



**First Quarter 2018**

**May 10, 2018 – 11:00 AM ET**



**INVESTOR PRESENTATION**

# LEGAL DISCLAIMER

## Forward-Looking Statements

Some of the information contained in this presentation, the conference call during which this presentation is reviewed and any discussions that follow 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). Any forward-looking statement made by us in this presentation, the conference call during which this presentation is reviewed and any discussions that follow speaks only as of the date on which it is made. 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.

Certain supply share statistics included in this presentation, including our estimated supply share positions, are based on management estimates.

## Non-GAAP Financial Measures

This presentation includes certain non-GAAP financial measures, including Adjusted EBITDA, Adjusted EBITDA margin, adjusted net income, adjusted EPS, adjusted diluted EPS, and free cash flow, which are provided to assist in an understanding of our business and its performance. These non-GAAP financial measures should be considered only as supplemental to, and not as superior to, financial measures prepared in accordance with GAAP. Non-GAAP financial measures should be read only in conjunction with consolidated financials prepared in accordance with GAAP. Reconciliations of non-GAAP measures to the relevant GAAP measures are provided in the appendix of this presentation.

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, including transaction and restructuring related, that are included in net income and EBITDA as well as the related tax impacts of these items and asset dispositions/acquisitions and changes in foreign currency exchange rates that are included in cash flow, due to the uncertainty and variability of the nature and amount of these future charges and costs.

## Non-GAAP Financial Measures – Business Combination

On May 4, 2016, we consummated a series of transactions (the “Business Combination”) to reorganize and combine the businesses of PQ Holdings Inc. and Eco Services Operations LLC under a new holding company, PQ Group Holdings Inc. In this presentation, we present 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 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

## Zeolyst Joint Venture

Our zeolite catalysts product group operates through Zeolyst International and Zeolyst C.V. (our 50% owned joint ventures that we refer to collectively as our “Zeolyst Joint Venture”), which we account for as an equity method investment in accordance with GAAP. The presentation of our Zeolyst Joint Venture’s total net sales in this presentation represents 50% of the total net sales of our Zeolyst Joint Venture. We do not record sales by our Zeolyst Joint Venture as revenue and such sales are not consolidated within our results of operations. However, our Adjusted EBITDA reflects our share of the earnings of our Zeolyst Joint Venture that have been recorded as equity in net income from affiliated companies in our consolidated statements of operations for such periods and includes Zeolyst Joint Venture adjustments on a proportionate basis based on our 50% ownership interest. Accordingly, our Adjusted EBITDA margins are calculated including 50% of the total net sales of our Zeolyst Joint Venture for the relevant periods in the denominator.

# 2018 – POSITIONED FOR GROWTH AND SIGNIFICANT CASH FLOW

At least \$50 million of debt paydown targeted in 2H

## ◆ Deliver industry leading financial results

- Sales growth of 5% to 7%
- Adjusted EBITDA growth of 4% to 8% with sustained high margins
- Free cash flow of \$120 million to \$140 million

## ◆ Consistent capital allocation

- Targeting 3.0x to 3.5x net debt to Adjusted EBITDA
  - Pay down 0.5x turn per year
- Invest in organic high growth projects and selective accretive tuck-in acquisitions

## ◆ Accelerate our innovation product pipeline



# FIRST QUARTER 2018 HIGHLIGHTS

A solid start to the year

## ◆ Strong financial results led by double-digit sales growth

- Sales up 10% and Adjusted EBITDA up 7%
- Adjusted EBITDA Margin of 26.7%

## ◆ Capital structure further strengthened with Term Loan refinancing

- ~ \$14 million in annualized cash interest savings from Q1 refinancing; cash interest now \$90 million lower than pre-IPO levels

## ◆ Attractive growth from both segments in Q1; Positioned to meet robust customer demand for remainder of 2018

### ➤ *Environmental Catalysts & Services (EC&S):*

- Silica catalysts – robust global polyethylene demand for plastics
- Regeneration services – equipped to serve higher alkylation production from rising gasoline octane requirements

### ➤ *Performance Materials & Chemicals (PM&C):*

- ThermoDrop® – compelling highway safety product with better striping performance at lower installed cost

# FIRST QUARTER 2018 FINANCIAL RESULTS

Growth from both business segments

(\$ in millions)	First Quarter 2018	First Quarter 2017	% Change
Sales	366.2	332.9	10%
Adjusted EBITDA	107.9	101.2	7%
Adjusted EBITDA Margin <sup>1</sup>	26.7%	27.7%	(100 bps)

- Growth drivers driven by strong demand from performance chemicals and Zeolyst JV coupled with favorable currency
- Adjusted EBITDA margin slightly impacted by weather-related production costs (50 bps) and pass-through of higher raw material costs (40 bps)
- Improved margin profile anticipated in 2H 2018

PQ Group Holdings Inc.	
Sales:	%
Volume	2.7
Price/Mix	3.3
Currency	4.0
Sales Change	10.0



# ENVIRONMENTAL CATALYSTS & SERVICES PERFORMANCE HIGHLIGHTS

Solid demand from key markets

(\$ in millions)	First Quarter 2018	First Quarter 2017	% Change
<b>Sales</b>			
PQ	117.2	111.3	5%
Zeolyst JV	38.3	32.7	17%
<b>Adjusted EBITDA</b>	<b>58.4</b>	<b>56.4</b>	<b>4%</b>
<b>Adjusted EBITDA Margin<sup>1</sup></b>	<b>37.6%</b>	<b>39.2%</b>	<b>(160 bps)</b>

- Sales higher on demand growth from emission controls, largely offsetting weather-related lower refining volumes
- Adjusted EBITDA margins lower primarily on cost pass-through of raw material increases in sales (130 bps)

Environmental Catalysts & Services	
<b>Sales:</b>	<b>%</b>
Volume	(1.1)
Price/Mix	5.8
Currency	0.6
<b>Sales Change</b>	<b>5.3</b>



# PERFORMANCE MATERIALS & CHEMICALS PERFORMANCE HIGHLIGHTS

Results benefited from organic and inorganic growth

(\$ in millions)	First Quarter 2018	First Quarter 2017	% Change
Sales	249.8	222.6	12%
Adjusted EBITDA	57.2	52.5	9%
Adjusted EBITDA Margin	22.9%	23.6%	(70 bps)

- Sales rose on increased demand for sodium silicates, the Sovitec acquisition and favorable currency
- Adjusted EBITDA margins slightly lower on sales mix and higher weather-related costs

Performance Materials & Chemicals	
Sales:	%
Volume	4.5
Price/Mix	2.1
Currency	5.6
Sales Change	12.2

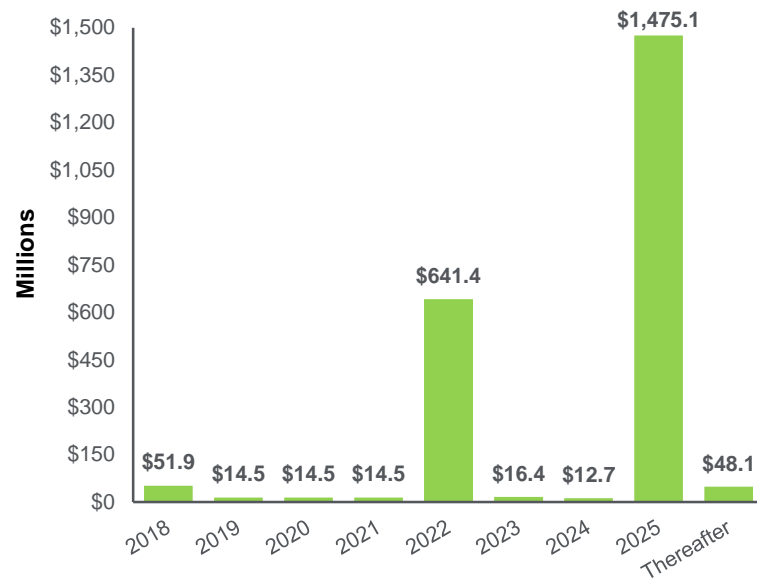


# DEBT SCHEDULE

Flexibility to pay down debt and interest rate exposure mitigated

Capitalization	Q1 2018
<b>Debt:</b>	<b>(\$ in millions)</b>
ABL Revolving Credit Facility	30.0
New USD First Lien Term Loan	1,263.8
First Lien Secured Notes	625.0
<b>Total First Lien Debt</b>	<b>1,918.8</b>
Senior Unsecured Notes	300.0
Other debt	70.3
<b>Total Debt</b>	<b>2,289.1</b>
Cash	58.8
<b>Net Debt</b>	<b>2,230.3</b>
<b>Net Debt/Adjusted EBITDA<sup>1</sup></b>	<b>4.8x</b>

DEBT MATURITY SCHEDULE



- **\$1 billion (notional) interest rate cap limits effect of rising interest rates through 2020**
  - 100 bps increase in LIBOR rates increases interest expense by only \$1.9 million<sup>2</sup>
- Weighted average cost of debt (including XCCY swap) of ~5%
- First lien term loan is fully pre-payable
- **Expect to begin debt paydown in 2H of at least \$50 million**

# 2018 GUIDANCE

Expected Free Cash Flow of \$120 Million to \$140 Million

(\$ in millions except %)	2017 Actual	2018 Outlook	Change from 2017
Sales	1,472.1	1,545 – 1,575	5% – 7%
Adjusted EBITDA	453.3	470 – 490	4% – 8%
<b>Free Cash Flow</b>	<b>(24.4)</b>	<b>120 – 140</b>	<b>~145 – 165</b>
Interest Expense	179.0	120 – 130	(~50 – 60)
Depreciation & Amortization			
PQ	177.1	175 – 185	
Zeolyst JV	11.1	12 - 14	
Capital Expenditures	140.5	150 – 155	
Effective Tax Rate (ex GILTI)	NM	Mid 20% range	

## ○ Free cash flow Y-on-Y improvement expected from:

- Lower refinancing costs (\$50 million)
- Reduced interest costs (\$55 million)
- Working capital improvement (\$20 million)
- Higher Adjusted EBITDA performance (\$27 million from guidance mid-point)
- Increased capital spending offset by other items



# PQ INVESTMENT HIGHLIGHTS

Leading Global Producer of Specialty Catalysts & Services, Specialty Materials & Chemicals

- 🟡 #1 and #2 positions in nearly all product lines
- 🟡 GDP+ growth
- 🟡 Input cost small as % of customer total product cost
- 🟡 High margin environmentally friendly applications
- 🟡 Track record of innovation
- 🟡 Strong sustainable free cash flows

39%<sup>1</sup>

LTM Q1 2018 Adjusted EBITDA margin

24%<sup>1</sup>

## ENVIRONMENTAL CATALYSTS & SERVICES (EC&S)



REFINING  
SERVICES



SILICA  
CATALYST



ZEOLYST  
JV

## PERFORMANCE MATERIALS & CHEMICALS (PM&C)



PERFORMANCE  
CHEMICALS



PERFORMANCE  
MATERIALS

# APPENDIX

# SALES AND ADJUSTED EBITDA MAJOR CHANGE FACTORS

## First Quarter 2018

### SALES

Sales (in \$ millions and %)	Three Months Ended March 31, 2018					
	PQ Group Holdings Inc.		Environmental Catalysts & Services		Performance Materials & Chemicals	
<b>Sales:</b>	\$	%	\$	%	\$	%
Volume	9.1	2.7	(1.2)	(1.1)	10.1	4.5
Price/Mix	11.0	3.3	6.4	5.8	4.6	2.1
Currency	13.2	4.0	0.7	0.6	12.5	5.6
<b>Sales Change</b>	<b>33.3</b>	<b>10.0</b>	<b>5.9</b>	<b>5.3</b>	<b>27.2</b>	<b>12.2</b>

### ADJUSTED EBITDA

Adjusted EBITDA (in \$ millions and %)	Three Months Ended March 31, 2018					
	PQ Group Holdings Inc.		Environmental Catalysts & Services		Performance Materials & Chemicals	
<b>Adjusted EBITDA:</b>	\$	%	\$	%	\$	%
Volume/Mix	4.8	4.7	5.0	8.7	(0.2)	(0.3)
Price	10.9	10.7	6.4	11.2	4.6	8.8
Variable Cost	(12.3)	(12.1)	(6.7)	(11.7)	(5.7)	(10.9)
Currency	3.3	3.3	0.4	0.7	3.0	5.7
Other	-	-	(3.1)	(5.4)	3.0	5.7
<b>Adjusted EBITDA Change</b>	<b>6.7</b>	<b>6.6</b>	<b>2.0</b>	<b>3.5</b>	<b>4.7</b>	<b>9.0</b>

# CASH FLOW

Improved ~\$15 million Y-on-Y

(\$ in millions)	First Quarter 2018	First Quarter 2017
<b>Cash Flow from Operations before interest and tax</b>	<b>43.0</b>	<b>37.6</b>
Less:		
Cash Paid for Taxes	<b>4.4</b>	<b>9.3</b>
Cash Paid for Interest	<b>16.6</b>	<b>21.6</b>
<b>Cash Flow from Operations</b>	<b>22.0</b>	<b>6.7</b>
Less: Capital Investments <sup>1</sup>	<b>33.3</b>	<b>32.4</b>
<b>Free Cash Flow</b>	<b>(11.3)</b>	<b>(25.7)</b>

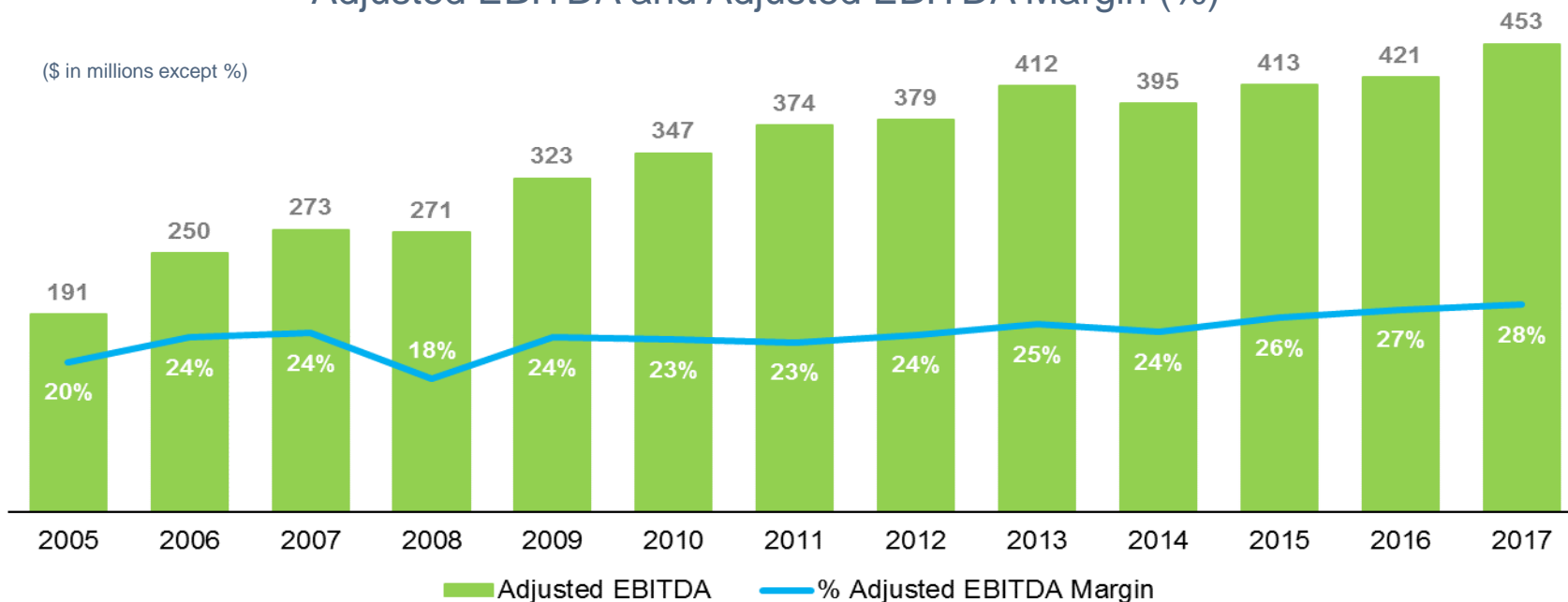
- Cash flow use due to seasonality of business
- Strong free cash flow generation expected in the third and fourth quarters



# DEMONSTRATED STRONG FINANCIAL PERFORMANCE ACROSS MACROECONOMIC CYCLES

Stable and improving margins

Adjusted EBITDA and Adjusted EBITDA Margin (%)<sup>1,2,3</sup>



- Long term EBITDA CAGR of 7.5%
- Attractive, stable margins
- Steady margin expansion a result of high value added specialty products growth

(1) Adjusted EBITDA for the period from 2005 to 2014 represents Legacy Eco Adjusted EBITDA and Legacy PQ Adjusted EBITDA prior to the Business Combination. Adjusted EBITDA for 2015 and 2016 is presented on a pro forma basis given effect to the Business Combination as further described in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2017

(2) See appendix titled "Reconciliations" for additional information regarding Adjusted EBITDA, including a reconciliation of the amounts to net income (loss) for each of the periods presented as well as information regarding the Legacy Eco and Legacy PQ financial information included in the such amounts

(3) Adjusted EBITDA margin calculation includes proportionate 50% share of net sales from Zeolyst joint venture

# QUARTERLY SEGMENT SALES AND ADJUSTED EBITDA

## Year 2017 and Q1 2018

(\$ in millions except %)	Three Months Ended March 31, 2018	March 31, 2017	June 30, 2017	September 30, 2017	December 31, 2017	Year Ended December 31, 2017
<b>Sales:</b>						
Silica Catalysts	16.5	17.1	20.1	15.1	23.0	75.3
Refining Services	100.7	94.2	103.9	100.4	99.9	398.4
<b>Environmental Catalysts &amp; Services</b>	<b>117.2</b>	<b>111.3</b>	<b>124.0</b>	<b>115.5</b>	<b>122.9</b>	<b>473.7</b>
Performance Materials	62.7	53.8	99.5	104.4	66.5	324.2
Performance Chemicals	190.0	170.9	169.1	175.5	172.1	687.6
Eliminations	(2.9)	(2.1)	(2.4)	(2.8)	(2.7)	(10.0)
<b>Performance Materials &amp; Chemicals</b>	<b>249.8</b>	<b>222.6</b>	<b>266.2</b>	<b>277.1</b>	<b>235.9</b>	<b>1,001.8</b>
Inter-segment sales eliminations	(0.8)	(1.0)	(0.9)	(0.8)	(0.7)	(3.4)
<b>Total sales</b>	<b>366.2</b>	<b>332.9</b>	<b>389.3</b>	<b>391.8</b>	<b>358.1</b>	<b>1,472.1</b>
Zeolyst joint venture net sales	38.3	32.7	30.7	37.6	42.8	143.8
<b>Adjusted EBITDA:</b>						
Environmental Catalysts & Services	58.4	56.4	64.3	61.9	61.0	243.6
Performance Materials & Chemicals	57.2	52.5	66.4	65.9	55.4	240.2
<b>Total Segment Adjusted EBITDA</b>	<b>115.6</b>	<b>108.9</b>	<b>130.7</b>	<b>127.8</b>	<b>116.4</b>	<b>483.8</b>
Corporate	(7.7)	(7.7)	(7.9)	(7.9)	(7.0)	(30.5)
<b>Total Adjusted EBITDA</b>	<b>107.9</b>	<b>101.2</b>	<b>122.8</b>	<b>119.9</b>	<b>109.4</b>	<b>453.3</b>
<b>Adjusted EBITDA Margin:</b>						
Environmental Catalysts & Services <sup>1</sup>	37.6%	39.2%	41.6%	40.4%	36.8%	39.4%
Performance Materials & Chemicals	22.9%	23.6%	24.9%	23.8%	23.5%	24.0%
<b>Total Adjusted EBITDA Margin<sup>1</sup></b>	<b>26.7%</b>	<b>27.7%</b>	<b>29.2%</b>	<b>27.9%</b>	<b>27.3%</b>	<b>28.1%</b>

# QUARTERLY NET INCOME TO ADJUSTED NET INCOME AND ADJUSTED DILUTED EARNINGS PER SHARE

## Q1 2018 and Year 2017

(\$ in millions except per share data)	Three Months Ended March 31, 2018	Three Months Ended				Year Ended December 31, 2017
		March 31, 2017	June 30, 2017	September 30, 2017	December 31, 2017	
Reconciliation of Sales to Adjusted Net Income (loss)						
Sales	366.2	332.9	389.3	391.8	358.1	1,472.1
Cost of goods sold	288.1	250.2	281.8	289.3	274.0	1,095.3
Gross Profit	78.1	82.7	107.5	102.5	84.1	376.8
Selling, general and administrative expenses	40.6	34.7	35.3	36.4	40.3	146.7
Other operating expense, net	9.3	10.3	17.0	19.8	17.0	64.2
Operating Income	28.2	37.7	55.2	46.3	26.8	165.9
Equity in net (income) from affiliated companies	(11.9)	(5.9)	(8.7)	(10.3)	(13.9)	(38.8)
Interest expense, net	29.2	46.8	48.2	49.1	35.0	179.0
Debt extinguishment costs	5.9	—	—	0.5	61.4	61.9
Other expense, net	5.0	2.0	14.3	4.9	3.2	24.4
Income (loss) before income taxes and non-controlling interest	-	(5.2)	1.4	2.1	(58.9)	(60.6)
(Benefit) provision for income taxes	(0.5)	(2.9)	3.0	5.2	(124.5)	(119.2)
Effective tax rate	NM	55.8 %	214.3 %	247.6 %	211.4 %	196.7 %
Net Income (loss)	0.5	(2.3)	(1.6)	(3.1)	65.6	58.6
Less: Net income (loss) attributable to the non-controlling interest	0.3	0.2	(0.1)	0.3	0.6	1.0
Net Income (loss) attributable to PQ Group Holdings, Inc. <sup>1</sup>	0.2	(2.5)	(1.5)	(3.4)	65.0	57.6
Amortization of investments in affiliated step-up <sup>b</sup>	1.2	2.1	0.9	1.0	2.5	6.5
Amortization of inventory step-up <sup>c</sup>	1.1	0.5	0.0	0.0	0.1	0.6
Debt extinguishment costs	4.1	0.0	0.0	0.3	46.1	46.4
Net loss on asset disposal <sup>d</sup>	0.8	0.2	1.4	2.1	0.2	3.9
Foreign currency exchange loss <sup>e</sup>	2.9	0.2	9.5	5.2	1.2	16.1
Non-cash revaluation of inventory, including LIFO	3.4	1.4	0.0	0.5	0.9	2.8
Management advisory fees <sup>f</sup>	0.0	0.7	0.7	0.8	0.6	2.8
Transaction and other related costs <sup>g</sup>	0.3	0.8	1.7	0.6	2.5	5.6
Equity-based and other non-cash compensation	2.6	0.9	0.6	0.7	4.4	6.6
Restructuring, integration and business optimization expenses <sup>h</sup>	0.7	1.0	0.7	2.9	3.0	7.6
Defined benefit pension plan cost <sup>i</sup>	0.4	0.4	0.4	0.5	0.7	2.0
Other <sup>j</sup>	0.7	0.3	0.9	0.0	4.7	5.9
Adjusted net income, including tax reform and non-cash GILTI tax	18.4	6.0	15.3	11.2	131.9	164.4
Impact of tax reform <sup>2</sup>	—	—	—	—	(106.5)	(106.5)
Impact of non-cash GILTI tax <sup>3</sup>	2.5	—	—	—	—	—
Adjusted net income	20.9	6.0	15.3	11.2	25.4	57.9
Diluted net income (loss) per share:	0.00	(0.02)	(0.01)	(0.03)	0.49	0.52
Adjusted diluted net income per share:	0.16	0.06	0.15	0.11	0.19	0.52
Diluted Weighted Average shares outstanding	133.9	103.9	104.0	104.1	133.9	111.7

(1) Refer to slide 18 for more information with respect to each adjustment.

(2) Represents the provisional benefit of \$89.5 million for the impact of the U.S. Tax Cuts and Jobs Act of 2017 recorded in Net Income and an additional \$17.0mm related to the tax reform impact on the adjustments to Net income.

(3) Represents the impact associated with Tax Cuts and Jobs Act of 2017 Global Intangible Low Taxed Income ("GILTI"). The Company is required to record a non-cash provision on GILTI as a result of having a U.S. Net Operating Loss ("NOL") which precludes us from using foreign tax credits ("FTCs") to offset the GILTI until the NOL is fully utilized. As this provision does not impact our cash taxes and we will be able to utilize FTCs to offset GILTI once the NOLs are utilized, we do not view this as core to our ongoing business operations.

# RECONCILIATION OF NON-GAAP FINANCIAL MEASURES

## Net Income (Loss) to Segment Adjusted EBITDA

(\$ in millions)	Three Months Ended March 31, 2018	March 31, 2017	Three Months Ended June 30, 2017	September 30, 2017	December 31, 2017	Year Ended December 31, 2017
<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.	0.2	(2.5)	(1.5)	(3.4)	65.0	57.6
Provision for (benefit from) income taxes	(0.5)	(2.9)	3.0	5.2	(124.5)	(119.2)
Interest expense	29.2	46.8	48.1	49.1	35.0	179.0
Depreciation and amortization	48.5	40.6	42.6	45.9	48.0	177.1
<b>EBITDA</b>	<b>77.4</b>	<b>82.0</b>	<b>92.2</b>	<b>96.8</b>	<b>23.5</b>	<b>294.5</b>
Joint venture depreciation, amortization and interest <sup>a</sup>	3.3	2.6	2.9	2.6	3.0	11.1
Amortization of investment in affiliate step-up <sup>b</sup>	1.7	3.5	1.7	1.7	1.7	8.6
Amortization of inventory step-up <sup>c</sup>	1.6	0.9	—	—	—	0.9
Debt extinguishment costs	5.9	—	—	0.5	61.4	61.9
Net loss on asset disposals <sup>d</sup>	1.2	0.3	2.6	3.5	(0.6)	5.8
Foreign currency exchange loss <sup>e</sup>	5.1	2.0	14.3	5.3	4.2	25.8
Non-cash revaluation of inventory, including LIFO	4.9	2.4	—	0.8	0.5	3.7
Management advisory fees <sup>f</sup>	—	1.3	1.2	1.3	—	3.8
Transaction related costs <sup>g</sup>	0.4	1.4	2.9	1.0	2.1	7.4
Equity-based and other non-cash compensation	3.8	1.7	1.2	1.0	4.9	8.8
Restructuring, integration and business optimization expenses <sup>h</sup>	1.1	1.7	1.3	5.0	5.2	13.2
Defined benefit plan pension cost <sup>i</sup>	0.6	0.7	0.7	0.8	0.7	2.9
Other <sup>j</sup>	0.9	0.7	1.8	(0.4)	2.8	4.9
<b>Adjusted EBITDA</b>	<b>107.9</b>	<b>101.2</b>	<b>122.8</b>	<b>119.9</b>	<b>109.4</b>	<b>453.3</b>
Unallocated corporate costs	7.7	7.7	7.9	7.9	7.0	30.5
<b>Total Segment Adjusted EBITDA</b>	<b>115.6</b>	<b>108.9</b>	<b>130.7</b>	<b>127.8</b>	<b>116.4</b>	<b>483.8</b>
<b>EBITDA Adjustments by Line Item</b>						
<b>EBITDA</b>	<b>77.4</b>	<b>82.0</b>	<b>92.2</b>	<b>96.8</b>	<b>23.5</b>	<b>294.5</b>
Cost of goods sold	7.3	4.0	0.7	2.2	1.0	7.9
Selling, general and administrative expenses	4.9	2.3	2.1	2.1	6.8	13.2
Other operating expense, net	2.4	4.7	9.0	9.1	8.7	31.5
Equity in net (income) loss from affiliated companies	1.7	3.5	1.7	1.7	1.7	8.6
Other expense (income), net <sup>1</sup>	10.9	2.1	14.2	5.4	64.7	86.5
Joint venture depreciation, amortization and interest(a)	3.3	2.6	2.9	2.6	3.0	11.1
<b>Adjusted EBITDA</b>	<b>107.9</b>	<b>101.2</b>	<b>122.8</b>	<b>119.9</b>	<b>109.4</b>	<b>453.3</b>

# RECONCILIATION OF NON-GAAP FINANCIAL MEASURES

## Descriptions to PQ Non-GAAP Reconciliations

### Descriptions to PQ Non-GAAP Reconciliations

- a) We use Adjusted EBITDA, Adjusted Net Income and Adjusted Diluted EPS as performance measures 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 Sovitec acquisition and Business Combination, there was a step-up in the fair value of inventory, 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 upon the closing of our initial public offering.
- g) Relates to certain transaction costs described in our condensed consolidated financial statements for the three months ended March 31, 2018 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 defined benefit pension plan obligations are under defined benefit pension plans that 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. Included in this line-item are rounding discrepancies that may arise from rounding from dollars (in thousands) to dollars (in millions).

# 2005 – 2017 RECONCILIATIONS

## Legacy Business - Sales & Adjusted EBITDA

(\$ in millions)	Year Ended December 31,												
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015 Pro forma <sup>3</sup>	2016 Pro forma <sup>3</sup>	2017
<b>Reconciliation of sales and adjusted EBITDA</b>													
Legacy PQ Sales <sup>1</sup>	635.3	708.6	775.0	977.0	1,009.9	1,087.9	1,115.0	1,084.8	1,085.0	1,114.9			
Legacy Eco Services Sales <sup>2,5</sup>	260.2	288.7	289.4	449.4	293.9	331.0	415.4	410.4	390.8	397.4			
<b>Total Legacy Sales</b>	<b>895.5</b>	<b>997.3</b>	<b>1,064.4</b>	<b>1,426.4</b>	<b>1,303.8</b>	<b>1,418.9</b>	<b>1,530.4</b>	<b>1,495.2</b>	<b>1,475.8</b>	<b>1,512.3</b>	<b>1,413.2</b>	<b>1,403.0</b>	<b>1,472.1</b>
<b>Zeolyst Joint Venture total net sales</b>	<b>45.6</b>	<b>60.4</b>	<b>63.8</b>	<b>69.4</b>	<b>63.2</b>	<b>69.9</b>	<b>99.0</b>	<b>87.3</b>	<b>148.5</b>	<b>106.7</b>	<b>159.8</b>	<b>131.3</b>	<b>143.8</b>
Legacy PQ Adjusted EBITDA <sup>1</sup>	119.6	151.2	177.3	164.3	225.4	253.8	274.6	268.7	306.8	288.1			
Legacy Eco Services Adjusted EBITDA <sup>2</sup>	71.5	99.0	96.0	106.4	97.5	93.6	99.8	110.8	105.5	107.2			
<b>Total Adjusted EBITDA</b>	<b>191.1</b>	<b>250.2</b>	<b>273.3</b>	<b>270.7</b>	<b>322.9</b>	<b>347.4</b>	<b>374.4</b>	<b>379.5</b>	<b>412.3</b>	<b>395.3</b>	<b>413.1</b>	<b>420.7</b>	<b>453.3</b>
<b>% Adjusted EBITDA Margin <sup>4</sup></b>	<b>20.3%</b>	<b>23.7%</b>	<b>24.2%</b>	<b>18.1%</b>	<b>23.6%</b>	<b>23.3%</b>	<b>23.0%</b>	<b>24.0%</b>	<b>25.4%</b>	<b>24.4%</b>	<b>26.3%</b>	<b>27.4%</b>	<b>28.1%</b>

(1) Legacy PQ is the results of PQ Holdings Inc. prior to the Business Combination in May 2016

(2) Legacy Eco Services is the results of Eco Services which prior to December 1, 2014 was part of Solvay / Rhodia. Information for 2005 through 2010 is derived from financial information obtained in connection with the acquisition of Legacy Eco and is unaudited and, in some cases, is based upon management estimates

(3) Reflects unaudited pro forma results which gives effect to the Business Combination

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

(5) Balances presented for Legacy Eco Services in 2014 includes \$361.8 and \$35.5 of sales and \$98.1 and \$9.1 of Adjusted EBITDA, for the predecessor and successor periods, respectively. Refer Appendix slide 21 for additional details.

# 2005 – 2014 RECONCILIATIONS FOR ADJUSTED EBITDA AND MARGINS

## Legacy PQ<sup>1</sup> - Net Income (Loss) to Adjusted EBITDA Reconciliation

	Year Ended December 31,									
(\$ in millions)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>Reconciliation of net income (loss) attributable to Legacy PQ to Adjusted EBITDA</b>										
Net income (loss) attributable to PQ Group Holdings Inc.	(41.9)	14.2	(64.7)	(168.2)	(10.6)	11.5	(65.4)	5.2	26.7	(3.6)
Provision for (benefit from) income taxes	(2.2)	14.0	(29.5)	(28.7)	(12.1)	(4.7)	(0.4)	18.9	10.6	7.5
Interest expense	38.3	51.9	79.5	119.2	117.8	112.9	121.2	111.2	120.3	111.6
Depreciation and amortization	44.6	46.8	57.1	88.6	99.6	96.1	98.0	93.4	89.4	91.3
<b>EBITDA</b>	<b>38.8</b>	<b>126.9</b>	<b>42.4</b>	<b>10.9</b>	<b>194.7</b>	<b>215.8</b>	<b>153.4</b>	<b>228.7</b>	<b>247.0</b>	<b>206.8</b>
Joint venture depreciation, amortization and interest	2.4	2.1	2.1	2.3	2.1	2.5	3.2	3.3	6.1	6.9
Amortization of investment in affiliate step-up	6.1	1.2	24.7	4.0	2.7	2.7	2.7	2.6	2.4	2.4
Amortization of inventory step-up	32.7	14.0	22.2	28.3	-	-	-	-	-	-
Impairment of long-lived and intangible assets	-	-	-	-	0.3	4.2	67.0	-	0.9	-
Debt extinguishment costs	-	-	32.6	-	-	-	2.3	20.1	20.3	2.5
Net loss on asset disposals	0.3	0.2	0.7	0.1	1.0	(1.1)	2.2	0.8	0.7	0.7
Foreign currency exchange loss	-	-	1.2	77.0	(26.9)	13.9	5.6	(1.9)	4.4	23.4
Non-cash revaluation of inventory, including LIFO	(0.8)	-	1.7	1.1	7.6	(1.5)	1.5	0.3	1.2	0.8
Management advisory fees	-	2.0	2.0	3.5	5.0	5.0	7.0	7.5	5.0	5.0
Transaction related costs	29.9	0.5	35.8	11.5	0.5	5.5	7.9	0.5	5.6	24.4
Equity-based and other non-cash compensation	0.1	0.1	0.3	0.7	0.2	1.0	0.3	-	1.0	-
Restructuring, integration and business optimization expenses	12.6	4.4	7.3	7.3	11.7	2.6	5.9	5.6	5.4	4.6
Defined benefit plan pension cost	-	-	-	0.6	(0.1)	-	-	0.5	3.6	1.8
Other	(2.5)	(0.2)	4.3	17.0	26.6	3.2	15.6	0.7	3.2	8.8
<b>Adjusted EBITDA</b>	<b>119.6</b>	<b>151.2</b>	<b>177.3</b>	<b>164.3</b>	<b>225.4</b>	<b>253.8</b>	<b>274.6</b>	<b>268.7</b>	<b>306.8</b>	<b>288.1</b>

# 2005 – 2014 RECONCILIATIONS FOR ADJUSTED EBITDA AND MARGINS

## Legacy Eco Services<sup>1</sup> - Net Income (Loss) to Adjusted EBITDA Reconciliation

(\$ in millions)	Year Ended December 31,										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014 Successor	2014 Predecessor
<b>Reconciliation of net income (loss) attributable to Legacy Eco Services to Adjusted EBITDA</b>											
Net income (loss) attributable to PQ Group Holdings Inc.	45.4	73.0	73.8	86.0	73.4	65.4	35.8	48.5	39.3	(22.1)	30.5
Provision for (benefit from) income taxes	-	-	-	-	-	-	20.5	26.3	21.4	-	14.6
Interest expense	-	-	-	-	-	-	0.2	0.2	0.1	8.5	0.1
Depreciation and amortization	26.1	26.0	22.2	20.4	24.1	27.5	30.7	38.8	43.5	3.0	42.5
<b>EBITDA</b>	<b>71.5</b>	<b>99.0</b>	<b>96.0</b>	<b>106.4</b>	<b>97.5</b>	<b>92.9</b>	<b>87.2</b>	<b>113.8</b>	<b>104.3</b>	<b>(10.6)</b>	<b>87.7</b>
Amortization of inventory step-up	-	-	-	-	-	-	2.1	-	-	3.5	-
Net loss on asset disposals	-	-	-	-	-	-	-	-	-	-	-
Management advisory fees	-	-	-	-	-	-	-	-	-	-	-
Transaction related costs	-	-	-	-	-	-	-	-	-	15.5	-
Equity-based and other non-cash compensation	-	-	-	-	-	-	0.4	0.6	0.7	-	0.5
Restructuring, integration and business optimization expenses	-	-	-	-	-	-	-	-	-	0.2	-
Defined benefit plan pension cost	-	-	-	-	-	-	-	-	-	-	-
Transition services	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	0.7	10.1	(3.6)	0.5	0.5	9.9
<b>Adjusted EBITDA</b>	<b>71.5</b>	<b>99.0</b>	<b>96.0</b>	<b>106.4</b>	<b>97.5</b>	<b>93.6</b>	<b>99.8</b>	<b>110.8</b>	<b>105.5</b>	<b>9.1</b>	<b>98.1</b>

# 2015 – 2017 RECONCILIATIONS FOR ADJUSTED EBITDA AND MARGINS

## Post-Business Combination PQ - Net Income (Loss) to Adjusted EBITDA Reconciliation

(\$ in millions)	Year Ended December 31,		
	2015 Pro forma <sup>1</sup>	2016 Pro forma <sup>1</sup>	2017
<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.	(26.9)	(59.0)	57.6
Provision for (benefit from) income taxes	1.2	58.0	(119.2)
Interest expense	199.6	187.9	179.0
Depreciation and amortization	152.2	165.8	177.1
<b>EBITDA</b>	<b>326.1</b>	<b>352.7</b>	<b>294.5</b>
Joint venture depreciation, amortization and interest	7.9	10.3	11.1
Amortization of investment in affiliate step-up	6.6	5.8	8.6
Amortization of inventory step-up	-	4.9	0.9
Impairment of long-lived and intangible assets	0.4	6.9	-
Debt extinguishment costs	-	1.8	61.9
Net loss on asset disposals	5.5	4.8	5.8
Foreign currency exchange loss	21.1	(9.0)	25.8
Non-cash revaluation of inventory, including LIFO	(2.1)	1.3	3.7
Management advisory fees	5.6	5.3	3.8
Transaction related costs	13.2	2.6	7.4
Equity-based and other non-cash compensation	4.2	6.5	8.8
Restructuring, integration and business optimization expenses	8.6	17.9	13.2
Defined benefit plan pension cost	6.1	2.8	2.9
Transition services	4.9	-	-
Other	5.1	6.2	4.9
<b>Adjusted EBITDA</b>	<b>413.2</b>	<b>420.8</b>	<b>453.3</b>

