



# PQ Group Holdings Reports Record Fourth Quarter, 2017 Year End Results, and Guidance for 2018

- Sales for the fourth quarter of \$358 million up ~11%; sales for the full year of \$1,472 million up ~5% from 2016 pro forma<sup>1</sup> sales;
- Net Income of \$65 million for the quarter and \$58 million for the full year;
- Adjusted EBITDA for the fourth quarter of \$109 million up ~10%; Adjusted EBITDA for the year of \$453 million up ~8% from 2016 pro forma<sup>1</sup> Adjusted EBITDA;
- Completed and integrated Sovitec acquisition; and
- Providing 2018 outlook; Sales of \$1,545 million to \$1,575 million and Adjusted EBITDA of \$470 million to \$490 million; Free Cash Flow of \$120 million to \$140 million

MALVERN, Pa.--(BUSINESS WIRE)-- PQ Group Holdings Inc. (NYSE:PQG) ("PQ" or the "Company"), reported sales of \$358.1 million for the fourth quarter of 2017, a 10.9% increase from the fourth quarter of 2016. Net income for the fourth quarter was \$65.0 million. Fourth quarter Adjusted EBITDA increased by 10.3% to \$109.4 million.

"With a strong fourth quarter finish, we posted record financial performance in 2017. We successfully grew our business while expanding our margins by 70 basis points to 28%. I'm proud of the team's ability to deliver these attractive results while also achieving the milestone of taking PQ public during the year," commented Jim Gentilcore, Chairman and Chief Executive Officer of PQ.

Sales for 2017 were \$1,472.1 million, an increase of 4.9% from 2016 pro forma sales. Net income for 2017 was \$57.6 million. Adjusted EBITDA for 2017 increased to \$453.3 million, up 7.7% from 2016 pro forma Adjusted EBITDA.

Mr. Gentilcore stated, "We expect another year of attractive growth in 2018 for sales and Adjusted EBITDA with sustained Adjusted EBITDA margins. Cash flow generation in 2018 will be significantly higher than 2017 and we anticipate meaningful year-on-year growth in net earnings as we continue to deleverage our balance sheet."

(1) On May 4, 2016, we consummated a series of transactions to reorganize and combine the businesses of PQ Holdings Inc. and Eco Services Operations LLC under a new holding company, PQ Group Holdings Inc. (the "Business Combination"). In this press release, we present unaudited pro forma information for the year ended December 31, 2016, which gives effect to the Business Combination and the related financing transactions as if they occurred on January 1, 2015. Such information is illustrative and not intended to represent what our results of operations would have been had the Business Combination and the related financing transactions occurred at any time prior to May 4, 2016 or to project our results of operations for any future period. Such information may not be comparable to, or indicative of, future performance

*measures are more fully described and are reconciled from the respective measures determined under GAAP, in "Presentation of Non-GAAP Financial Measures" and the attached table "PQ Non-GAAP Reconciliations."*

### **Environmental Catalysts & Services Segment Results ("EC&S")**

Sales of \$122.9 million for the fourth quarter of 2017 increased 7.5% versus the same period last year, driven largely by higher pricing in regeneration services. Net sales in the fourth quarter of 2017 from the Zeolyst Joint Venture decreased by 7.0% to \$42.8 million, due to lower volume as compared with event driven sales of specialty catalysts in 2016. EC&S Adjusted EBITDA of \$61.0 million for the fourth quarter of 2017 was down 1.3% as a result of decreased volume in the Zeolyst Joint Venture partially offset by increased regeneration services pricing and improved productivity.

Sales of \$473.7 million for 2017 increased 3.5% from pro forma 2016 sales driven largely by improved regeneration services pricing which more than offset expected lower volumes in silica catalysts versus record sales in 2016. Net sales in 2017 from the Zeolyst Joint Venture increased 9.5% to \$143.8 million due to higher sales for emission control and specialty catalysts. EC&S Adjusted EBITDA of \$243.6 million for the year ended 2017 was up 9.8% from 2016 pro forma Adjusted EBITDA. This strong performance is attributed to higher sales volumes in refining services and the Zeolyst Joint Venture, increased pricing in refining services and improved productivity.

### **Performance Materials & Chemicals Segment Results ("PM&C")**

Sales of \$235.9 million increased 12.8% and Adjusted EBITDA of \$55.4 million increased 16.6% for the fourth quarter of 2017 from the prior year period. Growth was driven by higher volumes in both product groups in addition to the Sovitec acquisition.

Sales of \$1,001.8 million for 2017 increased 5.8% from pro forma 2016 sales driven by higher volumes, improved price and mix in both product groups, coupled with contribution from the Sovitec acquisition. PM&C Adjusted EBITDA of \$240.2 million for the year 2017 increased 3.6% from 2016 pro forma Adjusted EBITDA due to higher sales and Sovitec, partly offset by higher variable costs, including the start-up costs and launch of the ThermoDrop<sup>®</sup> product line.

### **Income Taxes**

In the fourth quarter, the Company recorded a provisional benefit of \$89.5 million for the impact of the U.S. Tax Cuts and Jobs Act of 2017. This adjustment reflects the estimated net benefit of reduced deferred tax liabilities offset by a charge for the repatriation transition tax.

### **Balance Sheet and Cash Flows**

For the year ended December 31, 2017, the Company had cash flows from operating activities of \$116.1 million, compared to \$119.7 million for the year ended December 31, 2016, down due to higher accounts receivable from higher sales and planned inventory buildup for ThermoDrop<sup>®</sup> sales in 2018.

At December 31, 2017, the Company had cash and cash equivalents of \$66.2 million, and

total debt outstanding of \$2,270.3 million. On February 8, 2018, the Company successfully refinanced its senior secured term loan facility with a new, pre-payable senior secured term loan facility in an aggregate principal amount of \$1,267 million at a lower interest rate of LIBOR plus 2.50 percent and with an extended maturity. The Company also entered into multiple cross currency swap arrangements to hedge foreign currency risk.

## **2018 Financial Outlook**

The Company provides the following guidance for 2018:

- Sales of \$1,545 million to \$1,575 million, up 5% to 7%
- Adjusted EBITDA of \$470 million to \$490 million, up 4% to 8%
- Depreciation and Amortization of \$175 million to \$185 million
- Interest Expense of \$120 million to \$130 million
- Capital Expenditures of \$150 million to \$155 million
- Effective tax rate in mid-20% range

"Given our underlying expectations for growth and strong Adjusted EBITDA margins coupled with approximately \$55 million of reduced cash interest, we expect free cash flow of \$120 million to \$140 million, up \$145 million to \$165 million over 2017," said Mike Crews, Executive Vice President and Chief Financial Officer.

## **Conference Call and Webcast Details**

On Wednesday March 21, 2018, PQ management will review the results during a conference call and audio-only webcast scheduled for 10:00 a.m. eastern standard time.

Conference Call: Investors may listen to the conference call live via telephone by dialing 1-877-883-0383 (domestic) or 1-412-902-6506 (international) and use the participant code 8267443.

Webcast: An audio-only live webcast of the conference call and presentation materials can be accessed at <http://investor.pqcorp.com>.

A replay of the conference call/webcast will be made available at <http://investor.pqcorp.com/events-presentations>.

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## **About PQ Group Holdings Inc.**

PQ Group Holdings Inc. is an integrated global provider of specialty catalysts, specialty materials and chemicals, and services. Our environmental catalysts and services business is a leading global innovator and producer of catalysts for the refinery, emissions control, and petrochemical industries and is also a leading provider of catalyst recycling services to the

North American refining industry. Our performance materials and chemicals business is a silicates and specialty materials producer with leading supply positions for the majority of our products sold in North America, Europe, South America, Australia and Asia (excluding China) serving diverse and growing end uses such as personal and industrial cleaning products, fuel efficient tires, surface coatings, and food and beverage products.

## **Presentation of Non-GAAP Financial Measures**

In addition to the results provided in accordance with U.S. generally accepted accounting principles ("GAAP") throughout this press release, the Company has provided non-GAAP financial measures—Adjusted EBITDA, Adjusted EBITDA margin, free cash flow, Adjusted net income, Adjusted earnings per share and Adjusted diluted earnings per share—which present operating results on a basis adjusted for certain items. The Company uses these non-GAAP financial measures for business planning purposes and in measuring its performance relative to that of its competitors. The Company believes that these non-GAAP financial measures are useful financial metrics to assess its operating performance from period-to-period by excluding certain items that the Company believes are not representative of its core business. These non-GAAP financial measures are not intended to replace, and should not be considered superior to, the presentation of the Company's financial results in accordance with GAAP. The use of the terms Adjusted EBITDA, Adjusted EBITDA margin, free cash flow, Adjusted net income, Adjusted earnings per share and Adjusted diluted earnings per share may differ from similar measures reported by other companies and may not be comparable to other similarly titled measures. Adjusted EBITDA, free cash flow, Adjusted net income, Adjusted earnings per share and Adjusted diluted earnings per share are reconciled from the respective measures under GAAP in the appendix below.

The Company is not able to provide a reconciliation of the Company's non-GAAP financial guidance to the corresponding GAAP measures without unreasonable effort because of the inherent difficulty in forecasting and quantifying certain amounts necessary for such a reconciliation such as certain non-cash, nonrecurring or other items that are included in net income and EBITDA as well as the related tax impacts of these items, due to the uncertainty and variability of the nature and amount of these future charges and costs.

## **Zeolyst Joint Venture**

The Company's zeolite catalysts product group operates through its Zeolyst Joint Venture, which is accounted for as an equity method investment in accordance with GAAP. The presentation of the Zeolyst Joint Venture's total net sales represents 50% of the total net sales of the Zeolyst Joint Venture. The Company does not record sales by the Zeolyst Joint Venture as revenue and such sales are not consolidated within the Company's results of operations. However, the Company's Adjusted EBITDA reflects the share of earnings of the Zeolyst Joint Venture that have been recorded as equity in net income from affiliated companies in the Company's consolidated statements of operations for such periods and includes Zeolyst Joint Venture adjustments on a proportionate basis based on the Company's 50% ownership interest. Accordingly, the Company's Adjusted EBITDA margins are calculated including 50% of the total net sales of the Zeolyst Joint Venture for the relevant periods in the denominator.

## **Note on Forward-Looking Statements**

Some of the information contained in this press release constitutes “forward-looking statements”. Forward-looking statements can be identified by words such as “anticipates,” “intends,” “plans,” “seeks,” “believes,” “estimates,” “expects,” “projects” and similar references to future periods. Forward-looking statements are based on our current expectations and assumptions regarding our business, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict. Examples of forward-looking statements include, but are not limited to, statements regarding our results of operations, financial condition, liquidity, prospects, growth, strategies, product and service offerings and 2018 outlook. Our actual results may differ materially from those contemplated by the forward-looking statements. We caution you, therefore, against relying on any of these forward-looking statements. They are neither statements of historical fact nor guarantees or assurances of future performance. Important factors that could cause actual results to differ materially from those in the forward-looking statements include, but are not limited to, regional, national or global political, economic, business, competitive, market and regulatory conditions, currency exchange rates and other factors, including those described in the sections titled “Risk Factors” and “Management Discussion & Analysis of Financial Condition and Results of Operations” in our filings with the SEC, which are available on the SEC’s website at [www.sec.gov](http://www.sec.gov). These forward-looking statements speak only as of the date of this release. Factors or events that could cause our actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We undertake no obligation to update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by applicable law.

**PQ GROUP HOLDINGS INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF OPERATIONS**

	Historical			Historical			Pro Forma <sup>(1)</sup>		
	Three Months Ended			Years ended			Year Ended		
	December 31,		%	December 31,		%	December 31,	%	
	2017	2016	Change	2017	2016	Change	2016	Change	
	(in millions, except percentages)								
Sales	\$ 358.1	\$ 322.8	10.9 %	\$ 1,472.1	\$ 1,064.2	38.3 %	\$ 1,403.0	4.9 %	
Cost of goods sold	274.0	252.4	8.6 %	1,095.3	810.1	35.2 %	1,037.1	5.6 %	
Gross profit	84.1	70.4	19.5 %	376.8	254.1	48.3 %	365.9	3.0 %	
Selling, general and administrative expenses	39.2	33.6	16.7 %	145.1	107.6	34.9 %	145.0	0.1 %	
Other operating expense, net	17.0	21.7	(21.7)%	64.2	62.3	3.0 %	75.0	(14.4)%	
Operating income	27.9	15.1	84.8 %	167.5	84.2	98.9 %	145.9	14.8 %	
Equity in net income (loss) from affiliated companies	13.9	6.7	107.5 %	38.8	(2.6)	NM	35.2	10.2 %	
Interest expense	35.0	45.9	(23.7)%	179.0	140.3	27.6 %	187.9	(4.7)%	
Debt extinguishment costs	61.4	1.9	NM	61.9	13.8	NM	1.8	NM	
Other (income) expense, net	4.3	(10.6)	NM	26.0	(3.4)	NM	(8.8)	NM	
Income (loss) before income taxes and noncontrolling interest	(58.9)	(15.4)	282.5 %	(60.6)	(69.1)	(12.3)%	0.2	NM	
Provision for (benefit from) income taxes	(124.5)	(26.0)	378.8 %	(119.2)	10.0	NM	58.0	(305.5)%	
Effective tax rate	211.4%	168.8%		196.7%	(14.5)%		NM		
Net income (loss)	65.6	10.6	NM	58.6	(79.1)	NM	(57.8)	NM	

Less: Net income (loss) attributable to the noncontrolling interest	0.6	(0.1)	NM	1.0	0.6	NM	1.2	NM
Net income (loss) attributable to PQ Group Holdings Inc.	\$ 65.0	\$ 10.7	507.5 %	\$ 57.6	\$ (79.7)	(172.3)%	\$ (59.0)	(197.6)%
Net income (loss) per share:								
Basic income (loss) per share	\$ 0.49	\$ 0.10		\$ 0.52	\$ (1.02)		NM	
Diluted income (loss) per share	\$ 0.49	\$ 0.10		\$ 0.52	\$ (1.02)		NM	
Weighted average shares outstanding:								
Basic	133,138,140	103,947,888		111,299,670	78,016,005		NM	
Diluted	133,895,646	103,947,888		111,669,037	78,016,005		NM	

**PQ GROUP HOLDINGS INC. AND SUBSIDIARIES**  
**CONSOLIDATED BALANCE SHEETS**  
(in millions, except share and per share amounts)

	December 31, 2017	December 31, 2016
<b>ASSETS</b>		
Cash and cash equivalents	\$ 66.2	\$ 70.7
Receivables, net	193.5	160.6
Inventories	262.4	227.0
Prepaid and other current assets	26.9	34.4
Total current assets	549.0	492.7
Investments in affiliated companies	469.3	459.4
Property, plant and equipment, net	1,230.4	1,181.4
Goodwill	1,306.0	1,241.4
Other intangible assets, net	786.1	816.6
Other long-term assets	74.7	68.2
Total assets	\$ 4,415.5	\$ 4,259.7
<b>LIABILITIES</b>		
Notes payable and current maturities of long-term debt	\$ 45.2	\$ 14.5
Accounts payable	149.3	128.5
Accrued liabilities	93.9	99.4
Total current liabilities	288.4	242.4
Long-term debt	2,185.3	2,547.7
Deferred income taxes	189.3	318.5
Other long-term liabilities	120.6	123.1
Total liabilities	2,783.6	3,231.7
Commitments and contingencies		
<b>EQUITY</b>		
Common stock (\$0.01 par); authorized shares 450,000,000; issued shares 135,244,379 and 106,452,330 on December 31, 2017 and December 31, 2016, respectively; outstanding shares 135,244,379 and 106,430,811 on December 31, 2017 and December 31, 2016, respectively	1.4	0.1
Preferred stock (\$0.01 par); authorized shares 50,000,000; no shares issued or outstanding on December 31, 2017 and December 31, 2016	—	—
Additional paid-in capital	1,655.1	1,167.1
Accumulated deficit	(32.8)	(90.4)
Treasury stock, at cost; shares 21,519 on December 31, 2016	—	(0.2)
Accumulated other comprehensive income (loss)	4.3	(53.7)
Total PQ Group Holdings Inc. equity	1,628.0	1,022.9
Noncontrolling interest	3.9	5.1
Total equity	1,631.9	1,028.0
Total liabilities and equity	\$ 4,415.5	\$ 4,259.7

**PQ GROUP HOLDINGS INC. AND SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS**  
(in millions)

	<b>Years ended December 31,</b>	
	<b>2017</b>	<b>2016</b>
Cash flows from operating activities:		
Net income (loss)	\$ 58.6	\$ (79.2)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Depreciation	124.6	89.5
Amortization	52.6	38.8
Acquisition accounting valuation adjustments on inventory sold	0.9	29.1
Debt extinguishment costs, net of creditor fees capitalized	12.2	5.6
Foreign currency exchange (gain) loss	25.8	(3.6)
Pension and postretirement funding in excess of expense	(4.6)	(0.9)
Deferred income tax benefit	(140.2)	(0.1)
Net loss on asset disposals	5.8	4.2
Stock compensation	8.8	5.4
Equity in net (income) loss from affiliated companies	(38.8)	2.6
Dividends received from affiliated companies	44.1	7.6
Other adjustments, net	7.7	13.5
Working capital changes that provided (used) cash, excluding the effect of business combinations:		
Receivables	(11.5)	27.8
Inventories	(21.2)	(2.3)
Prepays and other current assets	(3.4)	0.5
Accounts payable	4.3	11.9
Accrued liabilities	(6.5)	(23.9)
Other working capital, net	(3.1)	(6.8)
Net cash provided by operating activities	<u>116.1</u>	<u>119.7</u>
Cash flows from investing activities:		
Purchases of property, plant and equipment	(140.5)	(121.4)
Investment in affiliated companies	(9.0)	—
Change in restricted cash, net	13.4	(14.8)
Loan receivable under the New Markets Tax Credit Arrangement	(6.2)	(15.7)
Business combinations, net of cash acquired	(41.6)	(1,777.7)
Other, net	1.2	(0.1)
Net cash used in investing activities	<u>(182.7)</u>	<u>(1,929.7)</u>
Cash flows from financing activities:		
Draw down (repayments) of revolver	23.6	(22.0)
Issuance of long-term debt and notes, net of original issue discount and financing fees	300.0	2,344.4
Debt issuance costs	(3.7)	(5.4)
Repayments of long-term debt	(739.5)	(479.1)
IPO proceeds net of costs	480.7	—
Distributions to noncontrolling interests	(0.9)	(1.0)
Other financing activities, net	8.8	24.5
Net cash provided by financing activities	<u>69.0</u>	<u>1,861.4</u>
Effect of exchange rate changes on cash and cash equivalents	<u>(6.9)</u>	<u>(5.9)</u>
Net change in cash and cash equivalents	<u>(4.5)</u>	<u>45.5</u>
Cash and cash equivalents at beginning of period	70.7	25.2
Cash and cash equivalents at end of period	<u>\$ 66.2</u>	<u>\$ 70.7</u>

**Appendix Table A-1: Reconciliation of Net Income (Loss) to Adjusted EBITDA**

	Historical		Historical		Pro Forma <sup>(1)</sup>
	Three Months Ended		Years ended December 31,		Year ended December 31,
	2017	2016	2017	2016	2016
(in millions)					
<b>Reconciliation of net income (loss) attributable to PQ Group Holdings Inc. to Segment Adjusted EBITDA</b>					
Net income (loss) attributable to PQ Group Holdings Inc.	\$ 65.0	\$ 10.7	\$ 57.6	\$ (79.7)	\$ (59.0)
Provision for (benefit from) income taxes	(124.5)	(26.0)	(119.2)	10.0	58.0
Interest expense	35.0	45.9	179.0	140.3	187.9
Depreciation and amortization	48.0	42.7	177.1	128.3	165.8
EBITDA	23.5	73.3	294.5	198.9	352.7
Joint venture depreciation, amortization and interest <sup>(a)</sup>	3.0	2.4	11.1	6.9	10.3
Amortization of investment in affiliate step-up <sup>(b)</sup>	1.7	11.7	8.6	36.3	5.8
Amortization of inventory step-up <sup>(c)</sup>	—	5.6	0.9	29.1	4.9
Impairment of fixed assets, intangibles and goodwill	—	6.9	—	6.9	6.9
Debt extinguishment costs	61.4	1.9	61.9	13.8	1.8
Net loss on asset disposals <sup>(d)</sup>	(0.6)	1.9	5.8	4.2	4.8
Foreign currency exchange (gain) loss <sup>(e)</sup>	4.2	(9.8)	25.8	(3.6)	(9.0)
Non-cash revaluation of inventory, including LIFO	0.5	0.5	3.7	1.3	1.3
Management advisory fees <sup>(f)</sup>	—	1.3	3.8	3.6	5.3
Transaction related costs <sup>(g)</sup>	2.1	(1.5)	7.4	4.7	2.6
Equity-based and other non-cash compensation	4.9	2.1	8.8	7.0	6.5
Restructuring, integration and business optimization expenses <sup>(h)</sup>	5.2	1.7	13.2	16.3	17.9
Defined benefit plan pension cost <sup>(i)</sup>	0.7	(1.2)	2.9	1.4	2.8
Other <sup>(j)</sup>	2.8	2.4	4.9	4.7	6.2
Adjusted EBITDA	109.4	99.2	453.3	331.5	420.8
Unallocated corporate costs	7.0	10.1	30.5	24.0	32.8
Total Segment Adjusted EBITDA	<u>\$ 116.4</u>	<u>\$ 109.3</u>	<u>\$ 483.8</u>	<u>\$ 355.5</u>	<u>\$ 453.6</u>

#### Descriptions to PQ Non-GAAP Reconciliations

- a) We use Adjusted EBITDA, Adjusted Net Income, and Adjusted Basic and Diluted EPS, as a performance measure to evaluate our financial results. Because our environmental catalysts and services segment includes our 50% interest in our Zeolyst Joint Venture, we include an adjustment for our 50% proportionate share of depreciation, amortization and interest expense of our Zeolyst Joint Venture.
- b) Represents the amortization of the fair value adjustments associated with the equity affiliate investment in our Zeolyst Joint Venture as a result of the Business Combination. We determined the fair value of the equity affiliate investment and the fair value step-up was then attributed to the underlying assets of our Zeolyst Joint Venture. Amortization is primarily related to the fair value adjustments associated with inventory, fixed assets and intangible assets, such as customer relationships, formulations and product technology.
- c) As a result of the Business Combination, there was a step-up in the fair value of inventory at PQ Holdings, which is amortized through cost of goods sold in the statement of operations.
- d) We do not have a history of significant asset disposals. However, when asset disposals occur, we remove the impact of net gain/loss of the disposed asset because such impact primarily reflects the non-cash write-off of long-lived assets no longer in use.
- e) Reflects the exclusion of the negative or positive transaction gains and losses of foreign currency in the income statement primarily related to the Euro denominated term loan and the non-permanent intercompany debt denominated in local currency translated to U.S. dollars.
- f) Reflects consulting fees paid to CCMP and affiliates of INEOS for consulting services that include certain financial advisory and management services. These payments ceased as of the effective date of our initial public offering.



- g) Relates to certain transaction costs described in our consolidated financial statements for the year ended December 31, 2017 as well as other costs related to several transactions that are completed, pending or abandoned and that we believe are not representative of our ongoing business operations.
- h) Includes the impact of restructuring, integration and business optimization expenses that are related to specific, one-time items, including severance for a reduction in force and post-merger integration costs that are not expected to recur.
- i) Represents adjustments for defined benefit pension plan costs in our income statement. More than two-thirds of our obligations under defined benefit pension plans are frozen and the remaining obligations primarily relate to plans operated in certain of our non-U.S. locations that, pursuant to jurisdictional requirements, cannot be frozen. As such, we do not view such expenses as core to our ongoing business operations.
- j) Other costs consist of certain expenses that are not core to our ongoing business operations and are generally related to specific, one-time items, including environmental remediation-related costs associated with the legacy operations of our business prior to the Business Combination, capital and franchise taxes, non-cash asset retirement obligation accretion and the initial implementation of procedures to comply with Section 404 of the Sarbanes-Oxley Act.

**Appendix Table A-2: Reconciliation of Net Income to Adjusted Net Income**

	Historical		Historical		Pro Forma <sup>(1)</sup>
	Three Months Ended		Years ended		Year ended
	December 31,		December 31,		December 31,
	2017	2016	2017	2016	2016
<b>Reconciliation of net income (loss) attributable to PQ Group Holdings Inc. to Adjusted Net Income (Loss)</b>					
Net income (loss) attributable to PQ Group Holdings Inc.	\$ 65.0	\$ 10.7	\$ 57.6	\$ (79.7)	\$ (59.0)
Amortization of investment in affiliate step-up <sup>(b)</sup>	2.5	7.2	6.5	22.5	3.6
Amortization of inventory step-up <sup>(c)</sup>	0.1	3.7	0.6	21.8	3.0
Impairment of long-lived and intangible assets	—	4.3	—	4.3	4.3
Debt extinguishment costs	46.1	1.2	46.4	8.5	1.1
Net loss on asset disposals <sup>(d)</sup>	0.2	1.2	3.9	2.7	3.1
Foreign currency exchange (gain) loss <sup>(e)</sup>	1.2	(1.6)	16.1	9.3	(1.6)
Non-cash revaluation of inventory, including LIFO	0.9	0.3	2.8	0.8	0.8
Management advisory fees <sup>(f)</sup>	0.6	0.8	2.8	2.2	3.3
Transaction related costs <sup>(g)</sup>	2.5	(1.0)	5.6	2.9	1.5
Equity-based and other non-cash compensation	4.4	1.3	6.6	4.4	4.0
Restructuring, integration and business optimization expenses <sup>(h)</sup>	3.0	1.2	7.6	10.4	11.4
Defined benefit plan pension cost <sup>(i)</sup>	0.7	(0.7)	2.0	1.0	2.0
Other <sup>(j)</sup>	4.7	1.6	5.9	2.8	3.8
Adjusted Net Income (Loss)	<u>\$ 131.9</u>	<u>\$ 30.2</u>	<u>\$ 164.4</u>	<u>\$ 13.9</u>	<u>\$ (18.7)</u>
Impact of tax reform	(106.5)		(106.5)		
Adjusted Net Income, excluding tax reform	<u>\$ 25.4</u>		<u>\$ 57.9</u>		
Adjusted Net Income per share:					
Basic income per share	\$ 0.19	\$ 0.29	\$ 0.52	\$ 0.18	NM
Diluted income per share	\$ 0.19	\$ 0.29	\$ 0.52	\$ 0.18	NM
Weighted average shares outstanding:					
Basic	133,138,140	103,947,888	111,299,670	78,016,005	NM
Diluted	133,895,646	103,947,888	111,669,037	78,016,005	NM

See Appendix A-1 for Descriptions to PQ Non-GAAP Reconciliations in table above.

**Appendix Table A-3: Business Segment Sales and Adjusted EBITDA**

	Historical			Historical Pro Forma <sup>(1)</sup>		
	Three Months Ended			Years ended		
	December 31,			December 31,		
	2017	2016	% Change	2017	2016	% Change
(in millions, except percentages)						
<b>Sales:</b>						
Silica Catalyst	\$ 23.0	\$ 19.9	15.6%	\$ 75.3	\$ 84.2	(10.6)%
Refining Services	99.9	94.4	5.8%	398.3	373.7	6.6%
EC&S	122.9	114.3	7.5%	473.7	457.9	3.5%
Performance Chemicals	172.1	158.6	8.5%	687.6	663.9	3.6%
Performance Materials	66.5	52.4	26.9%	324.2	291.3	11.3%
Eliminations	(2.7)	(1.9)	42.1%	(10.0)	(8.0)	25.0%
PM&C	235.9	209.1	12.8%	1,001.8	947.2	5.8%
Corporate	(0.7)	(0.6)	16.7%	(3.4)	(2.1)	61.9%
<b>Total sales</b>	<b>\$ 358.1</b>	<b>\$ 322.8</b>	<b>10.9%</b>	<b>\$1,472.1</b>	<b>\$ 1,403.0</b>	<b>4.9%</b>
Zeolyst Joint Venture Sales	\$ 42.8	\$ 46.0	(7.0)%	\$ 143.8	\$ 131.3	9.5%
<b>Adjusted EBITDA:</b>						
EC&S	\$ 61.0	\$ 61.8	(1.3)%	\$ 243.6	\$ 221.8	9.8%
PM&C	55.4	47.5	16.6%	240.2	231.8	3.6%
Corporate	(7.0)	(10.1)	(30.7)%	(30.5)	(32.8)	(7.0)%
<b>Total Adjusted EBITDA</b>	<b>\$ 109.4</b>	<b>\$ 99.2</b>	<b>10.3%</b>	<b>\$ 453.3</b>	<b>\$ 420.8</b>	<b>7.7%</b>
<b>Adjusted EBITDA Margin:</b>						
EC&S <sup>(2)</sup>	36.8%	38.6%		39.4%	37.6%	
PM&C	23.5%	22.7%		24.0%	24.5%	

(2) Adjusted EBITDA margin calculation includes proportionate 50% share of sales from Zeolyst International joint venture.

**Appendix Table A-4: Free Cash Flow**

	Years ended December 31,	
	2017	2016
Net cash provided by operating activities	\$ 116.1	\$ 119.7
Less:		
Purchases of property, plant and equipment	(140.5)	(121.4)
Free Cash Flow	<u>\$ (24.4)</u>	<u>\$ (1.7)</u>

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Source: PQ Group Holdings Inc.

