %	3.3
Cross currency interest rate swaps (not designated)	$51.2	3.38 %	1.91 %	1.7	$27.4	3.62 %	.81 %	1.8

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

	Balance Sheet Location	30 June 2017	30 September 2016	Balance Sheet Location	30 June 2017	30 September 2016
Derivatives Designated as Hedging Instruments:						
Forward exchange contracts	Other receivables	$86.1	$ 72.3	Accrued liabilities	$60.8	$ 44.0
Interest rate management contracts	Other receivables	32.3	19.9	Accrued liabilities	.1	—
Forward exchange contracts	Other noncurrent assets	39.1	44.4	Other noncurrent liabilities	3.9	9.1
Interest rate management contracts	Other noncurrent assets	128.0	160.0	Other noncurrent liabilities	22.5	12.0
Total Derivatives Designated as Hedging Instruments		$285.5	$ 296.6		$87.3	$ 65.1
Derivatives Not Designated as Hedging Instruments:						
Forward exchange contracts	Other receivables	$17.9	$ 77.1	Accrued liabilities	$7.4	$ 29.5
Interest rate management contracts	Other noncurrent assets	4.4	—	Other noncurrent liabilities	.9	.7
Total Derivatives Not Designated as Hedging Instruments		$22.3	$ 77.1		$8.3	$ 30.2
Total Derivatives		$307.8	$ 373.7		$95.6	$ 95.3

Refer to Note 11, Fair Value Measurements, which defines fair value, describes the method for measuring fair value, and provides additional disclosures regarding fair value measurements.

The table below summarizes the gain or loss related to our cash flow hedges, fair value hedges, net investment hedges, and derivatives not designated as hedging instruments:

	Three Months Ended 30 June							
	Forward Exchange Contracts		Foreign Currency Debt		Other [A]		Total	
	2017	2016	2017	2016	2017	2016	2017	2016
Cash Flow Hedges, net of tax:								
Net gain (loss) recognized in OCI (effective portion)	$41.2	$(33.7)	$ —	$ —	$(18.2)	$11.5	$23.0	$(22.2)
Net (gain) loss reclassified from OCI to sales/cost of sales (effective portion)	4.3	1.0	—	—	—	—	4.3	1.0
Net (gain) loss reclassified from OCI to other income (expense), net (effective portion)	(37.9)	24.2	—	—	10.7	(18.8)	(27.2)	5.4
Net (gain) loss reclassified from OCI to interest expense (effective portion)	.4	2.6	—	—	.7	.9	1.1	3.5
Net (gain) loss reclassified from OCI to other income (expense), net (ineffective portion)	(1.8)	.1	—	—	—	—	(1.8)	.1
Fair Value Hedges:								
Net gain (loss) recognized in interest expense[B]	$—	$—	$ —	$ —	$(.6)	$(.2)	$(.6)	$(.2)
Net Investment Hedges, net of tax:								
Net gain (loss) recognized in OCI	$(23.2)	$28.2	$ (44.4)	$ 8.4	$(9.8)	$25.1	$(77.4)	$61.7
Derivatives Not Designated as Hedging Instruments:								
Net gain (loss) recognized in other income (expense), net[C]	$3.7	$(2.4)	$ —	$ —	$(.7)	$(.2)	$3.0	$(2.6)

	Nine Months Ended 30 June							
	Forward Exchange Contracts		Foreign Currency Debt		Other [A]		Total	
	2017	2016	2017	2016	2017	2016	2017	2016
Cash Flow Hedges, net of tax:								
Net gain (loss) recognized in OCI (effective portion)	$(7.1)	$(5.9)	$ —	$ —	$4.9	$12.5	$(2.2)	$6.6
Net (gain) loss reclassified from OCI to sales/cost of sales (effective portion)	10.1	2.4	—	—	—	—	10.1	2.4
Net (gain) loss reclassified from OCI to other income (expense), net (effective portion)	.8	(7.8)	—	—	(1.7)	(22.5)	(.9)	(30.3)
Net (gain) loss reclassified from OCI to interest expense (effective portion)	(2.0)	5.2	—	—	2.1	2.5	.1	7.7
Net (gain) loss reclassified from OCI to other income (expense), net (ineffective portion)	(1.5)	(.2)	—	—	—	—	(1.5)	(.2)
Fair Value Hedges:								
Net gain (loss) recognized in interest expense[B]	$—	$—	$ —	$ —	$(12.5)	$(2.0)	$(12.5)	$(2.0)
Net Investment Hedges, net of tax:								
Net gain (loss) recognized in OCI	$3.9	$21.8	$ (10.4)	$ (1.9)	$(3.2)	$33.5	$(9.7)	$53.4
Derivatives Not Designated as Hedging Instruments:								
Net gain (loss) recognized in other income (expense), net[C]	$3.3	$(2.6)	$ —	$ —	$(.5)	$(.8)	$2.8	$(3.4)

(A) Other includes the impact on other comprehensive income (OCI) and earnings primarily related to interest rate and cross currency interest rate swaps.

(B) The impact of fair value hedges noted above was largely offset by recognized gains and losses resulting from the impact of changes in related interest rates on outstanding debt.

(C) The impact of the non-designated hedges noted above was largely offset by recognized gains and losses resulting from the impact of changes in exchange rates on assets and liabilities denominated in non-functional currencies.

The amount of cash flow hedges' net losses in accumulated other comprehensive income at 30 June 2017 that are expected to be reclassified to earnings in the next twelve months is approximately $15. The balance to be reclassified consists primarily of losses on forward exchange contracts that hedged foreign currency revenues for a sale of equipment project.

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 $22.9 as of 30 June 2017 and $11.2 as of 30 September 2016. 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 $195.4 as of 30 June 2017 and $267.6 as of 30 September 2016. No financial institution is required to post collateral at this time, as all have credit ratings at or above threshold.

11. FAIR VALUE MEASUREMENTS

Fair value is defined as an exit price, i.e., 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 include time deposits with original maturities greater than three months and less than one year. The estimated fair value of the short-term investments, which approximates carrying value as of 30 June 2017 and 30 September 2016, was determined 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 take into account 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. The computation of the fair values of these instruments is generally performed by the Company. These standard pricing models utilize inputs which 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 10, Financial Instruments, for a description of derivative instruments, including details on the balance sheet line classifications.

Long-term Debt

The fair value of our debt is based on estimates using standard pricing models that take into account 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.

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

	30 June 2017		30 September 2016	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Assets				
Derivatives				
Forward exchange contracts	$143.1	$ 143.1	$193.8	$ 193.8
Interest rate management contracts	164.7	164.7	179.9	179.9
Liabilities				
Derivatives				
Forward exchange contracts	$72.1	$ 72.1	$82.6	$ 82.6
Interest rate management contracts	23.5	23.5	12.7	12.7
Long-term debt, including current portion	3,782.6	3,884.6	4,275.1	4,474.0

The carrying amounts reported in the balance sheet 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 following table summarizes assets and liabilities measured at fair value on a recurring basis in the consolidated balance sheets:

	30 June 2017				30 September 2016			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Assets at Fair Value								
Derivatives								
Forward exchange contracts	$143.1	$ —	$143.1	$ —	$193.8	$ —	$193.8	$ —
Interest rate management contracts	164.7	—	164.7	—	179.9	—	179.9	—
Total Assets at Fair Value	$307.8	$ —	$307.8	$ —	$373.7	$ —	$373.7	$ —
Liabilities at Fair Value								
Derivatives								
Forward exchange contracts	$72.1	$ —	$72.1	$ —	$82.6	$ —	$82.6	$ —
Interest rate management contracts	23.5	—	23.5	—	12.7	—	12.7	—
Total Liabilities at Fair Value	$95.6	$ —	$95.6	$ —	$95.3	$ —	$95.3	$ —

The following is a tabular presentation of nonrecurring fair value measurements along with the level within the fair value hierarchy in which the fair value measurement in its entirety falls:

	31 December 2016				2017
	Total	Level 1	Level 2	Level 3	Loss
Plant and Equipment – Continuing operations[(A)]	$1.4	$ —	$ —	$ 1.4	$45.7
Plant and Equipment – Discontinued operations[(A)]	$11.0	$ —	$ —	$ 11.0	$6.3

(A) We assessed the recoverability of the carrying value of assets associated with the EfW discontinued operation, including the air separation unit within continuing operations of our Industrial Gases – EMEA segment. We based our estimates primarily on an orderly liquidation valuation which resulted in losses for the difference between the orderly liquidation value and net book value of the assets as of 31 December 2016. There have been no significant updates to our estimates as of 30 June 2017. For additional information, see Note 3, Discontinued Operations, and Note 5, Cost Reduction and Asset Actions.

	30 June 2017				2017
	Total	Level 1	Level 2	Level 3	Loss
Investment in Equity Affiliate[(A)]	$68.5	$ —	$ —	$ 68.5	$79.5

(A) We assessed the recoverability of the carrying value of our equity investment in AHG. We estimated the fair value of our investment using weighting of the results of the income and market approaches. An impairment loss was recognized for the difference between the carrying amount and the fair value of the investment as of 30 June 2017. For additional information, see Note 7, Equity Affiliates.

During the third quarter ended 30 June 2017, we recognized a goodwill impairment charge of $145.3 and an intangible asset impairment charge of $16.8 associated with our LASA reporting unit. Refer to Note 8, Goodwill, and Note 9, Intangible Assets, for more information related to these charges and the associated fair value measurement methods and significant inputs/assumptions, which were classified as Level 3 since unobservable inputs were utilized in the fair value measurements.

12. RETIREMENT BENEFITS

The components of net periodic benefit cost for the defined benefit pension and other postretirement benefit plans for the three and nine months ended 30 June 2017 and 2016 were as follows:

	Pension Benefits				Other Benefits	
	2017		2016		2017	2016
Three Months Ended 30 June	U.S.	International	U.S.	International		
Service cost	$7.0	$ 6.5	$9.1	$ 6.1	$.2	$.5
Interest cost	27.5	8.2	27.7	11.2	.4	.5
Expected return on plan assets	(51.6)	(18.9)	(50.5)	(19.8)	—	—
Prior service cost amortization	.6	—	.7	—	—	—
Actuarial loss amortization	20.9	13.5	21.3	8.9	—	.2
Settlements	5.5	—	1.0	—	—	—
Special termination benefits	.8	—	1.4	—	—	—
Other	—	.2	—	.6	—	—
Net Periodic Benefit Cost (Total)	$10.7	$ 9.5	$10.7	$ 7.0	$.6	$1.2
Less: Discontinued Operations	—	—	(1.9)	(.2)	—	(.1)
Net Periodic Benefit Cost (Continuing Operations)	$10.7	$ 9.5	$8.8	$ 6.8	$.6	$1.1

	Pension Benefits				Other Benefits	
	2017		2016		2017	2016
Nine Months Ended 30 June	U.S.	International	U.S.	International		
Service cost	$22.2	$ 19.5	$27.4	$ 18.4	$.9	$1.6
Interest cost	80.0	23.7	83.1	33.9	1.2	1.5
Expected return on plan assets	(156.0)	(55.7)	(151.5)	(60.1)	—	—
Prior service cost amortization	1.8	(.1)	2.2	(.1)	—	—
Actuarial loss amortization	67.9	40.6	63.9	27.2	.2	.5
Settlements	9.6	1.7	3.6	—	—	—
Curtailment	4.3	(1.3)	—	—	—	—
Special termination benefits	1.8	.5	2.0	—	—	—
Other	—	.7	—	1.6	—	—
Net Periodic Benefit Cost (Total)	$31.6	$ 29.6	$30.7	$ 20.9	$2.3	$3.6
Less: Discontinued Operations	(.7)	(4.1)	(5.8)	(1.8)	—	(.1)
Net Periodic Benefit Cost (Continuing Operations)	$30.9	$ 25.5	$24.9	$ 19.1	$2.3	$3.5

Net periodic benefit cost is primarily included in cost of sales, selling and administrative expense, and pension settlement loss on our consolidated income statements. The increase in pension expense in fiscal year 2017 is primarily related to recognition of settlement, curtailment, and special termination benefits. The amount of net periodic benefit cost capitalized in fiscal year 2017 and 2016 was not material.

Certain of our pension plans provide for a lump sum benefit payment option at the time of retirement, or for corporate officers, six months after their retirement date. A participant's vested benefit is considered settled upon cash payment of the lump sum. We recognize pension settlement losses when cash payments exceed the sum of the service and interest cost components of net periodic benefit cost of the plan for the fiscal year. For the nine months ended 30 June 2017 and 2016, we recognized pension settlement losses of $9.6 and $3.0 in results of continuing operations, respectively, to accelerate recognition of a portion of actuarial losses deferred in accumulated other comprehensive loss, primarily associated with the U.S. Supplementary Pension Plan.

In connection with the disposition of the two divisions comprising the former Materials Technologies segment, we incurred settlement, curtailment, and special termination benefits totaling $6.0 for the nine months ended 30 June 2017, $2.5 of which was reflected on the consolidated income statements as "Business separation costs" during the first quarter. The remaining costs of $3.5 were recorded in the results of discontinued operations during the second quarter of 2017.

As discussed in Note 3, Discontinued Operations, we completed the spin-off of EMD as Versum on 1 October 2016. In connection with the spin-off, the Company transferred defined benefit pension assets and obligations to Versum, resulting in a net decrease in the underfunded status of the Company's sponsored pension plans of $24. As a result of the transfer of unrecognized losses to Versum, accumulated other comprehensive loss, net of tax, decreased by approximately $5. In addition, we completed the sale of PMD to Evonik on 3 January 2017. In connection with the sale, the Company transferred defined benefit pension obligations to Evonik, resulting in a net decrease in the underfunded status of the Company's sponsored pension plans of approximately $7.

For the nine months ended 30 June 2017 and 2016, our cash contributions to funded pension plans and benefit payments under unfunded pension plans were $57.0 and $68.6, respectively. Total contributions for fiscal year 2017 are expected to be approximately $65 to $85. During fiscal year 2016, total contributions were $79.3.

13. COMMITMENTS AND CONTINGENCIES

Litigation

We are involved in various legal proceedings, including commercial, competition, environmental, health, safety, product liability, and insurance matters. 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 $54 at 30 June 2017) on Air Products Brasil Ltda. This fine was based on a recommendation by a unit of the Brazilian Ministry of Justice, whose investigation began in 2003, alleging 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. We estimate the maximum possible loss to be the full amount of the fine of R$179.2 million (approximately $54 at 30 June 2017) plus interest accrued thereon until final disposition of the proceedings.

Other than this matter, 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.

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 approximately 32 sites on which a final settlement has not been reached where we, along with others, have been designated a potentially responsible party by the Environmental Protection Agency 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 30 June 2017 and 30 September 2016 included an accrual of $84.8 and $81.4, 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 $84 to a reasonably possible upper exposure of $98 as of 30 June 2017.

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 30 June 2017, $29.2 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 estimated that it would take 20 years to complete the groundwater remediation, and the costs through completion were estimated to range from $42 to $52. As no amount within the range was a better estimate than another, we recognized a pretax expense in fiscal 2006 of $42 as a component of income from discontinued operations and recorded an environmental accrual of $42 in continuing operations on the consolidated balance sheets. There has been no change to the estimated exposure range related to the Pace facility.

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 disposal cell. Several groundwater recovery systems have been installed to contain and remove contamination from groundwater. We completed an extensive assessment of the site to determine how well existing measures are working, 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 remove groundwater contaminants. 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 recently started additional field work 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. The costs we are incurring under the new Consent Order are expected to be consistent with our previous estimates.

PIEDMONT

At 30 June 2017, $16.9 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. On 13 June 2017, the SCDHEC issued its final approval to the site-wide feasibility study, and with that we will be moving towards a record of decision for the Piedmont site and into the final remedial design phase of this project. We estimate that it will take until 2019 to complete source area remediation with groundwater recovery and treatment, continuing through 2029. Thereafter, we are expecting this site to go into a state of monitored natural attenuation through 2047. We recognized a pretax expense in 2008 of $24 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 30 June 2017, $12.1 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, and establishing engineering controls. In 2012, we estimated the total exposure at this site to be $13. There have been no significant changes to the estimated exposure.

14. SHARE-BASED COMPENSATION

We have various share-based compensation programs, which include deferred stock units, stock options, and restricted stock. During the nine months ended 30 June 2017, 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 30 June 2017, there were 4,820,627 shares available for future grant under our Long-Term Incentive Plan (LTIP), which is shareholder approved.

As discussed in Note 3, Discontinued Operations, we completed the separation of EMD through the spin-off of Versum on 1 October 2016. In connection with the spin-off, the Company adjusted the number of deferred stock units and stock options pursuant to existing anti-dilution provisions in the LTIP, to preserve the intrinsic value of the awards immediately before and after the separation. The outstanding awards will continue to vest over the original vesting period defined at the grant date. Outstanding awards at the time of spin-off were primarily converted into awards of the holder's employer following the separation. The adjustment to the awards did not result in incremental fair value and no incremental compensation expense was recorded related to the conversion of these awards.

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

	Three Months Ended		Nine Months Ended	
	30 June		30 June	
	2017	2016	2017	2016
Before-Tax Share-Based Compensation Cost	$ 8.9	$ 7.5	$27.4	$23.9
Income Tax Benefit	(3.2)	(2.9)	(9.5)	(8.4)
After-Tax Share-Based Compensation Cost	$ 5.7	$ 4.6	$17.9	$15.5

Before-tax share-based compensation cost is primarily included in selling and administrative expense on our consolidated income statements. The amount of share-based compensation cost capitalized in fiscal year 2017 and 2016 was not material.

Deferred Stock Units

During the nine months ended 30 June 2017, we granted 117,692 market-based deferred stock units. The market-based deferred stock units are earned out at the end of a performance period beginning 1 October 2016 and ending 30 September 2019, conditioned on the level of the Company's 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 $156.87 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	20.6%
Risk-free interest rate	1.4 %
Expected dividend yield	2.5 %

In addition, during the nine months ended 30 June 2017, we granted 160,389 time-based deferred stock units at a weighted average grant-date fair value of $143.66.

15. EQUITY

The following is a summary of the changes in total equity:

	Three Months Ended 30 June					
	2017			2016		
	Air Products	Non-controlling Interests	Total Equity	Air Products	Non-controlling Interests	Total Equity
Balance at 31 March	$9,317.4	$ 102.8	$9,420.2	$6,916.6	$ 136.5	$7,053.1
Net income	101.9	2.2	104.1	346.8	7.3	354.1
Other comprehensive income (loss)	176.6	.2	176.8	(79.0)	(.7)	(79.7)
Dividends on common stock (per share $0.95, $0.86)	(207.0)	—	(207.0)	(186.2)	—	(186.2)
Dividends to noncontrolling interests	—	(7.9)	(7.9)	—	(8.4)	(8.4)
Share-based compensation	8.9	—	8.9	7.5	—	7.5
Treasury shares for stock option and award plans	17.8	—	17.8	32.0	—	32.0
Tax benefit of stock option and award plans[(A)]	—	—	—	6.8	—	6.8
Other equity transactions	(3.2)	.2	(3.0)	.9	.1	1.0
Balance at 30 June	$9,412.4	$ 97.5	$9,509.9	$7,045.4	$ 134.8	$7,180.2

	Nine Months Ended 30 June					
	2017			2016		
	Air Products	Non-controlling Interests	Total Equity	Air Products	Non-controlling Interests	Total Equity
Balance at 30 September	$7,079.6	$ 133.8	$7,213.4	$7,249.0	$ 132.1	$7,381.1
Net income	2,531.7	14.5	2,546.2	237.1	23.5	260.6
Other comprehensive income	159.7	2.1	161.8	.2	2.1	2.3
Dividends on common stock (per share $2.76, $2.53)	(601.0)	—	(601.0)	(546.7)	—	(546.7)
Dividends to noncontrolling interests	—	(19.5)	(19.5)	—	(23.2)	(23.2)
Share-based compensation	27.4	—	27.4	23.9	—	23.9
Treasury shares for stock option and award plans	25.5	—	25.5	62.8	—	62.8
Tax benefit of stock option and award plans[(A)]	—	—	—	16.5	—	16.5
Spin-off of Versum	186.5	(33.9)	152.6	—	—	—
Cumulative change in accounting principle[(A)]	8.8	—	8.8	—	—	—
Other equity transactions	(5.8)	.5	(5.3)	2.6	.3	2.9
Balance at 30 June	$9,412.4	$ 97.5	$9,509.9	$7,045.4	$ 134.8	$7,180.2

(A) Refer to Note 2, New Accounting Guidance, for information concerning the implementation and impact of new accounting guidance.

16. 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 nine months ended 30 June 2017:

	Derivatives qualifying as hedges	Foreign currency translation adjustments	Pension and postretirement benefits	Total
Balance at 31 March 2017	$ (58.5)	$ (1,027.7)	$ (1,307.5)	$(2,393.7)
Other comprehensive income before reclassifications	23.0	141.4	.1	164.5
Amounts reclassified from AOCL	(23.6)	8.2	27.7	12.3
Net current period other comprehensive income (loss)	(.6)	149.6	27.8	176.8
Amount attributable to noncontrolling interests	—	.2	—	.2
Balance at 30 June 2017	$ (59.1)	$ (878.3)	$ (1,279.7)	$(2,217.1)

	Derivatives qualifying as hedges	Foreign currency translation adjustments	Pension and postretirement benefits	Total
Balance at 30 September 2016	$ (65.0)	$ (949.3)	$ (1,374.0)	$(2,388.3)
Other comprehensive income (loss) before reclassifications	(2.2)	9.8	3.9	11.5
Amounts reclassified from AOCL	7.8	57.3	85.2	150.3
Net current period other comprehensive income	5.6	67.1	89.1	161.8
Spin-off of Versum	.2	6.0	5.3	11.5
Amount attributable to noncontrolling interests	(.1)	2.1	.1	2.1
Balance at 30 June 2017	$ (59.1)	$ (878.3)	$ (1,279.7)	$(2,217.1)

The table below summarizes the reclassifications out of accumulated other comprehensive loss and the affected line item on the consolidated income statements:

	Three Months Ended 30 June		Nine Months Ended 30 June	
	2017	2016	2017	2016
(Gain) Loss on Cash Flow Hedges, net of tax				
Sales/Cost of sales	$4.3	$1.0	$10.1	$2.4
Other income (expense), net	(29.0)	5.5	(2.4)	(30.5)
Interest expense	1.1	3.5	.1	7.7
Total (Gain) Loss on Cash Flow Hedges, net of tax	$(23.6)	$10.0	$7.8	$(20.4)
Currency Translation Adjustment				
Cost reduction and asset actions[A]	$8.2	$—	$8.2	$—
Income (loss) from discontinued operations, net of tax[B]	—	(.1)	49.1	2.7
Total Currency Translation Adjustment	$8.2	$(.1)	$57.3	$2.7
Pension and Postretirement Benefits, net of tax[C]	$27.7	$21.6	$85.2	$65.4

(A) Impact relates to the planned sale of a non-industrial gas hardgoods business in the Industrial Gases – Americas segment.

(B) The fiscal year 2017 impact relates to the sale of PMD during the second quarter. The fiscal year 2016 impact primarily relates to the sale of an equity affiliate in the first quarter.

(C)

The components include items such as prior service cost amortization, actuarial loss amortization, and settlements and are reflected in net periodic benefit cost. Refer to Note 12, Retirement Benefits.

17. EARNINGS PER SHARE

The following table sets forth the computation of basic and diluted earnings per share:

	Three Months Ended		Nine Months Ended	
	30 June		30 June	
	2017	2016	2017	2016
Numerator				
Income from continuing operations	$ 104.2	$ 250.3	$660.2	$810.1
Income (Loss) from discontinued operations	(2.3)	96.5	1,871.5	(573.0)
Net Income Attributable to Air Products	$ 101.9	$ 346.8	$2,531.7	$237.1
Denominator (in millions)				
Weighted average common shares — Basic	218.1	216.6	217.9	216.1
Effect of dilutive securities				
Employee stock option and other award plans	1.7	1.9	1.9	1.9
Weighted average common shares — Diluted	219.8	218.5	219.8	218.0
Basic Earnings Per Common Share Attributable to Air Products				
Income from continuing operations	$ .48	$ 1.16	$3.03	$3.75
Income (Loss) from discontinued operations	(.01)	.44	8.59	(2.65)
Net Income Attributable to Air Products	$ .47	$ 1.60	$11.62	$1.10
Diluted Earnings Per Common Share Attributable to Air Products				
Income from continuing operations	$ .47	$ 1.15	$3.00	$3.72
Income (Loss) from discontinued operations	(.01)	.44	8.52	(2.63)
Net Income Attributable to Air Products	$ .46	$ 1.59	$11.52	$1.09

For the three and nine months ended 30 June 2017, there were no antidilutive outstanding share-based awards. Outstanding share-based awards of .2 million shares were antidilutive and therefore excluded from the computation of diluted earnings per share for the three and nine months ended 30 June 2016.

18. SUPPLEMENTAL INFORMATION

Cash Paid for Taxes (Net of Cash Refunds)

On a total company basis, income tax payments, net of refunds, were $1,109.8 and $330.1 for the nine months ended 30 June 2017 and 2016, respectively.

Credit Agreement

On 31 March 2017, we entered into a five-year $2,500.0 revolving credit agreement with a syndicate of banks (the "2017 Credit Agreement"), under which senior unsecured debt is available to both the Company and certain of its subsidiaries. The 2017 Credit Agreement provides a source of liquidity for the Company and supports its commercial paper program. The Company's only financial covenant is a maximum ratio of total debt to total capitalization (total debt plus total equity) no greater than 70%. No borrowings were outstanding under the 2017 Credit Agreement as of 30 June 2017.

The 2017 Credit Agreement terminates and replaces our previous $2,690.0 revolving credit agreement (the "2013 Credit Agreement"), which was to mature 30 April 2018. No borrowings were outstanding under the previous agreement at the time of its termination, and no early termination penalties were incurred.

Subsequent Event

On 20 July 2017, the Board of Directors declared the fourth quarter dividend of $.95. The dividend is payable on 13 November 2017 to shareholders of record at the close of business on 10 October 2017.

19. BUSINESS SEGMENT INFORMATION

Our reporting segments reflect the manner in which our chief operating decision maker reviews results and allocates resources. Except in 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 liquefied natural gas (LNG) and helium storage and distribution sale of equipment businesses are aggregated within the Corporate and other segment.

Our reporting segments are:

- Industrial Gases – Americas
- Industrial Gases – EMEA (Europe, Middle East, and Africa)
- Industrial Gases – Asia
- Industrial Gases – Global
- Corporate and other

The results of the Corporate and other segment include stranded costs related to the presentation of the two divisions comprising the former Materials Technologies segment as discontinued operations. The majority of these costs are reimbursed to Air Products pursuant to short-term transition services agreements under which Air Products will provide transition services to Versum for EMD and to Evonik for PMD. The reimbursement has been reflected on the consolidated income statements within “Other income (expense), net.”

	Industrial Gases– Americas	Industrial Gases– EMEA	Industrial Gases– Asia	Industrial Gases– Global	Corporate and other	Segment Total
Three Months Ended 30 June 2017						
Sales	$ 930.1	$ 451.7	$ 538.3	$ 187.4	$ 14.4	$2,121.9
Operating income (loss)	236.2	94.1	149.1	27.9	(44.4)	462.9
Depreciation and amortization	117.0	45.1	49.6	2.3	2.9	216.9
Equity affiliates' income	14.1	15.7	12.5	.3	—	42.6
Three Months Ended 30 June 2016						
Sales	$ 832.3	$ 428.7	$ 449.0	$ 150.8	$ 53.7	$1,914.5
Operating income (loss)	234.0	104.0	118.7	(13.9)	(24.5)	418.3
Depreciation and amortization	112.1	45.1	49.5	2.0	4.8	213.5
Equity affiliates' income	16.0	11.3	14.8	—	—	42.1
Nine Months Ended 30 June 2017						
Sales	$2,684.1	$1,265.6	$1,412.5	$551.8	$70.5	$5,984.5
Operating income (loss)	684.5	268.6	379.2	58.9	(114.4)	1,276.8
Depreciation and amortization	344.8	128.9	145.6	6.0	9.5	634.8
Equity affiliates' income	41.8	33.5	38.9	.6	—	114.8
Nine Months Ended 30 June 2016						
Sales	$2,466.7	$1,290.1	$1,271.5	$341.7	$188.2	$5,558.2
Operating income (loss)	669.1	286.3	341.0	(44.0)	(57.9)	1,194.5
Depreciation and amortization	330.9	140.1	150.2	5.9	15.0	642.1
Equity affiliates' income (loss)	38.2	26.1	43.9	(.5)	—	107.7
Total Assets						
30 June 2017	$5,765.6	$3,205.4	$4,262.6	$283.6	$4,326.8	$17,844.0
30 September 2016	5,896.7	3,178.6	4,232.7	367.6	2,384.5	16,060.1

The sales information noted above relates to external customers only. All intersegment sales are eliminated in consolidation. For the three and nine months ended 30 June 2017, the Industrial Gases – Global segment had intersegment sales of $57.4 and $179.4, respectively. For the three and nine months ended 30 June 2016, the Industrial Gases – Global segment had intersegment sales of $63.0 and $174.2, respectively. These sales are generally transacted at market pricing. For all other segments, intersegment sales are not material for all periods presented. Equipment manufactured for our industrial gases segments is generally transferred at cost and not reflected as an intersegment sale.

Changes in estimates on projects accounted for under the percentage-of-completion method favorably impacted operating income by approximately $15 and $27 during the three and nine months ended 30 June 2017.

Below is a reconciliation of segment total operating income to consolidated operating income:

	Three Months Ended 30 June		Nine Months Ended 30 June	
Operating Income	2017	2016	2017	2016
Segment total	$462.9	$418.3	$1,276.8	$1,194.5
Business separation costs	—	(9.5)	(30.2)	(28.9)
Cost reduction and asset actions	(42.7)	(13.2)	(103.0)	(23.9)
Pension settlement loss	(5.5)	(1.0)	(9.6)	(3.0)
Goodwill and intangible asset impairment charge	(162.1)	—	(162.1)	—
Consolidated Total	$252.6	$394.6	$971.9	$1,138.7

Below is a reconciliation of segment total equity affiliates' income to consolidated equity affiliates' income (loss):

	Three Months Ended 30 June		Nine Months Ended 30 June	
Equity Affiliates' Income (Loss)	2017	2016	2017	2016
Segment total	$42.6	$42.1	$114.8	$107.7
Equity method investment impairment charge	(79.5)	—	(79.5)	—
Consolidated Total	$(36.9)	$42.1	$35.3	$107.7

Below is a reconciliation of segment total assets to consolidated total assets:

	30 June	30 September
Total Assets	2017	2016
Segment total	$17,844.0	$ 16,060.1
Discontinued operations	9.8	1,968.5
Consolidated Total	$17,853.8	$ 18,028.6

Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations
(Millions of dollars, except for share data)

The disclosures in this quarterly report are complementary to those made in our 2016 Form 10-K filed on 21 November 2016, portions of which were updated in the Company's Current Report on Form 8-K filed on 5 June 2017 to reflect the classification of the former Materials Technologies segment as a discontinued operation. An analysis of results for the third quarter and first nine months of fiscal year 2017 is provided in the Management’s Discussion and Analysis to follow.

On 1 October 2016, we completed the spin-off of EMD as Versum Materials, Inc., or Versum. On 3 January 2017, we completed the sale of PMD to Evonik Industries AG for $3.8 billion in cash subject to customary post closing adjustments, including working capital. As a result, these divisions are reflected in our consolidated financial statements as discontinued operations for all periods presented.

The discussion that follows, unless otherwise indicated, is on a continuing operations basis. All comparisons in the discussion are to the corresponding prior year unless otherwise stated. All amounts presented are in accordance with U.S. generally accepted accounting principles (GAAP), except as noted.

Captions such as income from continuing operations attributable to Air Products, net income attributable to Air Products, and diluted earnings per share attributable to Air Products are simply referred to as “income from continuing operations,” “net income,” and “diluted earnings per share” throughout this Management’s Discussion and Analysis, unless otherwise stated.

The discussion of results that follows includes comparisons to non-GAAP financial measures. The presentation of non-GAAP measures is intended to enhance the usefulness of financial information by providing measures which, when viewed together with our financial results reported in accordance with GAAP, provide a more complete understanding of the factors and trends affecting our historical financial performance and projected future results. The reconciliations of reported GAAP results to non GAAP measures are presented on pages 50-56. Descriptions of the excluded items appear on pages 38 and 45-46.

THIRD QUARTER 2017 VS. THIRD QUARTER 2016

THIRD QUARTER 2017 IN SUMMARY

- Sales of $2,121.9 increased 11%, or $207.4, from higher volumes of 8% and higher energy contractual pass-through to customers of 5%, partially offset by 2% of unfavorable currency impacts.
- Operating income of $252.6 decreased 36%, or $142.0, and operating margin of 11.9% decreased 870 basis points (bp). On a non-GAAP basis, operating income of $462.9 increased 11%, or $44.6, and operating margin of 21.8% was flat versus the prior year.
- During the third quarter of fiscal year 2017, we recorded noncash impairment charges, of which $162.1 impacted operating income and related to the impairment of goodwill and intangible assets associated with our Latin America reporting unit and $79.5 impacted equity affiliates' income and related to an other-than-temporary impairment of our investment in an equity affiliate in Saudi Arabia.
- Adjusted EBITDA of $722.4 increased 7%, or $48.5. Adjusted EBITDA margin of 34.0% decreased 120 bp.
- Income from continuing operations of $104.2 decreased 58%, or $146.1, and diluted earnings per share of $.47 decreased 59%, or $.68. On a non-GAAP basis, income from continuing operations of $363.0 increased 16%, or $49.2, and diluted earnings per share of $1.65 increased 15%, or $.21. A summary table of changes in diluted earnings per share is presented below.

Changes in Diluted Earnings per Share Attributable to Air Products

	Three Months Ended 30 June		Increase
	2017	2016	(Decrease)
Diluted Earnings per Share			
Net income	$ .46	$ 1.59	$ (1.13)
Income (Loss) from discontinued operations	(.01)	.44	(.45)
Income from Continuing Operations – GAAP Basis	$ .47	$ 1.15	$ (.68)
Operating Income Impact (after-tax)			
Underlying business			
Volume			$ .19
Price/raw materials			(.01)
Costs			(.02)
Currency			(.01)
Business separation costs			.03
Cost reduction and asset actions			(.10)
Pension settlement loss			(.02)
Goodwill and intangible asset impairment charge			(.70)
Operating Income			$ (.64)
Other (after-tax)			
Equity affiliates' income			$ —
Equity method investment impairment charge			(.36)
Interest expense			.02
Other non-operating income (expense), net			.03
Income tax			.02
Tax benefit associated with business separation			.26
Weighted average diluted shares			(.01)
Other			$ (.04)
Total Change in Diluted Earnings per Share from Continuing Operations – GAAP Basis			$ (.68)

	Three Months Ended 30 June		Increase
	2017	2016	(Decrease)
Income from Continuing Operations – GAAP Basis	$ .47	$ 1.15	$ (.68)
Business separation costs	—	.03	(.03)
Tax (benefit) costs associated with business separation	(.04)	.22	(.26)
Cost reduction and asset actions	.14	.04	.10
Pension settlement loss	.02	—	.02
Goodwill and intangible asset impairment charge	.70	—	.70
Equity method investment impairment charge	.36	—	.36
Income from Continuing Operations – Non-GAAP Basis	$ 1.65	$ 1.44	$ .21

RESULTS OF OPERATIONS

Discussion of Consolidated Results

	Three Months Ended 30 June					
	2017		2016		$ Change	Change
Sales	$2,121.9		$1,914.5		$ 207.4	11 %
Operating income	252.6		394.6		(142.0)	(36)%
Operating margin	11.9	%	20.6	%		(870 bp)
Equity affiliates' income	(36.9)		42.1		(79.0)	(188)%
Non-GAAP Basis						
Adjusted EBITDA	$722.4		$673.9		$ 48.5	7 %
Adjusted EBITDA margin	34.0	%	35.2	%		(120 bp)
Adjusted operating income	462.9		418.3		44.6	11 %
Adjusted operating margin	21.8	%	21.8	%		— bp
Adjusted equity affiliates' income	42.6		42.1		.5	1 %

Sales

	% Change from Prior Year
Underlying business	
Volume	8 %
Price	— %
Currency	(2)%
Energy and natural gas cost pass-through	5 %
Total Consolidated Change	11 %

Underlying sales were up 8% from higher volumes as pricing was flat. Volumes were higher across the regional Industrial Gases segments. Higher sale of equipment volumes associated with the Industrial Gases – Global segment, including the Jazan project, were mostly offset by lower liquefied natural gas (LNG) sales in the Corporate and other segment. Price was unchanged as increases in the Industrial Gases – Asia segment were offset by weakness in the Industrial Gases – EMEA segment. Unfavorable currency impacts, primarily from the British Pound Sterling and the Chinese Renminbi, reduced sales by 2%. Higher energy and natural gas cost pass-through to customers increased sales by 5%.

Operating Income and Margin

Operating income of $252.6 decreased 36%, or $142.0, primarily due to the goodwill and intangible asset impairment charge of $162 and higher cost reduction and asset actions of $30, partially offset by favorable volumes of $55. Operating margin of 11.9% decreased 870 bp primarily due to the goodwill and intangible asset impairment charge and cost reduction and asset actions.

On a non-GAAP basis, operating income of $462.9 increased $44.6 as favorable volumes of $55 were partially offset by higher costs of $5, lower price net of power costs of $3, and unfavorable currency impacts of $2. Operating margin of 21.8% was flat as higher energy and natural gas cost pass-through was offset by favorable volumes.

Adjusted EBITDA

We define Adjusted EBITDA as income from continuing operations (including noncontrolling interests) excluding certain disclosed items, which the Company does 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 provides a useful metric for management to assess operating performance.

Adjusted EBITDA of $722.4 increased 7%, or $48.5, primarily due to favorable volumes. Adjusted EBITDA margin of 34.0% decreased 120 bp as higher energy and natural gas cost pass-through was partially offset by favorable volumes.

Equity Affiliates' Income (Loss)

Equity affiliates' loss of $36.9 decreased $79.0 from income in fiscal year 2016 and includes a noncash impairment charge of $79.5 ($.36 per share) on our investment in Abdullah Hashim Industrial Gases & Equipment Co., Ltd. (AHG), a 25%-owned equity affiliate in our Industrial Gases – EMEA segment. On a non-GAAP basis, equity affiliates' income of $42.6 increased 1%, or $.5.

Refer to Note 7, Equity Affiliates, to the consolidated financial statements for additional information regarding the impairment charge.

Cost of Sales and Gross Margin

Cost of sales of $1,486.2 increased $166.0 due to higher energy and natural gas costs of $91, higher costs attributable to sales volumes of $86, and higher operating costs of $21, partially offset by favorable currency impacts of $32.

Gross margin of 30.0% decreased 100 bp, primarily due to unfavorable costs, including higher energy and natural gas cost pass-through, partially offset by favorable volumes and currency.

Selling and Administrative Expense

Selling and administrative expense of $184.5 increased $16.1, primarily due to higher costs in support of transition services agreements with Versum and Evonik, for which the reimbursement is reflected in other income (expense), net. Selling and administrative expense, as a percent of sales, decreased from 8.8% to 8.7%.

Research and Development

Research and development expense of $14.6 decreased $4.1. Research and development expense, as a percent of sales, decreased from 1.0% to .7%.

Business Separation Costs

With the disposition of the two divisions comprising the former Materials Technologies segment complete, no business separation costs were incurred during the third quarter of fiscal year 2017. For the three months ended 30 June 2016, we incurred separation costs of $9.5 ($6.5 after-tax, or $.03 per share). These costs are reflected on the consolidated income statements as “Business separation costs” and include legal and advisory costs. Refer to Note 3, Discontinued Operations, to the consolidated financial statements for additional information regarding the dispositions.

Cost Reduction and Asset Actions

During the three months ended 30 June 2017, we recognized an expense of $42.7 ($30.0 attributable to Air Products, after-tax, or $.14 per share), of which $33.2 relates to asset actions and $9.5 relates to severance and other benefits. The asset actions primarily include charges resulting from the planned sale of a non-industrial gas hardgoods business in the Industrial Gases – Americas segment and the closure of a facility in the Corporate and other segment that manufactured LNG heat exchangers.

During the three months ended 30 June 2016, we recognized an expense of $13.2 ($8.7 after-tax, or $.04 per share) for severance and other benefits. Refer to Note 5, Cost Reduction and Asset Actions, to the consolidated financial statements for additional details.

Pension Settlement Losses

Certain of our pension plans provide for a lump sum benefit payment option at the time of retirement, or for corporate officers, six months after their retirement date. A participant's vested benefit is considered settled upon cash payment of the lump sum. We recognize pension settlement losses when cash payments exceed the sum of the service and interest cost components of net periodic benefit cost of the plan for the fiscal year. During the three months ended 30 June 2017 and 2016, we recognized pension settlement losses of $5.5 ($3.4 after-tax, or $.02 per share) and $1.0 ($.6 after-tax), respectively, to accelerate recognition of a portion of actuarial losses deferred in accumulated other comprehensive loss, primarily associated with the U.S. Supplementary Pension Plan. We expect that additional settlement losses will be recognized during the fourth quarter of fiscal year 2017.

Goodwill And Intangible Asset Impairment Charge

During the third quarter of fiscal year 2017, we determined that the goodwill and indefinite-lived intangible assets (primarily acquired trade names) associated with our Latin America reporting unit of our Industrial Gases – Americas segment were impaired. We recorded a noncash impairment charge of $162.1 ($154.1 attributable to Air Products, after-tax, or $.70 per share), which was driven by lower economic growth and profitability in the region. Refer to Note

8, Goodwill, and Note 9, Intangible Assets, to the consolidated financial statements for additional details.

Other Income (Expense), Net

Other income (expense), net of $26.3 increased $15.2, primarily due to income from transition services agreements with Versum and Evonik and a favorable foreign exchange impact.

Interest Expense

	Three Months Ended 30 June	
	2017	2016
Interest incurred	$ 32.9	$ 39.0
Less: capitalized interest	3.1	3.9
Interest expense	$ 29.8	$ 35.1

Interest incurred decreased $6.1 as the impact from a lower average debt balance was partially offset by the impact from a higher average interest rate on the debt portfolio.

Other Non-Operating Income (Expense), net

Other non-operating income (expense), net of $9.8 primarily resulted from interest income on cash and time deposits, which are comprised primarily of proceeds from the sale of PMD that was completed during the second quarter of fiscal year 2017.

Effective Tax Rate

The effective tax rate equals the income tax provision divided by income from continuing operations before taxes. The effective tax rate was 45.6% and 36.3% for the three months ended 30 June 2017 and 2016, respectively. The current year rate included an impact of 2,400 bp due to both a goodwill impairment charge in our Latin America reporting unit and an impairment of an equity method investment for which no tax benefits were available. This was partially offset by a 200 bp decrease due to tax benefits related to changes in tax positions on business separation activities and a decrease of 80 bp from excess tax benefits on share-based compensation. The 2016 rate included an impact of 1,100 bp due to tax costs of a dividend from a foreign subsidiary and other business separation costs for which a tax benefit was estimated to not be available. On a non-GAAP basis, the effective tax rate was 24.0% and 24.9% for the three months ended 30 June 2017 and 2016, respectively. The decrease was primarily due to excess tax benefits on share-based compensation. Refer to Note 2, New Accounting Guidance, to the consolidated financial statements for additional information on our adoption of the share-based compensation accounting guidance.

Discontinued Operations

The results of our former Materials Technologies segment, which contained EMD and PMD, and the former Energy-from-Waste segment have been presented as discontinued operations. Refer to Note 3, Discontinued Operations, to the consolidated financial statements for additional information, including detail of the major line items that comprise income from discontinued operations, net of tax, on the consolidated income statements for the three months ended 30 June 2017 and 2016.

Segment Analysis

Industrial Gases – Americas

	Three Months Ended 30 June			
	2017	2016	$ Change	% Change
Sales	$ 930.1	$ 832.3	$ 97.8	12%
Operating income	236.2	234.0	2.2	1%
Operating margin	25.4 %	28.1 %		(270 bp)
Equity affiliates' income	14.1	16.0	(1.9)	(12)%
Adjusted EBITDA	367.3	362.1	5.2	1%
Adjusted EBITDA margin	39.5 %	43.5 %		(400 bp)

Industrial Gases – Americas Sales

	% Change from Prior Year
Underlying business	
Volume	3 %
Price	— %
Currency	— %
Energy and natural gas cost pass-through	9 %
Total Industrial Gases – Americas Sales Change	12 %

Underlying sales were up 3% from higher volumes as pricing was flat. In North America, volumes increased 3%, primarily due to higher hydrogen volumes in the Gulf Coast and modest merchant growth across most product lines. Higher energy and natural gas cost pass-through to customers increased sales by 9%.

Industrial Gases – Americas Operating Income and Margin

Operating income of $236.2 increased $2.2, as favorable volumes of $4 were partially offset by higher costs of $2. Operating margin of 25.4% decreased 270 bp from the prior year, primarily due to higher energy and natural gas cost pass-through to customers.

Industrial Gases – Americas Equity Affiliates' Income

Equity affiliates' income of $14.1 decreased $1.9.

Industrial Gases – Europe, Middle East, and Africa (EMEA)

	Three Months Ended 30 June			
	2017	2016	$ Change	% Change
Sales	$451.7	$428.7	$ 23.0	5%
Operating income	94.1	104.0	(9.9)	(10)%
Operating margin	20.8 %	24.3 %		(350 bp)
Equity affiliates' income	15.7	11.3	4.4	39%
Adjusted EBITDA	154.9	160.4	(5.5)	(3)%
Adjusted EBITDA margin	34.3 %	37.4 %		(310 bp)

Industrial Gases – EMEA Sales

	% Change from Prior Year
Underlying business	
Volume	6 %
Price	(1)%
Currency	(4)%
Energy and natural gas cost pass-through	4 %
Total Industrial Gases – EMEA Sales Change	5 %

Underlying sales were up 5% from higher volumes of 6%, partially offset by lower pricing of 1%. Volumes increased primarily due to a new plant onstream in India. Unfavorable currency impacts, primarily from the British Pound Sterling, reduced sales by 4%. Higher energy and natural gas cost pass-through to customers increased sales by 4%.

Industrial Gases – EMEA Operating Income and Margin

Operating income of $94.1 decreased 10%, or $9.9, primarily due to lower price net of power costs of $7 and unfavorable currency impacts of $5, partially offset by favorable costs of $2. Operating margin of 20.8% decreased 350 bp from the prior year, primarily due to unfavorable price net of power costs, unfavorable volume mix, and higher energy and natural gas cost pass-through to customers.

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Industrial Gases – EMEA Equity Affiliates' Income

Equity affiliates' income of $15.7 increased $4.4 and included higher volumes.

Industrial Gases – Asia

	Three Months Ended 30 June			
	2017	2016	$ Change	% Change
Sales	$538.3	$449.0	$ 89.3	20%
Operating income	149.1	118.7	30.4	26%
Operating margin	27.7 %	26.4 %		130 bp
Equity affiliates' income	12.5	14.8	(2.3)	(16)%
Adjusted EBITDA	211.2	183.0	28.2	15%
Adjusted EBITDA margin	39.2 %	40.8 %		(160 bp)

Industrial Gases – Asia Sales

	% Change from Prior Year
Underlying business	
Volume	20 %
Price	2 %
Currency	(2)%
Energy and natural gas cost pass-through	— %
Total Industrial Gases – Asia Sales Change	20 %

Underlying sales were up 22% from higher volumes of 20% and higher pricing of 2%. Approximately half the volume increase was attributable to short-term sale of equipment activity while the remaining increase was evenly split between impacts from new plant onstreams and base business growth. Base business growth was driven by higher merchant volumes across Asia. Merchant pricing improved across Asia, including China. Unfavorable currency impacts, primarily from the Chinese Renminbi, partially offset by strengthening of the South Korean Won and Taiwan Dollar, reduced sales by 2%.

Industrial Gases – Asia Operating Income and Margin

Operating income of $149.1 increased 26%, or $30.4, primarily due to higher volumes of $35 and favorable price net of power costs of $5, partially offset by higher operating costs of $9. Operating margin of 27.7% increased 130 bp from the prior year, as higher volumes and favorable price net of power costs was partially offset by unfavorable cost performance.

Industrial Gases – Asia Equity Affiliates' Income

Equity affiliates' income of $12.5 decreased $2.3, primarily due to a favorable insurance settlement in the prior year.

Industrial Gases – Global

	Three Months Ended 30 June			
	2017	2016	$ Change	% Change
Sales	$187.4	$150.8	$ 36.6	24%
Operating income (loss)	27.9	(13.9)	41.8	301%
Adjusted EBITDA	30.5	(11.9)	42.4	356%

Industrial Gases – Global Sales and Operating Income (Loss)

The Industrial Gases – Global segment includes sales of cryogenic and gas processing equipment for air separation and centralized global costs associated with management of all the regional Industrial Gases segments.

Sales of $187.4 increased $36.6, or 24%. The increase in sales was driven by a sale of equipment contract for multiple air separation units that will serve Saudi Aramco's Jazan oil refinery and power plant in Saudi Arabia, partially offset by a decrease in small equipment and other air separation unit sales.

Operating income of $27.9 increased $41.8 from an operating loss in the prior year, primarily from income on the Jazan project.

Corporate and other

	Three Months Ended 30 June			
	2017	2016	$ Change	% Change
Sales	$14.4	$53.7	$ (39.3)	(73)%
Operating loss	(44.4)	(24.5)	(19.9)	(81)%
Adjusted EBITDA	(41.5)	(19.7)	(21.8)	(111)%

Corporate and other Sales and Operating Loss

Sales of $14.4 decreased $39.3, primarily due to lower LNG project activity. We expect delays in new LNG project orders due to continued oversupply of LNG in the market. Operating loss of $44.4 increased $19.9 due to lower LNG activity, partially offset by income from transition service agreements with Versum and Evonik.

FIRST NINE MONTHS 2017 VS. FIRST NINE MONTHS 2016

FIRST NINE MONTHS 2017 IN SUMMARY

- Sales of $5,984.5 increased 8%, or $426.3, as underlying sales growth of 6% and higher energy and natural gas cost pass through to customers of 4% were partially offset by unfavorable currency impacts of 2%. The underlying sales growth was primarily from higher volumes in the Industrial Gases – Asia and Industrial Gases – Global segments.
- Operating income of $971.9 decreased 15%, or $166.8, and operating margin of 16.2% decreased 430 bp. On a non-GAAP basis, operating income of $1,276.8 increased 7%, or $82.3, and operating margin of 21.3% decreased 20 bp.
- During the third quarter of fiscal year 2017, we recorded noncash impairment charges, of which $162.1 impacted operating income and related to the impairment of goodwill and intangible assets associated with our Latin America reporting unit and $79.5 impacted equity affiliates' income and related to an other-than-temporary impairment of our investment in an equity affiliate in Saudi Arabia.
- Adjusted EBITDA of $2,026.4 increased 4%, or $82.1. Adjusted EBITDA margin of 33.9% decreased 110 bp.
- Income from continuing operations of $660.2 decreased 19%, or $149.9, and diluted earnings per share of $3.00 decreased 19%, or $.72. On a non-GAAP basis, income from continuing operations of $999.2 increased 10%, or $94.6, and diluted earnings per share of $4.55 increased 10%, or $.40. A summary table of changes in diluted earnings per share is presented below.
- We completed the spin-off of EMD as Versum Materials, Inc. on 1 October 2016.
- We completed the sale of PMD to Evonik Industries AG on 3 January 2017.
- We increased our quarterly dividend by 10% from $.86 to $.95 per share. This represents the 35th consecutive year that we have increased our dividend payment.

Changes in Diluted Earnings per Share Attributable to Air Products

	Nine Months Ended 30 June		
	2017	2016	Increase (Decrease)
Diluted Earnings per Share			
Net income	$ 11.52	$ 1.09	$ 10.43
Income (Loss) from discontinued operations	8.52	(2.63)	11.15
Income from Continuing Operations – GAAP Basis	$ 3.00	$ 3.72	$ (.72)
Operating Income Impact (after-tax)			
Underlying business			
Volume			$ .20
Price/raw materials			(.04)
Costs			.18
Currency			(.05)
Business separation costs			—
Cost reduction and asset actions			(.28)
Pension settlement loss			(.02)
Goodwill and intangible asset impairment charge			(.70)
Operating Income			$ (.71)
Other (after-tax)			
Equity affiliates' income			.02
Equity method investment impairment charge			(.36)
Interest expense			(.02)
Other non-operating income (expense), net			.07
Income tax			.08
Tax costs associated with business separation			.24
Weighted average diluted shares			(.04)
Other			$ (.01)

Total Change in Diluted Earnings per Share from Continuing Operations – GAAP Basis	$ (.72)

	Nine Months Ended 30 June		
	2017	2016	Increase (Decrease)
Income from Continuing Operations – GAAP Basis	$3.00	$3.72	$ (.72)
Business separation costs	.12	.12	—
Tax (benefit) costs associated with business separation	(.02)	.22	(.24)
Cost reduction and asset actions	.36	.08	.28
Pension settlement loss	.03	.01	.02
Goodwill and intangible asset impairment charge	.70	—	.70
Equity method investment impairment charge	.36	—	.36
Income from Continuing Operations – Non-GAAP Basis	$4.55	$4.15	$ .40

RESULTS OF OPERATIONS

Discussion of Consolidated Results

	Nine Months Ended 30 June			
	2017	2016	$ Change	Change
Sales	$5,984.5	$5,558.2	$ 426.3	8 %
Operating income	971.9	1,138.7	(166.8)	(15)%
Operating margin	16.2 %	20.5 %		(430 bp)
Equity affiliates' income	35.3	107.7	(72.4)	(67)%
Non-GAAP Basis				
Adjusted EBITDA	2,026.4	1,944.3	82.1	4 %
Adjusted EBITDA margin	33.9 %	35.0 %		(110 bp)
Adjusted operating income	1,276.8	1,194.5	82.3	7 %
Adjusted operating margin	21.3 %	21.5 %		(20 bp)
Adjusted equity affiliates' income	114.8	107.7	7.1	7 %

Sales

	% Change from Prior Year
Underlying business	
Volume	6 %
Price	—
Currency	(2)%
Energy and natural gas cost pass-through	4 %
Total Consolidated Change	8 %

Underlying sales were up 6% from higher volumes as pricing was flat. Taken together, higher sale of equipment volumes from the Industrial Gases – Global segment, including the Jazan project, and lower LNG sales in the Corporate and other segment increased volumes by 2%. Volumes in the regional Industrial Gases segments grew 4%, primarily driven by higher volumes in the Industrial Gases – Asia segment. Unfavorable currency impacts reduced sales by 2% and higher energy and natural gas cost pass through to customers increased sales by 4%.

Operating Income and Margin

Operating income of $971.9 decreased 15%, or $166.8, as a goodwill and intangible asset impairment charge of $162, higher cost reduction and asset actions of $79, unfavorable price net of power costs of $13, unfavorable currency impacts of $13, and higher pension settlement losses of $7 were partially offset by favorable volumes of $57 and favorable net operating costs of $50. Net operating costs were lower primarily due to benefits from operational improvements and higher other income. Operating margin of 16.2% decreased 430bp, primarily due to the goodwill and intangible asset impairment charge and higher cost reduction and asset actions.

On a non-GAAP basis, operating income of $1,276.8 increased 7%, or $82.3, and operating margin of 21.3% decreased 20bp, as higher energy and natural gas cost pass-through to customers and unfavorable price net of power costs were mostly offset by lower costs.

Adjusted EBITDA

We define Adjusted EBITDA as income from continuing operations (including noncontrolling interests) excluding certain disclosed items, which the Company does 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 provides a useful metric for management to assess operating performance.

Adjusted EBITDA of $2,026.4 increased 4%, or $82.1, primarily due to higher volumes and favorable cost performance. Adjusted EBITDA margin of 33.9% decreased 110 bp, primarily due to higher energy and natural gas cost pass-through to customers and unfavorable price net of power costs, partially offset by lower operating costs.

Equity Affiliates' Income (Loss)

Income from equity affiliates of $35.3 decreased $72.4, primarily due to a noncash impairment charge of $79.5 ($.36 per share) on our investment in Abdullah Hashim Industrial Gases & Equipment Co., Ltd. (AHG), a 25%-owned equity affiliate in our Industrial Gases – EMEA segment. On a non-GAAP basis, equity affiliates' income of $114.8 increased 7%, or $7.1.

Refer to Note 7, Equity Affiliates, to the consolidated financial statements for additional information regarding the impairment charge.

Cost of Sales and Gross Margin

Cost of sales of $4,208.1 increased $379.0 due to higher costs attributable to sales volumes of $256, higher energy and natural gas costs of $202, and higher other costs of $21, partially offset by favorable currency impacts of $100.

Gross margin of 29.7% decreased 140 bp, primarily due to higher energy and natural gas cost pass-through to customers and higher other costs.

Selling and Administrative Expense

Selling and administrative expense of $528.1 increased $18.0, primarily due to higher costs in support of transition services agreements with Versum and Evonik, for which the reimbursement is reflected in "Other income (expense), net." Selling and administrative expense, as a percent of sales, decreased from 9.2% to 8.8%.

Research and Development

Research and development expense of $44.5 decreased $9.3. Research and development expense, as a percent of sales, decreased from 1.0% to .7%.

Business Separation Costs

In connection with the disposition of the two divisions comprising the former Materials Technologies segment, we incurred separation costs of $30.2 ($26.5 after-tax, or $.12 per share) and $28.9 ($27.4 after-tax, or $.12 per share) for the nine months ended 30 June 2017 and 2016, respectively. These costs are reflected on the consolidated income statements as “Business separation costs” and include legal, advisory, and pension related costs. Refer to Note 3, Discontinued Operations, to the consolidated financial statements for additional information regarding the dispositions.

Cost Reduction and Asset Actions

During the nine months ended 30 June 2017, we recognized a net expense of $103.0 ($78.4 attributable to Air Products, after-tax, or $.36 per share), of which $106.4 related to actions taken during fiscal year 2017, partially offset by the favorable settlement of the remaining $3.4 accrued balance associated with business restructuring actions taken in 2015. Asset actions of $78.9 included $33.2 recorded during the third quarter of 2017, primarily resulting from the planned sale of a non-industrial gas hardgoods business in the Industrial Gases – Americas segment and the closure of a facility in the Corporate and other segment that manufactured LNG heat exchangers. Additionally, $45.7 related to the first quarter write-down of an air separation unit in the Industrial Gases – EMEA segment that was constructed mainly to provide oxygen to one of the Energy-from-Waste plants. Severance and other benefits totaled $27.5.

During the nine months ended 30 June 2016, we recognized an expense of $23.9 ($17.5 after-tax, or $.08 per share) for severance and other benefits related to cost reduction actions. The fiscal year 2016 expenses primarily related to the Industrial Gases – Americas and the Industrial Gases – EMEA segments.

Refer to Note 5, Cost Reduction and Asset Actions, to the consolidated financial statements for additional details.

Pension Settlement Losses

Certain of our pension plans provide for a lump sum benefit payment option at the time of retirement, or for corporate officers, six months after their retirement date. A participant's vested benefit is considered settled upon cash payment of the lump sum. We recognize pension settlement losses when cash payments exceed the sum of the service and interest cost components of net periodic benefit cost of the plan for the fiscal year. During the nine months ended 30 June 2017 and 2016, we recognized pension settlement losses of $9.6 ($6.0 after-tax, or $.03 per share) and $3.0 ($1.9 after-tax, or $.01 per share), respectively, to accelerate recognition of a portion of actuarial losses deferred in accumulated other comprehensive loss, primarily associated with the U.S. Supplementary Pension Plan. We expect that additional settlement losses will be recognized during the fourth quarter of fiscal year 2017.

Goodwill And Intangible Asset Impairment Charge

During the third quarter of fiscal year 2017, we determined that the goodwill and indefinite-lived intangible assets (primarily acquired trade names) associated with our Latin America reporting unit of our Industrial Gases – Americas segment were

impaired. We recorded a noncash impairment charge of $162.1 ($154.1 attributable to Air Products, after-tax, or $.70 per share), which was driven by lower economic growth and profitability in the region. Refer to Note 8, Goodwill, and Note 9, Intangible Assets, to the consolidated financial statements for additional details.

Other Income (Expense), Net

Other income (expense), net of $73.0 increased $43.7, primarily due to income from transition services agreements with Versum and Evonik and a favorable foreign exchange impact.

Interest Expense

	Nine Months Ended 30 June	
	2017	2016
Interest incurred	$105.1	$111.0
Less: capitalized interest	15.3	28.0
Interest expense	$89.8	$83.0

Interest incurred decreased $5.9 as the impact from a lower average debt balance was partially offset by the impact from a higher average interest rate on the debt portfolio. The change in capitalized interest was driven by a decrease in the carrying value of projects under construction, primarily as a result of our decision to exit from the Energy-from-Waste business in the second quarter of fiscal year 2016.

Other Non-Operating Income (Expense), net

Other non-operating income (expense), net of $19.5 primarily resulted from interest income on cash and time deposits, which are comprised primarily of proceeds from the sale of PMD that was completed during the second quarter of fiscal year 2017.

Effective Tax Rate

The effective tax rate equals the income tax provision divided by income from continuing operations before taxes. The effective tax rate was 28.0% and 28.9% for the nine months ended 30 June 2017 and 2016, respectively. The current year rate included an impact of 500 bp due to both a goodwill impairment charge in our Latin America reporting unit and an impairment of an equity method investment for which no tax benefits were available. This was offset by a decrease of 100 bp from excess tax benefits on share-based compensation, a 70 bp decrease due to tax benefits related to changes in tax positions on business separation activities, as well as the impact of foreign tax law changes. The 2016 rate included an impact of 400 bp due to tax costs of a dividend from a foreign subsidiary and other business separation costs for which a tax benefit was estimated to not be available. On a non-GAAP basis, the effective tax rate was 23.0% and 24.4% for the nine months ended 30 June 2017 and 2016, respectively, primarily due to the benefits on share-based compensation and foreign tax law changes.

Discontinued Operations

The results of our former Materials Technologies segment and the former Energy-from-Waste segment have been presented as discontinued operations. Refer to Note 3, Discontinued Operations, to the consolidated financial statements for additional information, including detail of the major line items that comprise income from discontinued operations, net of tax, on the consolidated income statements for the nine months ended 30 June 2017 and 2016.

Materials Technologies

On 16 September 2015, we announced plans to separate our Materials Technologies segment, which contained EMD and PMD. On 1 October 2016, we completed the separation of EMD through the spin-off of Versum. On 3 January 2017, we completed the sale of PMD to Evonik Industries AG for $3.8 billion in cash subject to customary post-closing adjustments, including working capital. A gain of $2,870 ($1,833 after-tax, or $8.34 per share) was recognized on the sale in the second quarter of fiscal year 2017. As a result of the dispositions, both EMD and PMD are reflected in our consolidated financial statements as discontinued operations for all periods presented.

Energy-from-Waste

During the second quarter of fiscal year 2016, the Board of Directors approved the Company's exit of its Energy-from-Waste (EfW) business. As a result, efforts to start up and operate its two EfW projects located in Tees Valley, United Kingdom, had been discontinued and a loss on disposal of $945.7 ($846.6 after-tax) was recorded to write down plant assets to their estimated net realizable value and record a liability for plant disposition and other costs.

During the first quarter of fiscal year 2017, we determined that it is unlikely for a buyer to assume the remaining assets and contract obligations, including land lease obligations. As a result, we recorded an additional loss of $59.3 ($47.1 after-tax) in results of discontinued operations, of which $53.0 was recorded primarily for land lease obligations and $6.3 was recorded to update our estimate of the net realizable value of the plant assets as of 31 December 2016. There have been no significant changes to our estimates during the third quarter of fiscal year 2017. We may incur additional exit costs in future periods related to other outstanding commitments.

Segment Analysis

Industrial Gases – Americas

	Nine Months Ended 30 June							
	2017		2016		$ Change	% Change		
Sales	$2,684.1		$2,466.7		$ 217.4	9	%	
Operating income	684.5		669.1		15.4	2	%	
Operating margin	25.5	%	27.1	%		(160 bp)		
Equity affiliates' income	41.8		38.2		3.6	9	%	
Adjusted EBITDA	1,071.1		1,038.2		32.9	3	%	
Adjusted EBITDA margin	39.9	%	42.1	%		(220 bp)		

Industrial Gases – Americas Sales

	% Change from Prior Year	
Underlying business		
Volume	1	%
Price	—	%
Currency	—	%
Energy and natural gas cost pass-through	8	%
Total Industrial Gases – Americas Sales Change	9	%

Underlying sales were up 1%, primarily from a new hydrogen plant in Canada. Higher energy and natural gas cost pass-through to customers increased sales by 8%.

Industrial Gases – Americas Operating Income and Margin

Operating income of $684.5 increased 2%, or $15.4, primarily due to lower operating costs of $24, partially offset by lower volumes of $10. Operating costs were lower due to benefits from productivity improvements. Operating margin decreased 160 bp from the prior year due to higher energy and natural gas pass-through to customers and lower volume mix, partially offset by favorable cost performance.

Industrial Gases – Americas Equity Affiliates' Income

Equity affiliates' income of $41.8 increased $3.6, primarily due to lower maintenance expense.

Industrial Gases – EMEA

	Nine Months Ended 30 June			
	2017	2016	$ Change	% Change
Sales	$1,265.6	$1,290.1	$ (24.5)	(2)%
Operating income	268.6	286.3	(17.7)	(6)%
Operating margin	21.2%	22.2%		(100 bp)
Equity affiliates' income	33.5	26.1	7.4	28%
Adjusted EBITDA	431.0	452.5	(21.5)	(5)%
Adjusted EBITDA margin	34.1%	35.1%		(100 bp)

Industrial Gases – EMEA Sales

	% Change from Prior Year
Underlying business	
Volume	1%
Price	—%
Currency	(5)%
Energy and natural gas cost pass-through	2%
Total Industrial Gases – EMEA Sales Change	(2)%

Underlying sales were up 1% from higher volumes as pricing was flat. Volumes increased primarily due to a new plant onstream in India. Unfavorable currency effects, primarily from the British Pound Sterling, reduced sales by 5%. Higher energy and natural gas cost pass-through to customers increased sales by 2%.

Industrial Gases – EMEA Operating Income and Margin

Operating income of $268.6 decreased 6%, or $17.7, primarily due to unfavorable currency impacts of $19 and lower price net of power costs of $14, partially offset by lower operating costs of $11 and higher volumes of $4. Operating margin decreased 100 bp from the prior year, as lower price net of power costs, higher energy and natural gas pass-through to customers, and unfavorable currency impacts were partially offset by favorable cost performance.

Industrial Gases – EMEA Equity Affiliates' Income

Equity affiliates' income of $33.5 increased $7.4, primarily due to higher volumes.

Industrial Gases – Asia

	Nine Months Ended 30 June			
	2017	2016	$ Change	% Change
Sales	$1,412.5	$1,271.5	$ 141.0	11%
Operating income	379.2	341.0	38.2	11%
Operating margin	26.8%	26.8%		— bp
Equity affiliates' income	38.9	43.9	(5.0)	(11)%
Adjusted EBITDA	563.7	535.1	28.6	5%
Adjusted EBITDA margin	39.9%	42.1%		(220 bp)

Industrial Gases – Asia Sales

	% Change from Prior Year
Underlying business	
Volume	13 %
Price	— %
Currency	(2)%
Energy and natural gas cost pass-through	—
Total Industrial Gases – Asia Sales Change	11 %

Underlying sales were up 13% from higher volumes as pricing was flat. Volumes increased primarily due to short-term sale of equipment activity, new plant onstreams, including the commencement of a utility pass-through, and base business growth driven by higher merchant volumes across Asia. Unfavorable currency impacts reduced sales by 2%, primarily from the Chinese Renminbi, partially offset by strengthening of the South Korean Won and Taiwan Dollar.

Industrial Gases – Asia Operating Income and Margin

Operating income of $379.2 increased 11%, or $38.2 due to higher volumes of $49, partially offset by higher operating costs of $6 and an unfavorable currency impact of $5. Operating margin was flat versus the prior year, as favorable volume mix was offset by unfavorable cost performance and higher utility pass-through on new plants.

Industrial Gases – Asia Equity Affiliates' Income

Equity affiliates' income of $38.9 decreased $5.0, primarily due to favorable contract and insurance settlements in the prior year.

Industrial Gases – Global

	Nine Months Ended 30 June			
	2017	2016	$ Change	% Change
Sales	$551.8	$341.7	$ 210.1	61 %
Operating income (loss)	58.9	(44.0)	102.9	234 %
Adjusted EBITDA	65.5	(38.6)	104.1	270 %

Industrial Gases – Global Sales and Operating Income (Loss)

Sales of $551.8 increased $210.1, or 61%. The increase in sales was driven by a sale of equipment contract for multiple air separation units that will serve Saudi Aramco's Jazan oil refinery and power plant in Saudi Arabia, which more than offset the decrease in small equipment and other air separation unit sales.

Operating income of $58.9 increased $102.9 from an operating loss in the prior year, primarily from income on the Jazan project and productivity improvements.

Corporate and other

	Nine Months Ended 30 June			
	2017	2016	$ Change	% Change
Sales	$70.5	$188.2	$(117.7)	(63)%
Operating income (loss)	(114.4)	(57.9)	(56.5)	(98)%
Adjusted EBITDA	(104.9)	(42.9)	(62.0)	(145)%

Corporate and other Sales and Operating Loss

Sales of $70.5 decreased $117.7, primarily due to lower LNG project activity. We expect delays in new LNG project orders due to continued oversupply of LNG in the market. Operating loss of $114.4 increased $56.5 due to lower LNG activity, partially offset by productivity improvements and income from transition service agreements with Versum and Evonik.

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RECONCILIATION OF NON-GAAP FINANCIAL MEASURES

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

The Company has presented certain financial measures on a non-GAAP (“adjusted”) basis and has provided a reconciliation to the most directly comparable financial measure calculated in accordance with GAAP. These financial measures are not meant to be considered in isolation or as a substitute for the most directly comparable financial measure calculated in accordance with GAAP. The Company believes these non-GAAP measures provide investors, potential investors, securities analysts, and others with useful information to evaluate the performance of the business because such measures, when viewed together with our 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, our non-GAAP measures are determined by adjusting the most directly comparable GAAP financial measure to exclude certain disclosed items (“non-GAAP adjustments”) that we believe are not representative of the underlying business performance. For example, Air Products has executed its strategic plan to restructure the Company and, as part of this plan, is now focusing on the Company’s core Industrial Gases businesses, which will continue to result in significant cost reduction and asset actions that we believe are important for investors to understand separately from the performance of the underlying business. The tax impact of our non-GAAP adjustments reflects the expected current and deferred income tax expense impact of the transactions and is impacted primarily by the statutory tax rate of the various relevant jurisdictions and the taxability of the adjustments in those jurisdictions. In evaluating these financial measures, the reader should be aware that we may incur expenses similar to those eliminated in this presentation in the future. Investors should also consider the limitations associated with these non-GAAP measures, including the potential lack of comparability of these measures from one company to another.

Presented below are reconciliations of the reported GAAP results to the non-GAAP measures:
CONSOLIDATED RESULTS

2017 vs. 2016	Continuing Operations Three Months Ended 30 June				
	Operating Income	Operating Margin [A]	Equity Affiliates' Income (Loss)	Income Tax Provision[B]	Net Income	Diluted EPS
2017 GAAP	$252.6	11.9 %	$(36.9)	$ 89.3	$104.2	$.47
2016 GAAP	394.6	20.6 %	42.1	145.9	250.3	1.15
Change GAAP	$(142.0)	(870) bp	$(79.0)	$ (56.6)	$(146.1)	$(.68)
% Change GAAP	(36)%		(188)%	(39)%	(58)%	(59)%
2017 GAAP	$252.6	11.9 %	$(36.9)	$ 89.3	$104.2	$.47
Tax benefit associated with business separation	—	— %	—	8.2	(8.2)	(.04)
Cost reduction and asset actions[C]	42.7	2.0 %	—	12.2	30.0	.14
Pension settlement loss	5.5	.3 %	—	2.1	3.4	.02
Goodwill and intangible asset impairment charge[D]	162.1	7.6 %	—	4.6	154.1	.70
Equity method investment impairment charge	—	— %	79.5	—	79.5	.36
2017 Non-GAAP Measure	$462.9	21.8 %	$42.6	$ 116.4	$363.0	$1.65
2016 GAAP	$394.6	20.6 %	$42.1	$ 145.9	$250.3	$1.15
Business separation costs	9.5	.5 %	—	3.0	6.5	.03
Tax costs associated with business separation	—	— %	—	(47.7)	47.7	.22
Cost reduction and asset actions	13.2	.7 %	—	4.5	8.7	.04
Pension settlement loss	1.0	— %	—	.4	.6	—
2016 Non-GAAP Measure	$418.3	21.8 %	$42.1	$ 106.1	$313.8	$1.44
Change Non-GAAP Measure	$44.6	—	$.5	$ 10.3	$49.2	$.21
% Change Non-GAAP Measure	11 %		1 %	10 %	16 %	15 %

	Continuing Operations Nine Months Ended 30 June				
2017 vs. 2016	Operating Income	Operating Margin[A]	Equity Affiliates' Income	Income Tax Provision[B]	Net Income	Diluted EPS
2017 GAAP	$971.9	16.2 %	$35.3	$ 262.2	$660.2	$3.00
2016 GAAP	1,138.7	20.5 %	107.7	335.8	810.1	3.72
Change GAAP	$(166.8)	(430) bp	$(72.4)	$ (73.6)	$(149.9)	$(.72)
% Change GAAP	(15)%		(67)%	(22)%	(19)%	(19)%
2017 GAAP	$971.9	16.2 %	$35.3	$ 262.2	$660.2	$3.00
Business separation costs	30.2	.5 %	—	3.7	26.5	.12
Tax benefit associated with business separation	—	— %	—	5.5	(5.5)	(.02)
Cost reduction and asset actions[C]	103.0	1.7 %	—	24.1	78.4	.36
Pension settlement loss	9.6	.2 %	—	3.6	6.0	.03
Goodwill and intangible asset impairment charge[D]	162.1	2.7 %	—	4.6	154.1	.70
Equity method investment impairment charge	—	— %	79.5	—	79.5	.36
2017 Non-GAAP Measure	$1,276.8	21.3 %	$114.8	$ 303.7	$999.2	$4.55
2016 GAAP	$1,138.7	20.5 %	$107.7	$ 335.8	$810.1	$3.72
Business separation costs	28.9	.5 %	—	1.5	27.4	.12
Tax costs associated with business separation	—	— %	—	(47.7)	47.7	.22
Cost reduction and asset actions	23.9	.4 %	—	6.4	17.5	.08
Pension settlement loss	3.0	.1 %	—	1.1	1.9	.01
2016 Non-GAAP Measure	$1,194.5	21.5 %	$107.7	$ 297.1	$904.6	$4.15
Change Non-GAAP Measure	$82.3	(20) bp	$7.1	$ 6.6	$94.6	$.40
% Change Non-GAAP Measure	7 %		7 %	2 %	10 %	10 %

[A] Operating margin is calculated by dividing operating income by sales.

[B] The tax impact of our non-GAAP adjustments reflects the expected current and deferred income tax expense impact of the transactions and is impacted primarily by the statutory tax rate of the various relevant jurisdictions and the taxability of the adjustments in those jurisdictions.

[C] Noncontrolling interests impact of $.5 for the three and nine months ended 30 June 2017.

[D] Noncontrolling interests impact of $3.4 for the three and nine months ended 30 June 2017.

ADJUSTED EBITDA

We define Adjusted EBITDA as income from continuing operations (including noncontrolling interests) excluding certain disclosed items, which the Company does 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 provides a useful metric for management to assess operating performance.

Below is a reconciliation of Income from Continuing Operations on a GAAP basis to Adjusted EBITDA:

	Three Months Ended 30 June		Nine Months Ended 30 June	
	2017	2016	2017	2016
Income from Continuing Operations[(A)]	$ 106.4	$ 255.7	$ 674.7	$ 827.6
Add: Interest expense	29.8	35.1	89.8	83.0
Less: Other non-operating income (expense), net	9.8	—	19.5	—
Add: Income tax provision	89.3	145.9	262.2	335.8
Add: Depreciation and amortization	216.9	213.5	634.8	642.1
Add: Business separation costs	—	9.5	30.2	28.9
Add: Cost reduction and asset actions	42.7	13.2	103.0	23.9
Add: Pension settlement loss	5.5	1.0	9.6	3.0
Add: Goodwill and intangible asset impairment charge	162.1	—	162.1	—
Add: Equity method investment impairment charge	79.5	—	79.5	—
Adjusted EBITDA	$ 722.4	$ 673.9	$ 2,026.4	$ 1,944.3
Change GAAP				
Income from continuing operations change	$ (149.3)		$ (152.9)	
Income from continuing operations % change	(58)%		(18)%	
Change Non-GAAP				
Adjusted EBITDA change	$ 48.5		$ 82.1	
Adjusted EBITDA % change	7 %		4 %	

[(A)] Includes net income attributable to noncontrolling interests.

Below is a reconciliation of segment operating income to Adjusted EBITDA:

	Industrial Gases–Americas	Industrial Gases–EMEA	Industrial Gases–Asia	Industrial Gases–Global	Corporate and other	Segment Total
GAAP MEASURE						
Three Months Ended 30 June 2017						
Operating income (loss)	$236.2	$94.1	$149.1	$27.9	$(44.4)	$462.9
Operating margin	25.4 %	20.8 %	27.7 %			21.8 %
Three Months Ended 30 June 2016						
Operating income (loss)	$234.0	$104.0	$118.7	$(13.9)	$(24.5)	$418.3
Operating margin	28.1 %	24.3 %	26.4 %			21.8 %
Operating income (loss) change	$2.2	$(9.9)	$30.4	$41.8	$(19.9)	$44.6
Operating income (loss) % change	1 %	(10)%	26 %	301 %	(81)%	11 %
Operating margin change	(270) bp	(350) bp	130 bp			—
NON-GAAP MEASURE						
Three Months Ended 30 June 2017						
Operating income (loss)	$236.2	$94.1	$149.1	$27.9	$(44.4)	$462.9
Add: Depreciation and amortization	117.0	45.1	49.6	2.3	2.9	216.9
Add: Equity affiliates' income	14.1	15.7	12.5	.3	—	42.6
Adjusted EBITDA	$367.3	$154.9	$211.2	$30.5	$(41.5)	$722.4
Adjusted EBITDA margin	39.5 %	34.3 %	39.2 %			34.0 %
Three Months Ended 30 June 2016						
Operating income (loss)	$234.0	$104.0	$118.7	$(13.9)	$(24.5)	$418.3
Add: Depreciation and amortization	112.1	45.1	49.5	2.0	4.8	213.5
Add: Equity affiliates' income	16.0	11.3	14.8	—	—	42.1
Adjusted EBITDA	$362.1	$160.4	$183.0	$(11.9)	$(19.7)	$673.9
Adjusted EBITDA margin	43.5 %	37.4 %	40.8 %			35.2 %
Adjusted EBITDA change	$5.2	$(5.5)	$28.2	$42.4	$(21.8)	$48.5
Adjusted EBITDA % change	1 %	(3)%	15 %	356 %	(111)%	7 %
Adjusted EBITDA margin change	(400) bp	(310) bp	(160) bp			(120) bp

	Industrial Gases–Americas	Industrial Gases–EMEA	Industrial Gases–Asia	Industrial Gases–Global	Corporate and other	Segment Total
GAAP MEASURE						
Nine Months Ended 30 June 2017						
Operating income (loss)	$684.5	$268.6	$379.2	$58.9	$(114.4)	$1,276.8
Operating margin	25.5 %	21.2 %	26.8 %			21.3 %
Nine Months Ended 30 June 2016						
Operating income (loss)	$669.1	$286.3	$341.0	$(44.0)	$(57.9)	$1,194.5
Operating margin	27.1 %	22.2 %	26.8 %			21.5 %
Operating income (loss) change	$15.4	$(17.7)	$38.2	$102.9	$(56.5)	$82.3
Operating income (loss) % change	2 %	(6)%	11 %	234 %	(98)%	7 %
Operating margin change	(160) bp	(100) bp	—			(20) bp
NON-GAAP MEASURE						
Nine Months Ended 30 June 2017						
Operating income (loss)	$684.5	$268.6	$379.2	$58.9	$(114.4)	$1,276.8
Add: Depreciation and amortization	344.8	128.9	145.6	6.0	9.5	634.8
Add: Equity affiliates' income	41.8	33.5	38.9	.6	—	114.8
Adjusted EBITDA	$1,071.1	$431.0	$563.7	$65.5	$(104.9)	$2,026.4
Adjusted EBITDA margin	39.9 %	34.1 %	39.9 %			33.9 %
Nine Months Ended 30 June 2016						
Operating income (loss)	$669.1	$286.3	$341.0	$(44.0)	$(57.9)	$1,194.5
Add: Depreciation and amortization	330.9	140.1	150.2	5.9	15.0	642.1
Add: Equity affiliates' income (loss)	38.2	26.1	43.9	(.5)	—	107.7
Adjusted EBITDA	$1,038.2	$452.5	$535.1	$(38.6)	$(42.9)	$1,944.3
Adjusted EBITDA margin	42.1 %	35.1 %	42.1 %			35.0 %
Adjusted EBITDA change	$32.9	$(21.5)	$28.6	$104.1	$(62.0)	$82.1
Adjusted EBITDA % change	3 %	(5)%	5 %	270 %	(145)%	4 %
Adjusted EBITDA margin change	(220) bp	(100) bp	(220) bp			(110) bp

Below is a reconciliation of segment total operating income to consolidated operating income:

	Three Months Ended 30 June		Nine Months Ended 30 June	
Operating Income	2017	2016	2017	2016
Segment total	$462.9	$418.3	$1,276.8	$1,194.5
Business separation costs	—	(9.5)	(30.2)	(28.9)
Cost reduction and asset actions	(42.7)	(13.2)	(103.0)	(23.9)
Pension settlement loss	(5.5)	(1.0)	(9.6)	(3.0)
Goodwill and intangible asset impairment charge	(162.1)	—	(162.1)	—
Consolidated Total	$252.6	$394.6	$971.9	$1,138.7

Below is a reconciliation of segment total equity affiliates' income to consolidated equity affiliates' income (loss):

	Three Months Ended 30 June		Nine Months Ended 30 June	
Equity Affiliates' Income (Loss)	2017	2016	2017	2016
Segment total	$42.6	$42.1	$114.8	$107.7
Equity method investment impairment charge	(79.5)	—	(79.5)	—
Consolidated Total	$(36.9)	$42.1	$35.3	$107.7

INCOME TAXES

The tax impact of our non-GAAP adjustments reflects the expected current and deferred income tax expense impact of the transactions and is impacted primarily by the statutory tax rate of the various relevant jurisdictions and the taxability of the adjustments in those jurisdictions.

	Effective Tax Rate Three Months Ended 30 June		Nine Months Ended 30 June	
	2017	2016	2017	2016
Income Tax Provision—GAAP	$89.3	$145.9	$262.2	$335.8
Income From Continuing Operations Before Taxes—GAAP	$195.7	$401.6	$936.9	$1,163.4
Effective Tax Rate—GAAP	45.6 %	36.3 %	28.0 %	28.9 %
Income Tax Provision—GAAP	$89.3	$145.9	$262.2	$335.8
Business separation costs	—	3.0	3.7	1.5
Tax benefit (costs) associated with business separation	8.2	(47.7)	5.5	(47.7)
Cost reduction and asset actions	12.2	4.5	24.1	6.4
Pension settlement loss	2.1	.4	3.6	1.1
Goodwill and intangible asset impairment charge	4.6	—	4.6	—
Equity method investment impairment charge	—	—	—	—
Income Tax Provision—Non-GAAP Measure	$116.4	$106.1	$303.7	$297.1
Income From Continuing Operations Before Taxes—GAAP	$195.7	$401.6	$936.9	$1,163.4
Business separation costs	—	9.5	30.2	28.9
Cost reduction and asset actions	42.7	13.2	103.0	23.9
Pension settlement loss	5.5	1.0	9.6	3.0
Goodwill and intangible asset impairment charge	162.1	—	162.1	—
Equity method investment impairment charge	79.5	—	79.5	—
Income From Continuing Operations Before Taxes—Non-GAAP Measure	$485.5	$425.3	$1,321.3	$1,219.2
Effective Tax Rate—Non-GAAP Measure	24.0 %	24.9 %	23.0 %	24.4 %

PENSION BENEFITS

For the nine months ended 30 June 2017 and 2016, we recognized net periodic benefit cost of $56.4 and $44.0, respectively, in continuing operations. The increase in pension expense in fiscal year 2017 is primarily related to recognition of settlement, curtailment, and special termination benefits. The amount of net periodic benefit cost capitalized in fiscal year 2017 and 2016 was not material.

Certain of our pension plans provide for a lump sum benefit payment option at the time of retirement, or for corporate officers, six months after their retirement date. A participant's vested benefit is considered settled upon cash payment of the lump sum. We recognize pension settlement losses when cash payments exceed the sum of the service and interest cost components of net periodic benefit cost of the plan for the fiscal year. For the nine months ended 30 June 2017 and 2016, we recognized $9.6 and $3.0 of settlement losses, respectively, to accelerate recognition of a portion of actuarial losses deferred in accumulated other comprehensive loss, primarily associated with the U.S. Supplementary Pension Plan. We expect that additional settlement losses will be recognized during the fourth quarter of fiscal year 2017.

In connection with the disposition of the two divisions comprising the former Materials Technologies segment, we incurred settlement, curtailment, and special termination benefits totaling $6.0 for the nine months ended 30 June 2017, $2.5 of which was reflected on the consolidated income statements as "Business separation costs" during the first quarter. The remaining costs of $3.5 were recorded in the results of discontinued operations during the second quarter.

Upon completion of the spin-off of EMD as Versum on 1 October 2016, the Company transferred defined benefit pension assets and obligations to Versum, resulting in a net decrease in the underfunded status of the Company's sponsored pension plans of $24. As a result of the transfer of unrecognized losses to Versum, accumulated other comprehensive loss, net of tax, decreased by approximately $5. In addition, upon completion of the sale of PMD to Evonik on 3 January 2017, the Company transferred defined benefit pension obligations to Evonik, resulting in a net decrease in the underfunded status of the Company's sponsored pension plans of approximately $7.

Management considers various factors when making pension funding decisions, including tax, cash flow, and regulatory implications. For the nine months ended 30 June 2017 and 2016, our cash contributions to funded pension plans and benefit payments under unfunded pension plans were $57.0 and $68.6, respectively. Total contributions for fiscal 2017 are expected to be approximately $65 to $85. During fiscal 2016, total contributions were $79.3.

Refer to Note 12, Retirement Benefits, to the consolidated financial statements for details on pension cost and cash contributions.

LIQUIDITY AND CAPITAL RESOURCES

We have consistent access to commercial paper markets, and our cash balance and cash flows from operations and financing activities are expected to meet liquidity needs for the foreseeable future.

As of 30 June 2017, we had $962.9 of foreign cash and cash items compared to total cash and cash items of $2,332.6. If we needed foreign cash for operations in the U.S. or we otherwise elect to repatriate the funds, we may be required to accrue and pay U.S. taxes on those amounts. 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 outside the U.S. Current financing alternatives do not require the additional repatriation of foreign funds.

Operating Activities

For the first nine months of 2017, cash provided by operating activities was $1,613.4. Income from continuing operations of $660.2 included the goodwill and intangible asset impairment charge of $162.1, the equity method investment impairment charge of $79.5, and the write-down of long lived assets associated with cost reduction actions of $59.1. Refer to Note 5, Cost Reduction and Asset Actions; Note 7, Equity Affiliates; Note 8, Goodwill; and Note 9, Intangible Assets, to the consolidated financial statements for additional information on these charges. Other specifically identified adjustments to income from continuing operations included depreciation and amortization, deferred income taxes, undistributed earnings of unconsolidated affiliates, gain on sale of assets and investments, share-based compensation, and noncurrent capital lease receivables. Other adjustments of $110.7 included the remeasurement of intercompany transactions as the related hedging instruments that eliminate the earnings impact are

included in other receivables and payables and accrued liabilities. The working capital accounts were a use of cash of $69.4, primarily driven by payables and accrued liabilities and other working capital, partially offset by other receivables. The use of cash in payables and accrued liabilities of $99.9 was primarily driven by a decrease in customer advances of $51.7 related to our joint venture in Jazan, Saudi Arabia, and a $53.7 decrease in accrued incentive compensation, primarily due to payments on the 2016 plan. Other working capital was a use of $50.0, primarily driven by payments for accrued income taxes. Other receivables was a source of $80.0, primarily due to the maturities of forward exchange contracts that hedged foreign currency exposures.

For the first nine months of 2016, cash provided by operating activities was $1,522.2, which included income from continuing operations of $810.1. Other adjustments were a source of cash of $107.3, which was primarily driven by the remeasurement of intercompany transactions as the related hedging instruments that eliminate the earnings impact are included in other receivables and payables and accrued liabilities. The collection of lease payments was a source of cash of $61.5. The change in working capital was a use of cash of $162.7, which was primarily driven by an increase in trade receivables of $173.8. The increase in trade receivables included amounts billed to our joint venture in Jazan, Saudi Arabia.

We estimate that cash paid for taxes, net of refunds, on a continuing operations basis were $357.0 and $277.2 for the nine months ended 30 June 2017 and 2016, respectively.

Investing Activities

For the first nine months of 2017, cash used for investing activities was $1,810.8. Capital expenditures for plant and equipment were $806.8. Purchases of investments of $2,488.6 include time deposits with original maturities greater than three months and less than one year. Proceeds from investments of $1,473.5 resulted from maturities of short-term instruments with original terms greater than three months but less than one year.

For the first nine months of 2016, cash used for investing activities was $658.5, primarily driven by capital expenditures for plant and equipment of $700.9. Proceeds from the sale of assets and investments of $44.1 were primarily driven by the receipt of $30.0 for our rights to a corporate aircraft that was under construction.

Capital expenditures are detailed in the table below:

	Nine Months Ended 30 June	
	2017	2016
Additions to plant and equipment	$806.8	$700.9
Investment in and advances to unconsolidated affiliates	8.1	—
Capital expenditures on a GAAP basis	$814.9	$700.9
Capital lease expenditures[(A)]	6.8	24.6
Capital expenditures on a Non-GAAP basis	$821.7	$725.5

(A) We utilize a non-GAAP measure in the computation of capital expenditures and include spending associated with facilities accounted for as capital leases. Certain contracts associated with facilities that are built to provide product to a specific customer are required to be accounted for as leases, and such spending is reflected as a use of cash within cash provided by operating activities if the arrangement qualifies as a capital lease. The presentation of this non-GAAP measure is intended to enhance the usefulness of information by providing a measure that our management uses internally to evaluate and manage our expenditures.

We expect capital expenditures of approximately $1,000 in fiscal year 2017.

On 19 April 2015, a joint venture between Air Products and ACWA Holding entered into a 20-year oxygen and nitrogen supply agreement to supply Saudi Aramco’s oil refinery and power plant being built in Jazan, Saudi Arabia. Air Products owns 25% of the joint venture and expects to invest approximately $100. Air Products has also entered into a sale of equipment contract with the joint venture to engineer, procure, and construct the industrial gas facilities that will supply the gases to Saudi Aramco.

Sales backlog represents our estimate of revenue to be recognized in the future on sale of equipment orders and related process technologies that are under firm contracts. The sales backlog for the Company at 30 June 2017 was $618, compared to $1,057 at 30 September 2016.

Financing Activities

For the first nine months of 2017, cash used for financing activities was $1,854.4. This consisted primarily of repayments of commercial paper and short-term borrowings of $799.2, payments on long-term debt of $483.5, and dividend payments to shareholders of $580.9. Payments on long-term debt primarily consisted of the repayment of a 4.625% Eurobond of €300 million ($317.2) that matured on 15 March 2017 and $138.0 for the repayment of industrial revenue bonds.

For the first nine months of 2016, cash used for financing activities was $655.9 and included dividend payments to shareholders of $534.9 and $167.7 net use of cash from our borrowings (short- and long-term proceeds, net of repayments), partially offset by proceeds from stock option exercises of $76.2. Borrowings included the issuance of a .375% Eurobond of €350 million ($386.9).

Discontinued Operations

For the first nine months of 2017, cash flows of discontinued operations primarily included impacts associated with the spin-off of EMD as Versum on 1 October 2016 and the sale of PMD to Evonik on 3 January 2017. Cash used for operating activities of $768.0 was primarily driven by taxes paid on the gain on sale of PMD. Cash provided by investing activities of $3,750.6 primarily resulted from the proceeds on the sale of PMD. Cash provided by financing activities resulted from a $69.5 receipt of cash from Versum related to finalization of the spin-off. Refer to Note 3, Discontinued Operations, to the consolidated financial statements for additional information.

For the first nine months of 2016, cash provided by discontinued operations of $96.9 was primarily driven by the results of EMD, PMD, and the Energy-from-Waste business, which was partially offset by capital expenditures for plant and equipment.

Financing and Capital Structure

Capital needs were satisfied primarily with cash from operations. Total debt at 30 June 2017 and 30 September 2016, expressed as a percentage of the sum of total debt and total capitalization (total debt plus total equity), was 29.2% and 41.9%, respectively. Total debt decreased from $5,210.9 at 30 September 2016 to $3,926.0 at 30 June 2017 as a result of the repayment of commercial paper, the 4.625% Eurobond, and the industrial revenue bonds.

On 31 March 2017, we entered into a five-year $2,500.0 revolving credit agreement with a syndicate of banks (the “2017 Credit Agreement”), under which senior unsecured debt is available to both the Company and certain of its subsidiaries. The 2017 Credit Agreement provides a source of liquidity for the Company and supports its commercial paper program. The Company’s only financial covenant is a maximum ratio of total debt to total capitalization (total debt plus total equity) no greater than 70%. No borrowings were outstanding under the 2017 Credit Agreement as of 30 June 2017.

The 2017 Credit Agreement terminates and replaces our previous $2,690.0 revolving credit agreement (the “2013 Credit Agreement”), which was to mature 30 April 2018. No borrowings were outstanding under the previous agreement at the time of its termination, and no early termination penalties were incurred.

Commitments totaling $22.9 are maintained by our foreign subsidiaries, all of which was borrowed and outstanding at 30 June 2017.

As of 30 June 2017, we are in compliance with all of the financial and other covenants under our debt agreements.

On 15 September 2011, the Board of Directors authorized the repurchase of up to $1,000 of our outstanding common stock. During the first nine months of fiscal year 2017, we did not purchase any of our outstanding shares. At 30 June 2017, $485.3 in share repurchase authorization remained.

Dividends

Dividends are declared by the Board of Directors and are usually paid during the sixth week after the close of the fiscal quarter. During 2017, the Board of Directors increased the quarterly dividend from $.86 per share to $.95 per share. On 20 July 2017, the Board of Directors declared the fourth quarter dividend of $.95, which is payable on 13 November 2017 to shareholders of record at the close of business on 10 October 2017.

CONTRACTUAL OBLIGATIONS

We are obligated to make future payments under various contracts, such as debt agreements, lease agreements, unconditional purchase obligations, and other long-term obligations. There have been no material changes to contractual obligations since 30 September 2016.

COMMITMENTS AND CONTINGENCIES

There have been no material changes to commitments and contingencies since 30 September 2016. For current updates on Litigation and Environmental matters, refer to Note 13, Commitments and Contingencies, in this quarterly filing.

OFF-BALANCE SHEET ARRANGEMENTS

There have been no material changes to off-balance sheet arrangements since 30 September 2016. We are not a primary beneficiary in any material variable interest entity. Our off-balance sheet arrangements are not reasonably likely to have a material impact on financial condition, changes in financial condition, results of operations, or liquidity.

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RELATED PARTY TRANSACTIONS

Our principal related parties are equity affiliates operating in the industrial gas business. In 2015, we entered into a long-term sale of equipment contract to engineer, procure, and construct industrial gas facilities with a 25% owned joint venture for Saudi Aramco's Jazan oil refinery and power plant in Saudi Arabia. The agreement included terms that are consistent with those that we believe would have been negotiated at an arm's length with an independent party. Sales related to this contract are included in the results of our Industrial Gases – Global segment. During the three and nine months ended 30 June 2017, sales were approximately $140 and $420, respectively, related to this contract. During the three and nine months ended 30 June 2016, sales were approximately $100 and $200, respectively.

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 at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Other than those detailed below and in Note 2, New Accounting Guidance, to the consolidated financial statements, there have been no changes in accounting policy or accounting estimate in the current period that had a significant impact on our financial condition, change in financial condition, liquidity, or results of operations.

Revenue Recognition

Revenue from equipment sale contracts is recorded primarily using the percentage-of-completion method. Changes in estimates on projects accounted for under this method favorably impacted operating income by approximately $15 and $27 during the three and nine months ended 30 June 2017. We assess the performance of our sale of equipment projects as they progress. Our earnings could be positively or negatively impacted by changes to our forecast of revenues and costs on these projects in the future.

Impairment of Assets

We review our assets for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable.

Plant and Equipment

During the first quarter of 2017, we assessed the recoverability of the carrying value of the assets associated with the Energy-from-Waste discontinued operation, including an air separation unit within continuing operations of our Industrial Gases – EMEA segment, and recorded losses to reduce the carrying value of the assets as of 31 December 2016 to their estimated net realizable value. There have been no changes to our estimates as of 30 June 2017. Refer to Note 11, Fair Value Measurements, for additional information.

Indefinite-lived Intangibles, including Goodwill

For the first nine months of fiscal year 2017, volumes declined in our Latin America reporting unit (LASA), and overall revenue growth did not meet expectations. Due to weak economic conditions in Latin America and expectations for continued volume weakness in the Latin American countries and markets in which we operate, we lowered our long-term growth projections for LASA by more than 200 basis points, which also unfavorably impacted our EBITDA margin. Management considered the revised projections for LASA to be indicators of potential impairment and, accordingly, performed interim impairment testing of our long-lived assets and indefinite-lived intangible assets, including goodwill, as of 30 June 2017 utilizing the revised projections. LASA represents approximately 6% of the Company's total revenue with business units in Chile, Colombia, and other Latin America countries.

In estimating the fair value of this reporting unit's indefinite-lived intangible assets, we utilized the royalty savings method, a form of the income approach. This method estimates the royalties avoided through ownership of the asset. We determined that the carrying value of trade names and trademarks was in excess of fair value, and as a result, we recorded a noncash impairment charge of $16.8 to reduce these indefinite-lived intangible assets to their fair value.

We also tested the recoverability of LASA's long-lived assets, including finite-lived intangible assets subject to amortization, and concluded that they were recoverable from expected future undiscounted cash flows.

The goodwill impairment test is done at the reporting unit level, which is defined as being equal to or below the operating segment for which discrete financial information is available and whose operating results are reviewed by segment managers regularly. As described in Note 2, New Accounting Guidance, to the consolidated financial statements, we elected to early

adopt the new accounting guidance which simplified the test for goodwill by eliminating Step 2, which measured the impairment loss based on the fair value of goodwill. Under the new guidance, an impairment loss is recognized for the amount by which the carrying amount of the reporting unit exceeds its fair value, not to exceed the total amount of goodwill allocated to that reporting unit.

To determine the fair value of LASA as of 30 June 2017, we utilized two valuation approaches, the income approach and the market approach. We reviewed relevant facts and circumstances in determining the weighting of the approaches.

The income approach used a discrete growth period and an estimated exit trading multiple. The principal assumptions utilized include revenue growth rates, EBITDA margins, discount rate, and exit multiple. Projected revenue growth rates and EBITDA assumptions are consistent with those utilized in our revised forecast and long-term financial planning processes and included a reduction in sales growth by more than 200 basis points from that previously identified. The discount rate assumption is calculated based on an estimated market-participant risk-adjusted weighted average cost of capital, which includes factors such as the risk-free rate of return, cost of debt, and expected equity premiums. The exit multiple is determined from comparable industry transactions and, where appropriate, reflects expected long-term growth rates.

Under the market approach, we estimated fair value based on market multiples of revenue and earnings derived from publicly-traded industrial gases companies and regional manufacturing companies, adjusted to reflect differences in size and growth prospects.

Management judgment is required in the determination of each assumption utilized in the valuation model, and actual results could differ from these estimates.

Based on the results of the valuations, we determined that the goodwill associated with LASA was impaired and recorded a noncash impairment charge of $145.3, the amount by which the carrying amount of the reporting unit exceeded its fair value. This charge was not deductible for tax purposes.

The impairments discussed above totaling $162.1 have been reflected on our consolidated income statements within “Goodwill and intangible asset impairment charge" and have been excluded from segment operating income. Refer to Note 8, Goodwill, and Note 9, Intangible Assets, to the consolidated financial statements for additional information.

As of 30 June 2017, the carrying value of Latin America goodwill was $62.5, or less than 1% of consolidated total assets. Further events that could have a negative impact on the level of excess fair value over carrying value of the reporting unit include but are not limited to a decline in market share, pricing pressures, and further economic weakening in the markets we serve. Revenue growth and EBITDA margin assumptions are two primary drivers of the fair value of LASA. We determined that, with other assumptions held constant, a decrease in revenue growth rates of approximately 125 basis points or a decrease in EBITDA margin of approximately 225 basis points would result in an impairment of the remaining goodwill balance.

The carrying value of LASA's other material assets include: Plant and equipment, net of $337.4; customer relationships of $162.6; and trade names and trademarks of $45.3. The trade names and trademarks are classified as indefinite-lived intangible assets.

Equity Investments

During the third quarter of 2017, Abdullah Hashim Industrial Gases & Equipment Co., Ltd. (AHG), a 25%-owned equity affiliate in our Industrial Gases – EMEA segment, completed a review of its business plan and outlook. As a result of the revised business plan, we determined there was an other-than-temporary impairment of our investment in AHG and, therefore, recognized a noncash impairment charge of $79.5 to reduce the carrying value of our investment. This charge is reflected on our consolidated income statements within “Equity affiliates' income (loss)” and was not deductible for tax purposes. This charge has been excluded from segment operating income.

The decline in value results from expectations for lower future cash flows to be generated by AHG, primarily due to challenging economic conditions in Saudi Arabia, including the impacts of lower prices in the oil and gas industry, increased competition, and capital project growth opportunities not materializing as anticipated. The AHG investment was valued based on the results of the income and market valuation approaches.

The income approach utilized a discount rate based on a market-participant, risk-adjusted weighted average cost of capital, which considers industry required rates of return on debt and equity capital for a target industry capital

structure adjusted for risks associated with size and geography. Other significant estimates and assumptions that drive our updated valuation of AHG include revenue growth rates and profit margins that were lower than those upon acquisition and our assessment of AHG's business improvement plan effectiveness.

Under the market approach, we estimated fair value based on market multiples of revenue and earnings derived from publicly-traded industrial gases companies engaged in similar lines of business, adjusted to reflect differences in size and growth prospects.

As of 30 June 2017, the carrying value of our investment in AHG is $68.5 and is reflected in our Industrial Gases – EMEA segment. The investment is reported in “Investment in net assets of and advances to equity affiliates” on our consolidated balance sheets.

NEW ACCOUNTING GUIDANCE

See Note 2, New Accounting Guidance, to the consolidated financial statements for information concerning the implementation and impact of new accounting guidance.

FORWARD-LOOKING STATEMENTS

This Management's Discussion and Analysis contains “forward-looking statements” within the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, including statements about business outlook and investment opportunities. These forward-looking statements are based on management’s reasonable expectations and assumptions as of the date of this report. Actual performance and financial results may differ materially from projections and estimates expressed in the forward-looking statements because of many factors not anticipated by management, including, without limitation, global or regional economic conditions (including, as to the United Kingdom and Europe, the impact of “Brexit”) and supply and demand dynamics in market segments into which the Company sells; political risks, including the risks of unanticipated government actions; acts of war or terrorism; the inability to eliminate stranded costs previously allocated to the Company’s Electronic Materials and Performance Materials divisions which have been divested and other unexpected impacts of the divestitures including tax impacts; significant fluctuations in interest rates and foreign currencies from that currently anticipated; future financial and operating performance of major customers; unanticipated contract terminations or customer cancellations or postponement of projects and sales; our ability to execute the projects in our backlog; asset impairments due to economic conditions or specific events; the impact of price fluctuations in natural gas and disruptions in markets and the economy due to oil price volatility; costs and outcomes of litigation or regulatory investigations; the success of productivity and operational improvement programs; the timing, impact, and other uncertainties of future acquisitions or divestitures, including reputational impacts; the Company's ability to implement and operate with new or untried technologies; the impact of changes in environmental, tax or other legislation, economic sanctions and regulatory activities in jurisdictions in which the Company and its affiliates operate; and other risk factors described in the Company’s Form 10-K for its fiscal year ended 30 September 2016. The Company disclaims any obligation or undertaking to disseminate any updates or revisions to any forward-looking statements contained in this report to reflect any change in the Company’s assumptions, beliefs or expectations or any change in events, conditions, or circumstances upon which any such forward-looking statements are based.

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 2016 Form 10-K. The disclosures about market risk that follow are on a continuing operations basis.

The net financial instrument position decreased from a liability of $4,195.6 at 30 September 2016 to a liability of $3,672.4 at 30 June 2017. The decrease was due primarily to the repayment of long-term debt.

Interest Rate Risk

Our debt portfolio as of 30 September 2016, including the effect of currency and interest rate swap agreements, was composed of 55% fixed-rate debt and 45% variable-rate debt. Our debt portfolio as of 30 June 2017, including the effect of currency and interest rate swap agreements, was composed of 64% fixed-rate debt and 36% variable-rate debt. The change in debt portfolio composition was due primarily to the repayment of commercial paper.

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 period end, with all other variables held constant. A 100 bp increase in market interest rates would result in a decrease of $116 and $137 in the net liability position of financial instruments at 30 June 2017 and 30 September 2016, respectively. A 100 bp decrease in market interest rates would result in an increase of $124 and $148 in the net liability position of financial instruments at 30 June 2017 and 30 September 2016, respectively.

Based on the variable-rate debt included in our debt portfolio, including the interest rate swap agreements, a 100 bp increase in interest rates would result in an additional $14 and $24 of interest incurred per year at the end of 30 June 2017 and 30 September 2016, respectively. A 100 bp decline in interest rates would lower interest incurred by $14 and $24 per year at 30 June 2017 and 30 September 2016, respectively.

Foreign Currency Exchange Rate Risk

The sensitivity analysis related to foreign currency exchange rates assumes an instantaneous 10% change in the foreign currency exchange rates from their levels at period end, 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 $422 in the net liability position of financial instruments at 30 June 2017 and 30 September 2016, respectively. The change in exchange rate sensitivity from 30 September 2016 to 30 June 2017 was due primarily to a reduction in our portfolio of forward exchange contracts. Refer to Note 10, Financial Instruments, for additional information about our outstanding forward exchange contracts.

Item 4. 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). As of 30 June 2017 (the Evaluation Date), an evaluation of the effectiveness of our disclosure controls and procedures was carried out under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer. Based upon that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that, as of the end of the period covered by this report, these disclosure controls and procedures were effective.

On 1 October 2016, Air Products completed the spin-off of Versum into a separate and independent public company. On 3 January 2017, we completed the sale of PMD to Evonik Industries AG. In connection with these transactions, staffing changes, including the consolidation of certain positions and transition of responsibilities, resulted in changes in certain individuals responsible for executing internal controls.

During the quarter ended on the Evaluation Date, other than the above, no other change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 5. Other Information

Not applicable.

Item 6. Exhibits.

Exhibits required by Item 601 of Regulation S-K

10.1	Air Products and Chemicals, Inc. Executive Separation Program as amended effective as of 18 May 2017.
10.2	Compensation Program for Directors effective 1 July 2017.
12.	Computation of Ratios of Earnings to Fixed Charges.
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.	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.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema
101.CAL	XBRL Taxonomy Extension Calculation Linkbase
101.LAB	XBRL Taxonomy Extension Label Linkbase
101.PRE	XBRL Taxonomy Extension Presentation Linkbase
101.DEF	XBRL Taxonomy Extension Definition Linkbase

† 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.

SIGNATURES

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

Air Products and Chemicals, Inc.
(Registrant)

Date: 1 August 2017 By: /s/ M. Scott Crocco
M. Scott Crocco
Executive Vice President and Chief Financial Officer

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